

# Dawson Climate Change Adaptation Plan

Community Greenhouse & Food Security  
Initiative

## FINAL REPORT

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# **Dawson City Community Greenhouse and Cold Storage Initiative**

## **FINAL REPORT**

### **Introduction:**

The Project received funding to investigate the possibility and feasibility of developing a community greenhouse and cold storage facility in Dawson City and to build public support for and understanding of the need to work towards food security. An aim of the Project is to help reduce the carbon footprint related to food production and consumption for the community. The Project was designed to provide a solution to the objectives outlined in the Dawson Climate Change Adaptation Plan. The primary concern is our dependency on distant food sources and the consequent vulnerability we will be faced with should/when fuel prices rise or transportation routes be compromised in some way affecting our ability to access these food sources. The goal is to inspire people to take up the hoe and get growing.

### **Methods**

To achieve the objective, the following efforts were undertaken:

- In the interest of trying to encourage the consumption of more locally grown produce, I commissioned an artist (Cari Tandegal) to design a character comprised of vegetables that will grow in our climate. This is the Klondike Locavore. It was and will be used in all promotional materials

around food security for Dawson, including the frontispiece to this report.

- Public Screening of film FRESH (Documentary film that gives an overview of the current industrial food model and local efforts to do things differently):
  - March 30 Danoja Zho Cultural Centre followed by community dinner at the Support Centre of all locally available food (Salmon, caribou, Yukon potatoes, Moosehide broccoli) broke down on the dessert. 18 people attended and stayed for a healthy discussion. Partnership with Tr'ondëk Hwëch'in Health and Social Dept.
  - April 9 Robert Service High School classes (Grade 10-12) 20 students watched film and we had a short discussion afterward. Teachers were all really supportive.
  - April 9 KIAC Ballroom – Community Potluck Dinner – participants encouraged to bring a dish made from locally grown or harvested food...we were all pleasantly surprised... (I thought it would be a cranberry jelly fest but there was fish and caribou and sprout salad and homemade bread and potato salad, wild blueberry crisp etc. (I digress)) Aprox. 25 people attended the event. Partnership with Conservation Klondike Society.

- April 10<sup>th</sup> Recreation Centre 1-3 pm Seedy Saturday.
  - An opportunity for people to meet other gardeners, talk gardening, swap seeds. There were handouts on the basics, a resource library set up, mini demonstrations on seeding, and germination, verma-composting and sprouting as well as activities for kids. With project dollars I purchased \$300 worth of open pollinated, organic seeds from William Dam seeds that were given away during this event and the other events as well as donated to the community garden. Overwhelmed with 80 participants throughout the afternoon. Partnership with the Community Garden Committee.
  
- April 23 Ingrid Wilcox visits Robert Service School
  - Grade 3 class – composting demonstration
  - Grade 12 Food Science class – provided instruction on seeding and caring for their herb garden (Herbs were transplanted to the community garden by teacher Tara McCauley– students will assist with the harvest/drying in the fall.)
  
  - Grade 1 class – guidance on caring for their seedlings and hardening off for transplanting... (Their plants were transferred to the community garden in the Trinke Zho Day Camp bed by many of the students from the class)
  
- April 24, 25 Greenhouse and Outdoor Gardening Workshop with Ingrid Wilcox
  - Recreation Centre. 30 participants over two days.

## Partnership with Recreation Parks Association Yukon.

- May 21&22 Dawson City Annual Gold Show. I had a minimal presence here, as I was unable to attend the event. I did however have brochures available that included an introduction to the Klondike Locavore, a list of varieties of vegetables that have had some success in the north, a basic description of food security. I also ran a contest to name all the vegetables that make up the Klondike Locavore. The prize was a copy of the Yukon Gardener's Manual.

June 30<sup>th</sup> release of campaign on supporting local food producers. Rolling ads, mail drop of promotional flyer, Klondike Sun article, article in the Kentra Tay (TH community newsletter), radio ads, laminated posters in general placed around the town and the Klondike Locavore specifically placed at restaurants and stores who purchase local produce, and a redesigned and refurbished sign for the Dawson Farmer's Market in response to enquiries by the farmers about how to promote the Market.

## **Results/Discussion:**

Discussions with the Klondike Growers Association:

The 'association' such as it is, comprised of the few commercial growers in the region, met with me on a few occasions to discuss issues of food security, the

challenges they face as producers, and how I might support their work.

The final bullet describing the publicity efforts represents the bulk of communications support the growers suggested would be helpful to them. It is being released at the end of June, in advance of the products becoming available at the Farmer's Market and in the grocery stores.

The grower's all approved of the use of the Klondike Locavore to promote the consumption and production of local produce and have approved of the flyer's content and appreciate that the 'message' did not come from them but from an outside organization.

The grower's are not concerned about any adverse impacts that a community greenhouse will have on their sales.

They recognize that while they may have some days of frustration over people not purchasing an abundance of a certain crop (E.g. cauliflower, when they wanted broccoli..) and having issues with the grocery stores being unwilling to buy produce from local farmers at a premium to imported produce, , the growers are able to sell most of what they produce.

The producers, collectively speaking, fall far short of being able to meet the produce demand in the community. They are the first to admit that if Dawson is to become 'food secure', we need more farmers in action.

Community Supported Agriculture? Presently, the Farmers Market provides them with the best option in terms of output of energy, price they are able to receive for that effort and the quantity of produce they have available at any given time.

A CSA program could be an option in the future if there were more producers contributing to the food network. A central organizing body that received the goods from the different producers, and then was responsible for its distribution would be the ideal situation.

## Discussions with Tr'ondëk Hwëch'in:

In the early spring, partnership with TH Health and Social department on the screening of the film "Fresh" was productive. Though the screening had only 20 viewers, and the feast slighter fewer, food security is on the minds of many Citizens. In relation to the community garden, the Elders Coordinator office, Wellness Coordinator office, Trinke Zho daycare, and several TH citizens assumed garden plots demonstrating a commitment towards increasing local food production and reviving a practice of growing gardens. None of these 'departments' had beds at last year's garden. The food grown will be shared with citizens participating in their programs and the gardens themselves tended by children, elders and families alike.

TH has participated in Climate Change planning for some time now. When I approached them to become a partner in the Community Greenhouse the answer was gladly positive. They are aware of the vulnerabilities we all face relying on imported food and the impact that this has not only on the health of citizens, as the food is sometimes substandard and of questionable contents, but also the impact that the industrial food model, with its heavy reliance on fossil fuels, has on the environment. Added to this, their concerns over the impact climate change may have on traditional food supplies, and TH is a willing partner in working towards food security.

Chief and Council readily adopted a resolution to pursue the partnership for Community Greenhouse. They provided a plot for the greenhouse, in the new Tr'ondëk Hwëch'in subdivision (C-4) in the most western corner of the subdivision, close to the Klondike River and next to the Heritage site where traditional activities such as skinning and tanning of hides takes place.

The location in the new subdivision is exciting to me. The community is young, with lots of kids who will now be raised in a neighborhood with a large community greenhouse. The greenhouse will not only be a place for people to grow food and potentially traditional medicines, but a place to learn about growing in controlled

climates. This greenhouse represents a 'first step' for the community in becoming more food secure. The First Nation has a lot of potential in terms of agricultural development on settlement land. The greenhouse will be a good impetus and confidence building exercise to begin pursuing some of their agricultural options.

Once the greenhouses are erect, citizens of TH, through the Social Programs will be employed to build the beds and place the soil in the beds in preparation for next spring's first planting. A simple passive heating system and a wood heating system will also be installed with the assistance of TH Housing crew.

#### Discussions with Robert Service School:

Working with the school was positive. I chose to work with the Grade 1 and the Grade 3 class as both have growing and community involvement within their curriculum requirements, which tied in nicely with the opportunity to participate in the community garden. Both classes were able to benefit from the guidance of Ingrid Wilcox whose visit was sponsored by the Recreation Parks Association of Yukon. Ingrid also guided the Grade 12 Food Science class in their efforts to start herb seedlings. These were later transplanted to a community garden plot cared for by the instructor Tara McCauley. The students however will harvest in the fall once school is in. Tara is also planning on starting new plants later in the season and to grow herbs indoors for their winter food science classes. I passed the science curriculum, developed by Yukon Agriculture Association some years back, to the Grade 9 Science teacher who said it was helpful. The Career and Planning Class, the Science Class and the Food Science class all watched the film FRESH though time didn't permit much of a discussion afterward... it was food for thought...

#### Discussions with Klondike Regional Training Trust Fund:

In an effort to continue promoting food security and supporting the need to provide educational opportunities to people interested in growing, I applied to the KRTTF to fund a series of workshops through the summer months and into the fall to include different types of preservation in addition to seasonal advice on growing and the harvesting. Interestingly, the proposal was turned down as gardening is considered a 'hobby' and will not assure anyone of 'employment' in the future – the qualifications for funding. I applied twice, out of principle, to argue that agriculture is the most important skill of the future and of necessity will be a source of employment as the agricultural system on which we rely is unsustainable and therefore will not survive into the future. I argued (in writing) that the Klondike region has the most potential for growth, quite literally, in the territory and if enough people were inspired to grow and take advantage of the climate, could expand a vital sector of our economy. Simple, hand-on workshops are a way of encouraging people to start out growing small and subtly building confidence that could take them to the next step of developing a market garden.

#### Discussions with Yukon College:

During my research into community greenhouse operations in the north, I was inspired by the work being done in Inuvik through a partnership with Aurora College. The Dawson Campus coordinator Karsten Henriksen was very supportive of food security initiatives and was interested in partnering on delivering course work through the College. Funding would have come through KRTTF (see above). He also tried to have included in the new college facility, a greenhouse portion into the design. Speaking with Karen Barnes, the Vice-President Education and Training, for Yukon College, I was encouraged to hear that there are discussions regarding attaching an agriculture component to their new Bachelor of Environmental Science Program.

#### Discussions with other community gardens and greenhouse operations:

There are community gardens or greenhouses in many of Yukon's communities. They are all run slightly differently and motivated by different values, often dependent on their funding sources. The Downtown Urban Gardeners began from an Anti-Poverty Coalition effort to combat poverty by providing low cost garden plots to low-income families. The greenhouse, cold-storage and garden community operation in Carmacks is run by the First Nation and provides free vegetable delivery to elders as well as assistance to those in need with their backyard gardens. They also sell some produce and give the remainder for public feasting events. The program has been funded federally and supports youth workers in the summer months. The FN pays the salary of a year round coordinator through the Health and Social Department. Haines Junction runs a community greenhouse through HJ Employment Development Society providing support for individuals with social disabilities. The City does all the administration and pay roll and Public Works manages the maintenance. The greenhouse is supported through the United Way and sales from bedding plants – which is their primary focus. Teslin, Carcross, Pelly and Old Crow, all have community gardens that are run by the First Nation to provide healthy, fresh food for their citizens.

Greenhouses in the Arctic communities of Inuvik, Paulatuk, Resolute and Iqaluit are all run by non-profit societies with various types of community and corporate support. All the arctic greenhouses have a “pay for a plot” arrangement and some aspect of commercial sales to help support the maintenance and operations of the space.

Alaska too has a number of community greenhouses...The Sitka Community Greenhouse and Education Center is a project of the Sitka Local Foods Network to address one of the top local health priorities identified at the 2008 Sitka Health Summit. Galena, Fairbanks, Tanacross, and Girdwood all have community gardens that are operated similarly to the Dawson Community Garden – started up with public funds and maintained through volunteer effort and donations.

The University of Fairbanks runs tests of northern species (cold tolerant) under different conditions and shares their findings with interested growers. Botanical Gardens in Anchorage and Fairbanks are interesting environments within which to conduct research and engage the public (tourists and locals alike) in the world of agriculture and its northern possibilities.

#### Other investigations:

The Food Security Research Network run through Lakehead University is an excellent example of applied research and engagement.

The Creston Valley Food Action Network is a really inspiring model that is supported in part with research dollars that serve the needs and interests of the local growers. Originally the project was supported through a 9-month horticulture program that was discontinued. They turned to the research arm and rely heavily on volunteer labour to continue with their operations which last year produced 2000 lbs of produce – the majority of which was delivered to gleaners such as the local food bank and senior's center. They are interested in partnering with Dawson to share knowledge on cold climate crops etc...

#### Discussions with the City of Dawson:

Under a previous council, the community greenhouse project was viewed very favorably as was the initiative to include a community garden in the new city park. A change of Council came with a change of values, to a certain extent and the previous support was no longer a given.

I approached the new council about providing land for the community greenhouses and though they were not instantly supportive they did extend an informal invitation to erect a greenhouse in the Old Grader Station Yard lot where the sewage and wastewater treatment facility is being constructed. In a year's time, when that facility is complete and running, it will be more obvious whether this is a suitable location or not. There was a hope that the waste heat generated

from the treatment station would be able to supply the community greenhouse. When I discussed the idea with the chief engineer he assured me that there would be little to no surplus waste heat in the shoulder seasons when the greenhouse would be most in need of it.

#### Discussions with the Catholic Church in Dawson City:

There is a beautiful sunny, north-south oriented, empty lot next to the Catholic Church, beside the Community Recreation Centre. I approached the Bishop by telephone in Whitehorse to inquire about the possibility of employing the land for a community greenhouse project. He was enthusiastic about the idea and encouraged me to approach the parishioners and the Priest in the community. I've had a few meetings with the members and there is some interest in the project. I couldn't get a commitment to a land arrangement in time to take advantage of some federal incentive money, which was quickly evaporating so idea for the moment remains 'a potential'. I will continue to meet with them to see if they would like to donate or make available land for this purpose...

#### Discussions with the Yukon Youth Conservation Corp:

A Y2C2 Crew of 5 workers will be sent up to Dawson to assist with the erection of the Community Greenhouse at C-4 the week of August 9<sup>th</sup>. They will be under the supervision of designer of the Greenhouse from Coast to Caribou Shelters. They will work for 3 days erecting the 60 x 30 foot, galvanized steel, semi-gothic, 6 ml poly covered greenhouse with rain barrels for water collection and a hydraulic ventilation system.

#### Discussion with the Canadian Centre for Community Renewal:

The CCCR has recently opened an office in Whitehorse and has secured a project that will carry out targeted primary market research with promise to create

markets and stimulate investment and/or expansion from local growers. The research will consider help to strengthen/increase the local agricultural sector through community supported agricultural initiatives. Because of my work on this project, I have been asked to sit on the Advisory Committee for this project. The CCCR also provided some valuable information and examples of community run food cooperatives.

## COLD STORAGE FACILITY

Part of my proposal was to investigate the possibility of a community cold storage unit.

### Discussions with the regional growers:

Part of the Dawson Community Adaptation Plan identified cold storage as a means of enabling farmers to expand their markets by being able to offer some produce to customers year round.

As a group we visited the historic Bear Creek Compound as it has an existing, disused, cold storage facility. Parks Canada has begun to seek partnerships for some of the buildings at the compound and we went to see if this might be a possibility. The facility is in a state of disrepair and it would take some considerable work to see it functioning again. It was obvious however that the facility relied on constant electrical heat during the coldest parts of the winter – electricity that was both abundant and cheap in the hey-days of Bear Creek. Parks Canada however has installed a data logger to track the temperatures in the facility for our future considerations on how much heat might be required to function at an even temperature.

The visit was positive and provided a forum for farmers to discuss the need for such a facility.

In reality none of the farmers presently in a position to market their product would

take advantage of such a facility. Farmers on the river would find the effort of hauling the heavier root crops to town late in the season too arduous. The only other farmer with similar capacity leaves in the winter and so would require someone else to distribute and sell the product as need. The others simply do not have the present capacity to be able to take advantage of such an opportunity.

#### Discussions with the grocery stores:

Any purchase of root crops from local producers would have to have been stored in a facility that meets the very strict food safety standards they are subjected to. Essentially this means a minimum requirement of a compressor that can keep a static temperature at a minimum cost of \$50 000. Though one grocer spends between \$2 – 300 000.00 on shipping alone per annum, the cost of expanding their cold storage capacity have not been pursued.

#### **Next Steps:**

In advance of the greenhouse being erected, I will invite the community of C-4 and Dawson to witness and assist in its construction as well as the work that will follow building the beds and placing the dirt.

The fall and winter months will be spent facilitating the discussion on how the greenhouse will be operated and maintained. This I will do as a volunteer in association with the Conservation Klondike Society and Tr'ondëk Hwëch'in departments of Lands and Resources and Health and Social Programs. The greenhouse will be open to anyone to participate as was the original agreement with TH and based on need and willingness to support the greenhouse with volunteer effort. Many community greenhouses have a component to them

whereby a portion of food is donated to gleaners (organizations who provide food to people in need). I suspect the community of gardeners will support some distribution of this sort. The goal is to set the greenhouse up in such a manner that it will become a self-sustaining, community supported food security project. The enthusiasm shown by the community is evidence enough that the project has the seeds of success.

### **Recommendations/Future Steps:**

The project was challenging in so much as there is so much that needs to be done to repair what has been lost and to rebuild a healthy local food system.

Education is a critical piece in the enabling the growth of the agricultural sector in the Yukon – be it hands-on workshops and seminars or more formal training at a college level. Simple courses help to build confidence and just get people started. The community has the benefit of being able to draw upon a wealth of knowledge that still exists in the older population who never lost the practice of gardening and who know the value and importance of gardening and who are willing to share.

The educational workbook by the Agricultural Association could be improved upon and curriculum work for each of the grade levels would be fantastic. In the world of experiential education there are innumerable learning opportunities in a gardening context that if engaged would go a long way towards channeling youth into work in the agriculture sector.

In the fall time it would be nice to see a territory wide campaign/challenge in the schools around food security and mileage tallies of meals... That same campaign could be run in the dead of winter to compare results...

Market and home garden tours, and the contemporary blogsites and facebook

pages are all effective means of sharing knowledge about northern gardening. The community garden committee has set up such sites and hopes to develop a booklet based on knowledge gathered this winter on successful northern gardening.

Community feasts featuring local food are, I feel, a really powerful means of highlighting both the feasibility of growing here and the superior nature of local food. Hopefully there will be a few feasts this summer and fall to celebrate the harvests.

In a bigger picture, the Klondike region has the greatest potential for agricultural growth, quite literally, of any Yukon community. The climate and soil here are the most favorable in the territory. This potential has already been demonstrated, as Dawson was once an exporter of surplus produce to neighboring roadhouses and communities along the river.

This history should be emphasized to help further inspire people of the potential for economic growth in this realm.

More education needs to be done around food security and the present imbalance in the industrial food system that has food being shipped into the community at unsustainably low costs. The true cost of producing healthy food needs to be further understood so that people are willing to pay a fair price for the superior local product. This work will also serve to inspire potential youth to take up farming as an economically viable career option.

I did some research on innovation in greenhouse technology and using biomass and alternative heating sources. There are all kinds of options out there... For the moment we will be using a passive water heating system with a wood heat back up support.

YTG Community and Transportation Services Department is installing a 'gasifier' for the Old Crow Community Greenhouse next year. The Gasifier is a new

technology that essentially incinerates garbage with zero emissions. The heat generated will be used to heat their greenhouse. I was approached recently to see if Dawson greenhouse would be interested in such a technology. It comes slightly late in the season for us to engage in but I will continue the discussion nonetheless in the hopes of future greenhouses being able to employ this technology.

Though the Cold Storage idea is perhaps not ripe in terms of what is currently being produced it remains an essential component of food security in our community. A partnership with the grocers and the producers should continue to be explored as well as the possibility of running such a facility in a cooperative manner with members purchasing 'space' in the facility – be they individuals, grocers or producers..

## **Conclusion:**

Community gardening of any variety is a positive, effective and gentle means of inspiring people to take responsibility for producing their own food. It seems people are aware that the food system on which we currently rely is neither tasty nor sustainable and are willing to make the effort to grow at least some of their own food. Projects such as these are both positive and neutral and appear to be able to bridge political and ideological differences and readily allow people to gather around a common need and a common concern.

People working together helps to ease the fear of gardening as common mistakes can either be avoided entirely through the advice of more experienced gardeners or shared in good humour with others. Bringing people together to share and learn and grow food is a great community building exercise whose rewards are both visible and palatable.

For these reasons, or perhaps entirely different ones, the climate is favorable to

developing a community greenhouse. All the people I have talked to (with the exception of the Mayor) think this is a great idea and a positive move forward. At the very least it is a step in the right direction and will hopefully serve to further motivate us all to 'get growing', get away from this heavy dependency on fossil fuels, start building a healthier, more sustainable community and perhaps become a leader in organic agricultural production...

All over the north community gardens and greenhouses are popping up in response to the reality that our dependence on distant food sources is not sustainable, affordable nor sensible. With simple technology and some innovation it is more than possible to grow ample food for people living in the north. In particular, Dawson City will have a community greenhouse built this summer as a direct result of this project.

I appreciate the opportunity to pursue this project and help support the movement of re-building a local food system. It has been a really positive experience for me and my expectation is that the project will continue to grow.

Chris Clarke