

Small-scale Agriculture: A Means for Community Connecting with Agriculture

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ABSTRACT

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Small scale farming at the homestead or hobby farm scale provides opportunities for members of the public to visit farms, see livestock, and engage directly with how their food is produced. This scale is often dismissed as of minor importance, yet the biosecurity of larger farms makes these small farms often the only ones that the public can visit. My research explores whether communities want these direct connections with agriculture, and if this provides understanding of the interconnection of farming ecosystems. As a small scale egg producer, I first provide a personal autoethnography of my own operation. I then examine my customers attitudes toward my produce and farm, and analyse interview of other local producers and community members.

KEYWORDS Agriculture, Connectivity, Diversity, Family farming, Homesteading, Small-scale agriculture, Sustainable agriculture

PREFACE

Dear Reader,

I have chosen to live connected with our ecosystem through how I run my farm. As a small scale farmer, I believe that research is best when it is informed by the reality of farming, because there are many things that cannot be known until experienced. I did not grow up with the land that I have now and look after, nor was I provided with the traditional teaching at the family level that generational farmers receive through their day to day activities. Yet, I have written my thesis around my own experiences to share through time, patience, and a bit of space small scale agricultural practices can snowball into small-scale farms, especially with family run operations. Through these experiences, I have also learned that many people yearn for a direct connection with farming. I began believing, and still believe, that small scale farms are the best, often being the only, place for this connection with agriculture. Through our shared lessons, my hope is to encourage others to develop their own connection with their world around them that can lead to more resilient ecosystems. I am sharing this work with you about my beginning experiences with agriculture.

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DEFINITIONS AND MEANING OF ACRONYMS

CFIA NEOC GIS is a database:

CFIA Canadian Food Inspection Agency

NEOC National Emergency Operations Centre

GIS Geographic Information Systems

Biosecurity – limiting, denying, and/or restricting access to farms to prevent the transfer of biohazards such as disease, fungus, weeds, or pests, most commonly insect pests.

Restrictions can include people including the public, and industry professionals, as well as animals or plants, such as restricting wild bird access (barn swallows) to barns.

Community Supported Agriculture – abbreviated to CSA; a sales method where crops and/or products are sold directly from a farm to many customers, referred to as members, who pay a set price at the beginning of each growing season in order to receive a delivery of crops and/or products throughout the growing season (Buttery, 2014).

Ecosystem-based Adaptation – abbreviated to EbA; considering biodiversity and other parts of the ecosystem when implementing agricultural management systems (Vignola et al. 2015).

Genetically Modified – abbreviated to GM; altering the DNA or RNA of food or organisms (GMOs, as GM organisms) through genetic engineering.

Homestead – a small scale independent producers, commonly with a goal of self-sufficiency and self-determination.

Integrated Crop-Livestock System – abbreviated to ICLS; a blend of livestock rearing and growing crops.

Large-scale – refers to the scale of agricultural production size, greater than 2 hectares, producing with the intention of sales as a priority.

Small-scale or smallholder – refers to the scale of agricultural production size, 2 hectares or less, but often producing enough for sales.

CHAPTER 1: ARE WE DISCONNECTED FROM OUR FOOD CHAIN, AND DOES THIS MATTER? A REVIEW OF THE RELEVANT LITERATURE

Communities come together around food (Ballamingie and Walker, 2013) as food is at the heart of every culture (Sumner et al., 2010). Agricultural knowledge can be shared through the time spent with the food and the land in an informative experiential phenomenological interconnection (McLuhan, 1964). From producer to consumer, knowledge is transferred, forming symbiotic relationships. In nature, Fath and Killian (2007) suggest food relationships are connected with abiotic and biotic factors working together to maintain a sustainable ecosystem. From this perspective, a wolf as a tertiary consumer gives back to the ecosystem by bringing balance to the larger herbivores, while also bringing nourishment back to the soil with the deaths of their prey or even with their own.

This is connection between culture and agriculture pervades the entirety of human history, prehistory, and experience. However today many people cannot claim any knowledge of such a connection within their own food network (Clark et al., 2019). Urban dwellers (but not exclusively so) rely on the complexity of an opaque transnational food distribution systems (Friedmann and McNair, 2008; Gooch et al., 2010), and are unable to access agricultural land, visit a farm, or even tend a garden due to a variety of restrictions, largely falling under the category of biosecurity (restricting access to farms to prevent the transfer of biohazards such as disease, fungus, weeds, or pests). It is the purpose of this review to explore this basic situation by answering the questions: (a) Are their harms associated with regulatory frameworks that cause most people to have little to

no direct experience of farms and food production? (b) Have the effects of this disconnect been quantified or even identified and, if so, where?

Disconnects

Many people want local, organic, and higher quality food (Blay-Palmer and Donald, 2006), which are most commonly only available through farmgate sales, CSA, and farmers' markets or boutique food stores at higher prices than regular food products (Buttery, 2014). There is a growing demand among consumers – or a better term, people, since consumers implies a one dimensional relationship, that of consumption only – for local food (Martin and Andrée, 2012; Buttery, 2014). People actively participate in local farmers' markets, agri-tourism, u-pick operations and farm gate sales. By reversing the distribution model of bringing products to the customers in centralized locations, bringing people to the growers allows people to experience much of the reality that goes into harvesting the food. Further, urban agriculture and community-supported agriculture encourage direct connections with food production while promoting community connections.

The problem arises because these relationships of people with farmers and farming that are consistent with almost all of human history and cultures directly counters many of the current policies and bylaws that have accumulated in the pursuit of agricultural and retail economies of scale that holds hegemonic control over food production, distribution, and culture (Goodman and DuPuis, 2002). For example, in Peterborough in the 1940s small grocery stores were located in each neighbourhood and people could walk to these neighbourhood grocery stores since very few people owned

cars. Now it is impossible for most people to walk to any grocery store from any neighbourhood or subdivision built in the last 50 years.

In fact, policies and regulations lag behind consumer needs. Food consumer anxiety has increased, causing advocates, businesses and governments to seek changes for more local and/or organic foods (Blay-Palmer and Donald, 2006). One problem is that Canadian food policies are influenced by a perceived need to support large businesses and a variety of multinational corporations, such as Kellogg's, ConAgra, Campbell's, Monsanto, McCains, 3M Canada, Hershey Canada, Cadbury Adams, Clorox Canada, [and] Colgate Palmolive) (Blay-Palmer and Donald, 2006). This has resulted in a hierarchy of policies and bylaws that are effectively weighted against farmgate sales (Britten, n.d.), and discourage small-scale growers from selling their produce and meats. In spite of this, some small-scale farmers act as local food advocates disregard the red tape, effectively breaking the laws by not abiding by what are called industry regulations (Sloan, 2021). This again, highlights the disconnect between culture and agriculture inherent in the modern Canadian food supply chain, in which something as normal as buying eggs from a neighbouring farmer could de facto be illegal (Friedmann and McNair, 2008), depending on the circumstances.

There is a need to determine how people can regain a connection with their food, a reconnecting of culture and agriculture that includes the food web of community organization advocates, farmland, products sold at farmgates, agricultural services and knowledge sold, and customers.

In natural systems, resilience is the ability to resist unpredictable perturbations to the system that can occur at different scales (Peterson et al, 1998). It is known that

diverse and overlapping scales and functions are required for resilience of these ecosystems to perturbations (Peterson et al, 1998). For example insect predators can range in scale from small mites that eat fly eggs to insect eating birds that prey on adult flies. It is a reasonable assumption or premise that agricultural systems also require diverse and overlapping scales and functions to be resilient to both ecological disruptions and economic disruptions, that is, resilient agricultural systems must function at a range of scales (Sánchez et al, 2022). From this, it is reasonable to propose that small homesteading scale operations are part of a resilient agricultural sector (Woodhouse, 2010).

Complex Food Distribution Systems

Each interaction or point of distribution provides a possible risk of contamination or damage to the produce. From this, the Government of Canada (2015) mandates biosecurity measures that limit the public's ability to visit farms. However these regulation that are reasonable given the risk of disease transmission to produce and livestock, reduce opportunities for people to establish a connection with their food, the most basic being that people be allowed to visit farms (Susila et al., 2024). Consequently, people who live in cities must get their food from a largely opaque food distribution system (Appendix I).

That is, the food supply chain is far more complex than simply harvesting from a farm and then delivering that produce to a store. It includes centralizing, processing, and redistribution networks (CEO 2017). Further, throughout the stages of typical Canadian food distribution much food is wasted due to the handling processes involved (CEO 2017). Large scale grocery stores, mainly located in the periphery of urban spaces, act as

retail distribution points separating suppliers (farmers) from the customers with processing and distribution networks between farmers and customers. This has created disconnects in terms of where food comes from (Vignola et al., 2015; Kemper, 2019; Noone et al., 2017). For example, three-quarters of people surveyed from Finland, Germany, Poland, Spain, and the UK had almost no knowledge of current agricultural practices that supply their food (Clark et al., 2019).

Relationships with the Land

Spending time with nature has been proven to not only increase one's health but also restore or boost immune functions (Kemper, 2019). Agroforestry provides a rooted connection from the foundation linking water and soil to support vegetation in building the means to create an atmosphere to support biodiversity (Kemper, 2019; Vignola et al., 2015). Noone et al. (2017) recognize horticultural therapy as a means for both physical and psychological well-being as they review several studies showing people living with dementia improving their well-being, in some cases providing the added benefit of community building opportunities. Whether it is gardening or nature in general (Noone et al. 2017) it is Jung who states, 'human existence should be rooted in the Earth' as they refer to the linkage between nature and health as '...nourishing soil of the soul'. Many researchers believe that a symbiotic relationship between humans and nature is an essential way of life. Just like an ecosystem, gardening can provide a sense of place for an individual. Humans are capable of benefiting emotionally, mentally, and physically from having a first-person connection with their food source, or simply just their natural environment.

Mass Food Production in Agriculture

In North America, commercial agricultural practices often coincide with large-scale agricultural production. These agricultural practices have adopted a commercial essence to meet the demand of the increasing population, especially within urban areas where agricultural practices large enough to provide food for those living there are not possible. Large-scale commercial agricultural productions often maximize their yields by growing a single species of crop, known as monocrops. Monocrops are often located on large plots to allow the large machinery needed for more production line efficiencies required by large-scale production. This single-species method of producing food is economically efficient, but it works against the structure of a natural ecosystems, creating imbalances that require industrial methods to solve. For instance, insect pests respond to such large habitats as a food source with few of the checks to population increase provided by more diverse systems.

As a result of such monocropping, Canadian farmers must often rely on pesticides to protect crops against pathogens and pests (Oirdi et al., 2024). Chemicals used in pesticides to target pests and control weeds can create new problems for ecosystems and humans that come into contact with these chemical pesticides, either directly or on their food (Kumar and Kumar, 2019). Exposure to some pesticides can lead to “neurological abnormalities, reproductive problems, respiratory irritations, ... [and] other sublethal consequences beyond their carcinogenicity” (Oirdi et al 2024). To protect large scale operations requires strict standardized biosecurity measures that prohibit outside visitors to these farms (Canadian Food Inspection Agency, 2018). This is reasonable when one considers the prohibitive costs associated with any disease outbreak. For example, an

high pathogenicity avian influenza outbreak (HPAI) in British Columbia cost large scale poultry producers \$380 million (Pasick et al., 2009). Under these circumstances, the cost benefits of large scale production methods must be protected by biosecurity regulations (Canadian Food Inspection Agency, 2018). This raises the question: if visiting a farm is an important way for people to experience the benefits of nature, support local economies, and learn about their food, how can this experiential framework co-exist with the biosecurity needs of modern agricultural methods? The obvious answer is that it cannot, not on modern large scale farms.

Does Small-scale Farming Differ?

Each small scale farm is unique with respect to its geographic location, reflecting the resources that the land provides or lacks. doesn't, while peaking the interest of the farmer. Such farms are defined by the much smaller size of the land that is cultivated, generally less than 20 acres, and as small as 2 to 5 acres. in addition, these are commonly operated by families to support the home by providing much of the food that family uses, as well as (but sometimes not) a minor source of income from farm gate sales (Vignola et al., 2015). These small farms also commonly have both cropped production that can be described as large gardens, as well as a variety of livestock, almost always including chicken eggs. The scale of operation is determined by the farmer, who are dismissively designated as hobby farmers under provincial regulations (Ontario, 2024), with the implication that this scale of farming is more correctly seen as being in the same class as collecting model trains. Yet it is this scale that operates directly within the limits of what the geographic space can provide. When considering their resources, a farmer with limited space for growing must also consider the local wildlife to make the growing space

most effective. Practically, this creates a relationship with wildlife habitat that maximizes natural allies (Belfrage et al., 2005). For example, natural spaces provide habitat for pollinators (Donkersley et al., 2023) and predators of insect pests such as spiders and ground beetles (Sarwar, 2016). For poultry growers, this means being aware of the suite of predators in wooded areas that often surround these small farms. In contrast, the economic efficiencies of large scale operations are obtained by providing a consistent habitat for whatever product is being produced, whether this be large easy to maintain barns, both tilling and no tillage systems, tile drains, fertilizer, herbicide, and pesticide.

The Modern Homestead

What is homesteading? Historically in much of North America it referred to settlers who were required to cultivate the land to maintain ownership. Since the 1600s, settlers were incentivized to come from Europe to Canada with the promise of land at little to no cost. That is, the real cost included physically demanding labour, often in a much colder climate, on land filled with trees, sometimes on good soil, sometimes on rocky or low lying soil, and accompanied by the displacement of the Indigenous people living in these same areas (Moore, 1884; Park, 2022; Potter and Schamel, 1997). Settlers were granted land on the condition they farmed the land through homesteading, living off the resources available to them through agricultural cultivation. This was subsistence farming, typical of the time, and of historic interest (Lerman, 2004; Allen, 1930).

It was the appetite for an authentic connection to land and food production (Halfacree, 2006) in the face of an increasingly disconnected food production methods that resulted in the phenomenon of modern homesteading across Canada (Baker, 2004), as well as much of the rest of North America (Jacob, 1996). This created a rapid rise in

rural populations (Mitchell, 2004). Many of these new homesteaders were motivated by a desire to regain some level of independence and re-establish an active role in producing food (Wilbur, 2013).

The re-appearance of this type of subsistence-style agriculture of comparatively little economic value (Machum, 2015) seems counterintuitive within a sector where small farms are proportionately disappearing as farms get larger (Machum, 2015) in response to the dominant economy-of-scale paradigm (Beingessner and Fletcher, 2020).

This raises three related questions regarding the re-appearance of small scale farming/homesteading: 1. Is this small scale agriculture true farming? 2. And if it is farming, is there any benefit from this scale of operation that might provide a reason for this return? 2. Or is it just a nostalgic yearning for something that seems to be disappearing? By true farming, I mean farming that provides some benefit beyond the scale of backyard gardens. That is, true farming participates in the value-laden term "farming", as opposed to hobby farming, for which the adjective hobby strips such farms of any true farming value. That is, by my definition, operationally, true farming must be considered in agricultural policy as a beneficial part of the sector, whereas hobby farming can be dismissed as a quixotic pursuit of dilettantes.

To answer these question, in this thesis I try to determine whether such small scale modern homesteading or farming is an ecologically and culturally relevant solution to the problem of re-establishing connections, which would make this scale true farming.

CHAPTER 2: LIFE ON MY FARM, AN AUTOETHNOGRAPHY

In this section, I offer my experiences in learning about small scale farming and food preparation. This is the life of our farm, and it is the life that we share with our community and to our customers, who are part of our community. This is the small scale end of the Canadian agricultural world measure in terms of a few acres. In terms of quantity of product output, is probably unimportant at the provincial level, although I cannot find any statistics on this. However, in terms of shared experience leading to respect for food production and experiential learning across social barriers and barriers of cultural background, it is an assumption of my thesis that this is critically important! That is my purpose in writing this: to reveal the vast amount of knowledge that I bring to the community, both in my farming and writing. This is the opposite end of the large scale farms, where biosecurity measures are needed to protect the crowded rearing conditions that result in a lack of knowledge within the community, leaving people vulnerable to those misconceptions produced by the media and entertainment industry about what farming is, what food production is, and what quality of life is for farm animals, and the wildlife that lives on farms such as mine.

Mine is a real farm, not a petting zoo, nor a for-the-public farm, although members of the public are welcomed here. My farm has the real pressure of needing to make money through skill and efficiency at the scale it operates at. While some readers might think this is an outdated mode of farming, it is actually a timeless way to farm, and a critically important part of a modern scientific understanding of resilient systems, sensu Peterson et al (1998).

My commitment to small-scale farming came with no manual, no instructions, nor very much guidance to start. Beginning with a visit to our neighbour's small "hobby" farm, under an acre, my children had fallen in love with the animals across the road. Our journey in agriculture with livestock held key dates throughout the years; whereas, my journey with crops may have always been a part of me. Just as each beginning started at different times, different lessons were learned throughout each experience.

I have divided my autoethnography focusing on my agricultural experiences (Parker, 2023); however, agricultural practices are generally divided amongst crops and livestock, but I recognize other stakeholders are required to be considered. I also include a third section, my connection to the community.

Methods: criteria for choosing what details to include

I recorded my day to day experiences in a journal with an eye to the purpose of this chapter: provide insight for the reader into life on my small farm. I included those family aspects that seemed relevant to the story I was trying to reveal. It would be impossible to provide a detailed account of all that happened over the course of this investigation. My criteria for including something in this section was whether it was unique, and of sufficient importance for understanding the reality of my life on this specific small farm, and something not likely to be known to the readers any other way. For example, I did not include any account of doing laundry, making most meals, or those basic life skills that are common to everyone. Nor did I include advice on gardening or animal husbandry that could better be found in books on these subjects. However, I did try to provide details, even seemingly unimportant ones, that give the reader insight into the life on a small farm. Since this is a very personal story, the purpose being to provide a

reader in the more intimate details of small scale farming, and how this is directly tied to the ecology and geography of the land, I did not follow any specific format for this other than an honest portrayal of the storyline. I did get a verbal permission of each member of my family for this, and they entered into the project joyfully! They would probably disagree with some of this, it is my own story, it include each member of my family, but they have their own stories to tell. I will have bene successful if my reader comes away from this chapter thinking about the challenges of life on a small farm differently than they do now.

Knowing Your Land: Garden Crops and Foraging

When I first heard of homesteading as an agricultural practice, I reflected on the history of settlers colonizing the land and the terms or conditions settlers were to uphold to maintain ownership of the land. This is what I initially compared myself and my actions to in defining my agricultural practices. Thinking back to when I first moved to my current home, the house was abandoned along with the land and everything on it was all but forgotten. There was no kept lawn. The 5-foot or taller grass resembled that of a savannah if it were not for the nearby forests' seedlings taking root throughout the fields, that is. The land was savage. As an Indigenous person, it chilled me to think I had to colonize this area to allow for space to cultivate. While I felt ashamed to have to destroy the vegetation on the land, I knew we were required to clear the land to allow for any type of development of the land. I began by clearing some land to make way for a garden. I reflect on this process when I think about all the other garden beds I previously made. Although the location may have been different, the process was similar. After preparing the garden, any unprepared seedlings were removed from the beds with the exception of

any species deemed worthy of generating additional produce, like tomato seedlings. A relationship is formed by putting forth the effort mending a garden requires. Through this shared time and energy, a symbiotic relationship is formed. After planting seeds, we put care into the life that flourishes from them by ensuring that they are not only watered but also provided with enough light for their photosynthesis needs and ensuring they can grow to their full potential by weeding out the competition. Gardening produce is a way to be self-reliant, by growing your own food source. As a means to act sustainably, food waste should be composted to provide a closed-loop system. The waste won't be wasted, as the materials will be broken down into minerals that will fertilize and build the soil. I believe sustainable agricultural practices like composting and gardening are the essence of homesteading.

Gardening has been a part of me since childhood; this type of agricultural connection I have strived to maintain throughout my life, even when confounded by a small apartment. I have always tried to maintain a connection to agriculture and self-sufficiency in the skills that I have developed from my early parenthood living on my own continuing into the present, which fostered my interest in writing this thesis. A conscientious choice to adhere to a sustainable lifestyle by preparing our food supports a homestead. Actively participating in self-sustaining agricultural practices allows for self-sufficiency but requires mindfulness. A homesteader connects with sustainable agricultural food cultivation practices based on their preference and by the means at their disposal: planting in pots, raised beds, and directly in the ground; raising livestock for the purpose of a desired harvest; and foraging, hunting, and fishing. Continuing with sustainable agricultural practices, the harvests are preserved by freezing, dehydrating,

fermenting, canning/pickling, and more recently dry freezing. In my case, we do not have a root cellar, our farm being on granite. This is part of a long term plan that we have not yet gotten to.

Agricultural Connections in my Childhood

A large portion of my early childhood was spent immersed in time with the land. Before moving to the heart of Peterborough at the age of ten, I lived on the edge of what was known as Peterborough County. The house had a mid-sized orchard of various species of apples and pears. Behind the orchard of pears and apples in the backyard where I grew up was a forest, my family referred to this as the back forty. In this area, I first experienced nature at its fullest as I often travelled the trails to visit my distant neighbours. On occasion, my family also went camping. Both camping and hiking trails along the back forty had allowed me to experience the benefits of spending time with nature. However, the benefits offered through agriculture often didn't seem to blend well with nature.

Initially, the orchard drowned out most of the sunlight, which made it difficult to garden. The original garden was shaded by all the trees; thus, my father removed a few trees to enlarge the garden and position it within an area of direct sunlight. A case where the garden was overcome by nature involved with growing broccoli. Cabbage moths laid eggs on the broad leaves, which hatched, turning into small green larvae. During this case, the florets were harvested for soup, unaware of the larvae. Halfway through the meal, several members of my family found the soup moving. Reflecting on this case, I am certain that many larvae had been eaten. But no one had gotten sick.

The orchard also attracts a diversity of wildlife. Tent caterpillars would nest in the trees. Removing them and squishing the whole cocoon was the only way to rid them. If this didn't occur the orchard would have been infested with hundreds of them. While I knew there was a reason, at a young age, it both saddened and frightened me to see the squashed insides of the caterpillars.

To offset my family's food waste, my father kept growing compost heap. We used worms from the compost for fishing in the summer. In the spring, my father would till in some of the compost within the garden. Rotten apples and pears were added to the pile and often were eaten by deer. However, the deer also enjoyed eating the apple trees from our orchard, which meant we had to scare them away or shoot them. Growing up I learned by observing my father as I helped in the garden and orchard. Farming is demanding and requires sacrifice. But, I wondered, is this the only way?

2007- 2018: Agricultural Connections in Adulthood

My childhood home was a place that allowed me to connect with both farming and the natural world around me. As I entered my youth, my family moved into Peterborough Ontario, a short walk to the downtown. During this time all gardening stopped. After I set out on my own it took years for me to find both the space and time that allowed me to return to growing my own food. As a young mother, I made homemade jams, and kept a small garden in a window box and on the porch. After the birth of my 3rd child, I rented a place with a small plot of land. My growing family helped me build some raised garden beds – a true spark for agriculture.

I also joined community groups that enabled me to find friends with similar interests. While most were dedicated to supporting the parents of young children, there

were a few that provided the means for agricultural connections. The Health Unit supported a program called Peterborough Gleaning, which helped people visit local farms to harvest produce donated by those farmers. The Health Unit also funded a program that taught people how to preserve food using water bath canning and pressure canning. My agricultural experiences were enriched by visiting these local farms to harvest produce near the end of the growing season. This helped me offset the costs of buying food. While this program grew, the number of volunteers that arranged these trips did not, so I took a turn at being a volunteer. We travelled by bus across a variety of landscapes to different farms. Each location was unique, a combination of the farmer's ability, interests, and economic resources, and the land itself. Some farms were very organized on flat land with a mowed lawn, others in more undulating land worked around what nature provided. While a few farms were mono-cropping, especially on the level landscapes, most were mixed farms of various crops and livestock. These mixed farms also seemed to have more wildlife. No matter how big or small the farms that I visited were, being able to harvest from them provided me with connections to the soil and the food it brings forth.

2019- present: Establishing my Homestead

The knowledge that comes from a direct experience of the land takes time to acquire. The farming and gardening I learned during my childhood have stayed with me. Now, although I live less than 100 km from Peterborough, my small farm differs from the land I once called home. My first discovery was that the soil is filled with water due to being in a low swampy area. We are also now on the granite of the Canadian Shield, not the limestone and glacial till of the Peterborough region. This means that there rocks, lost

of them, and large irregular shaped rocks, and rock outcrops that define and outline where the soil is, a soil very different from what I grew up with.

My farm is just over 40 acres. This land is not suitable for monocropping. The soil has little organic matter in it, making it difficult to know what will grow here. Many of the Ontario garden vegetable either cannot grow on my land, or cannot grow to maturity without me started them indoors while there is still snow on the ground. When I am not struggling against the short growing season I am dealing with wildlife that helps itself to my garden produce. Knowledge of this land has come with time.

The previous owners were also farmers, one of which had raised horses. This venture ended because beavers dammed the river and flooded the fields. The fine granulated sand in the soil turned the now flooded field into a sinking pit that broke the horses leg, and ultimately became that horse's grave. Now several decades later passed, the forest has overtaken this flooded field that is known as the horses' field. Many of the trees in this forest that tried growing in this flooded landscape now only exist as dead trunks rising above the ground.

Cultivating the Land

The first year we were solely focused on survival. In the years following we were gradually able to grow more food, as well as rebuild many of the rotting timbers of our home. In mid-autumn we prepare for winter by stacking firewood. Just before the first snowfall our tasks double as we need to set store food as well as ready the garden for spring. Our stack of renovation wood ended up becoming a large bug hotel (Figure 1).



Figure 1. (Left) brown bat resting on the log of the bug hotel. (Bottom right) full view of bug hotel with my son and our dog. (Top right) bumble bee visiting the bug hotel.

Our first winter we were cold, the holes and cracks throughout the house made themselves known to us as the outside was covered underneath a blanket of the thick winter snow. Our newly acquired woodstove warmed the house on cold winter nights-even when the power goes out. Due to the cold, our primary goal throughout that first winter was just to stay warm, and this is still our main goal in winter. We cut and split and stack wood and kindling. We quickly learned the difference between wet wood less than a year old, and seasoned dry wood that has been stored for more than a year, as these determine how warm and how long the fire burns.

In the spring of 2020, once most of the snow had melted, we prepared the ground for our future garden, which included a bean teepee for beans and tomatoes (Figure 2).



Figure 2. Bean teepee with climbing beans and tomatoes growing around the structure.

We also purchased a rototiller. After first tilling the garden area, we found broken glass, rusty nails, and rocks. We soon discovered where the best places for our gardens were as we tried to repurpose the fields for a crops. I learned much about the different soils around my home. The soil closest to my house was light sandy brown, good proper growing soil; the soil down further away in the field where the grass resembled straw was nearly black. Once the grass was removed, this soil turned to mud as there was nothing keeping the water in check. My children found comfort playing for hours in the mud (Figure 3).



Figure 3. Two of my sons ‘gardening’ in the mud.

From the story of the dead horse I worried that the mud might pull my children down. We made a rule for them that stated nobody could enter the mud pit area alone. We built a fence to try and stop deer and others from sampling our produce. After the harvest, this fence became a kind of trap that we used to catch the rabbits that ranged over this area, descendants of domestic rabbits from previous farmers. In 2021 we tried to raise these rabbits in the fenced area. The rabbits dug holes to escape. We then made two new cages, one for the males and the other for the females (see the section on livestock). The fenced-in area became our pig area.

We learned that the best place to grow food was closest to the house, which is where our garden is now. In the spring of 2023, I embarked on my journey in graduate school. While my garden was now in the fenced in area behind our house. I sowed seeds indoors, but soon ran out of space as they grew. A few warm days tempted me to set these seedlings outside. This did not work, they were killed by the frost that came in the night. Starting over, I developed a system for planting over the summer (Figure 4).

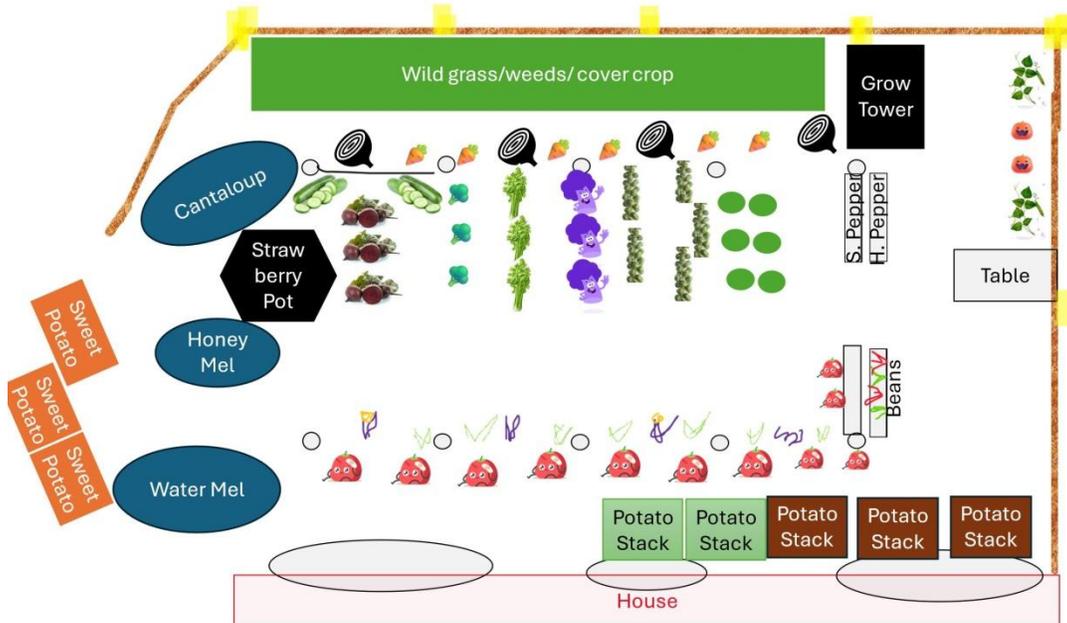


Figure 4: Garden in mid-summer of 2023 (top) and layout of 2023 garden (bottom).

I added a carport frame with chicken wire fencing that allowed plants to grow in this shelter (Figure 4). I experimented throughout the summer on space saving strategies, using milk crates to grow potatoes. This was only mildly successful as there was little space for them to expand. My eldest son and I had tried grafting tomatoes onto the potatoes, testing techniques in reverse. To our great surprise, our best results showed success on the easier to graft sample, the potato top and tomato bottom. No fruit had grown from the plant, but it has shown possible to forage the two nightshade species together. This is still a work in progress.

After the birth of my 6th child, I divided my time with my newborn and the garden. When my daughter would sleep, I would sneak off to the garden to water or weed the beds. Thankfully, there weren't many weeds. I placed cardboard and empty feedbags down over the walking paths that killed most of them. By mid-summer of 2023, we added a watering system hanging from the top of the carport. ironically, this summer was very wet and cool and there was no need for the watering system. In the end, this abundance of rain caused my tomatoes to die of blight. I harvested them green to make salsa. Part of farming is "making lemonade out of lemons", even the worst situations provide opportunities to learn. Any rotten tomatoes were fed to the livestock.

In 2024 we were able to harvest much of our produce until my family became sick for a week. During this time we had an early frost, killing any vegetables that we still needed to bring in. For the 2025 growing season I prepared my plants in March. I did this without a plan because of the uncertainty of the weather. In spring, I built a grow tent under the carport. I focused on species that required additional warming conditions like peppers and tomatoes.

In 2024 I learned that not all ‘weeds’ are bad and many can be used as a cover crop increasing vegetable yields. I have used insecticide soaps to discourage insects from eating my plants, and I have tried pruning and hand-picking insects off my plants to feed to my chickens. Both are time-consuming, and the latter is my preferred method. We have limited our harvests to primarily supporting our household except for extra eggs, vegetables, honey, or chicken meat that we give to our extended family and friends. Our current methods are not financially profitable except as savings, offsetting the cost of buying food but this is not our primary reason for this homestead. I believe that the love we put into the work would not be the same if we scaled up, just more stressful.

Our gardens feed us and also our honeybees and wild pollinators when the flowers bloom. We compost and give extra produce to my livestock. I treat my livestock with this as a substitute for their feed. In this way no food is wasted.

Foraging

Many of the plants, trees, and fungi that grow around us are edible. Knowledge is powerful when foraging for wild food. Beside the edible vegetables, there are several poisonous plants that mimic these. One wrong bite could be your last, a terrifying thought that has resulted in lost knowledge of edible species. Even species considered poisonous can often be used as medicine. As an Indigenous woman reconnecting with my culture, I have learned Indigenous women once knew over 300 species of plants and trees by name with an in-depth understanding of their medicinal benefits (Taylor, A., personal communication, 2022). Remedies to colds, injuries, and other ailments can be found and even cured many of these species. One example is that willow bark can be used for pain relief, and is the main ingredient in aspirin.

The more time I have spent on the land, the more I learn about my surroundings and realize there is a vast number of species I don't know. For example, our forests were full of birch-covered fungi. We initially thought that they were the chaga, a fungus that can be used to make a coffee substitute, but I have since learned that they are hoof mushrooms. Disappointed by yet another misidentified species, I stopped foraging ad hoc, and decided to study these diverse species. Even these hoof mushrooms are useful, they can be used to smoke bees, and are less harmful to bees than wood smoke.

Each year I learn more. Information between the pages of the book comes alive after I see these species in the wild, becoming knowledge that is part of me. This is tricky, mimics abound, so mistakes can be made. Mushrooms are especially dangerous as edible species have the same appearance as poisonous species, with only the gills under the umbrella providing clues. While I have become confident in my identifying skills, it still feels like a leap of faith to consume anything grown in the wild. When I lived in Peterborough I ate dandelions and plantains, and wild blackberries that grew wild along the old train tracks. These are also species I rely on here up north. Brambles thrive in the area as the rocky soil provides great drainage for strong roots. Many apple trees also grow throughout this part of Haliburton County.

The land around my home is quite low and wet. The beavers downstream dam the small streams that run into the river changing how deep the water is in the lower areas. Often cattails grow on ground that was once used to grow grain. We eat cattail cobs, and other parts of this plant. The short, green tips of cattail grass shoot up in early spring, and are like asparagus. The leaves of cattails can be used for weaving into baskets. The flower of the cattail is wrapped in leaves which when peeled back reveal a green cylinder.

This is the part that we eat, boiled in water and cooked like corn until tender. The stage is hard to find and brief, and I often missed this time of year to harvest cattail corn.

The pollen of the cattail is also edible and packed with nutrients, and can be used as a flour. However, pollinators are also present and the pollen is damp. We gather the pollen in paper bags and dry the pollen. In summer, the slimy substance that resembles aloe clusters between cattail leaves at the base of the plant near the root can be harvested to heal sunburns, cuts, and insect bites. When cold weather comes, the cattails turn into fluff which is perfect for starting fires when dry.

In 2024 I learned more about foraging flowers. I learned that violets are edible, as are the orange Day Lilies. I use violets to create syrup, adding lemon to the deep blue-violet petals that I steep for 24 hours. I then added plenty of sugar and reduce this liquid to the desired consistency (Figure 5). Other species of edible flowers can be harvested and turned into syrups, candies, or added to other preserving agents to extract the medicinal benefits from the plant (Figure 6).

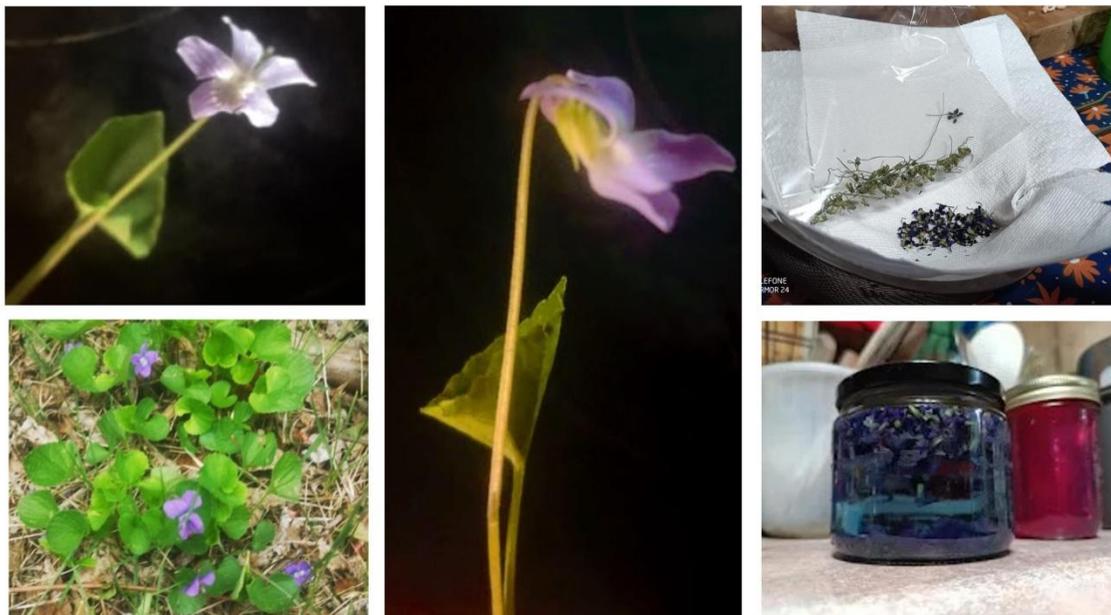


Figure 5. Violet cluster before harvest (bottom left). Violet identification profile: before harvesting (bottom left), frontal view (center). Separating bitters and seeds from petals (top right). Comparison of violet tea against final product, violet syrup (bottom right).



Figure 6. Dandelion with copper bubble bee pollenating (left). Dandelion syrup, light yellow jar, comparing honey and honey infused dandelion (top right). My son that helped with the processing of the dandelion (bottom right).

Pineapple Weed, *Matricaria discoidea*, is edible and best as a tea, it is a kind of Chamomile, and has a calming effect that acts as a mild sedative. I often find Pineapple Weed in the cracks of sidewalks, on gravel-filled driveways, and by the edges of pavement. I also learned by tasting that the flowers of the orange Day Lily, *Hemerocallis fulva*, are edible. This can be cooked or eaten raw. I sauté the flower buds in butter and garlic. They have a nutty flavour. Lambs Quarters, *Chenopodium album*, is a weed that I often find in my garden, and is edible, similar to spinach. Lambs Quarters contains oxalic acid and can cause stomach troubles if eaten in large amounts raw. A book stated that Lambs Quarters improves the soil by its ability to accumulate minerals. I changed my gardening method to put this theory to the test. I left many of the weeds around my vegetables in my garden, only removing some to prevent crowding. In fall the weeds were the size of my intended crop. My plants were also ready for harvest and large. This was my most relaxed year of gardening.

Raising Livestock

After we purchased our home in 2019, we began our journey of raising livestock with egg-laying chicks in the spring of 2020. By fall we hand-caught and overwintered rabbits. The following year, we got pigs, and add turkeys and more chickens to our farm. We fell in love with poultry. My children wanted ducklings which we added in spring. By 2023, I was pregnant again, but I was determined to have my husband's dreams fulfilled by acquiring some honeybees. Our growing family has never had the luxury of the new machinery capable of commercial crop production or harvesting. We have been resourceful with what is at our disposal, ourselves and our time.

Chickens

After visits to my neighbour's farm where they were chickens, my children pleaded with us to have their own chickens. We built a coop reusing material from our renovation. We spoke with our neighbours for recommendations about what breeds to get, and then my five boys picked their own chicks which we bought from my neighbour, five Black Banties. My children cared for the chicks, feeding and watering them (Figure 7).



Figure 7. My son holding a chick (left). My other son with a chick on his shoulder (center). My son with a chicken on his head, while my other son laughed (right).

It took a long time for these chickens to mature enough to lay eggs, but once they started we found out that they were not producing enough for my family, with two of the five being males. In spring of 2020 we purchased a variety of day-old chicks, egg layers – Red Sexlink, Rhode Island Red, Barred Rock, and Blue Azure – and multi-purpose Orpingtons. By the spring of 2021 we had acquired an incubator and began hatching our own. We discovered that a chick was never fully counted until it was fully hatched from the egg, some died in the process. Our exact numbers have increased slightly each year.



Figure 8. A fresh chicken egg that is green with a blue strip (top image). A carton of various colours of eggs freshly washed, with a striped egg on the bottom left (bottom image).

One curious result of was that we produced a hen that laid green eggs with a blue stripe (Figure 8). In a desire to recreate this we became more structured in matching our hens and roosters. We learned that some hens laid different coloured eggs after mating with a different breeds of roosters. We found that a Blue Azure and a Black Orpington are the best way to get these striped eggs but our results are not consistent.

By the third year raising chickens we had so many eggs that we were giving them away. So, we decided to sell our eggs at our farmgate. These have become our number one product sold, and often the only thing we sell. Each year is different, sometimes we have lots of eggs to sell, sometimes, such as 2023, our production wanes. Why this is so is still unknown by me. We cull (kill for the freezer or soup pan) extra roosters. We also purchased 10 quick growing meat birds in 2023 and process them 6 months later. We plan on experimenting with our other breeds of chicken to determine which is best for our household and our husbandry methods, preferably a longer living breed.

Predators that dip into our flock abound. We have seen ermines (weasels) however our cats appear to protect the chickens. Foxes, raccoons, and skunks are also present and so we keep our chickens in the enclosure at night. This has so far kept them safe from foxes, raccoons, and skunks.

I have noticed a symbiotic relationship between the wild birds and the chickens who roam freely during the day. Birds such as Blue Jays, Chickadees, and Grackles, feed at the bird feeder and often share a few seeds with the chickens (Table 1). Skunks eat any eggs that my chickens lay outside of their coop. Raccoons try to get anything they can and dig or pulling at the chicken runs and coop. We have learned the hard way that free range does not include night. In fact, it is important that chickens cannot even stick

their heads out of their cages at night. A raccoon killed my first laying hen who had hatched her own chicks, and killed all the chicks as well. This was a great loss, since chickens have been bred by the chicken industry so long that they rarely become broody, a trait that has been bred out of them. Fortunately, in 2024, another of our hens became broody and hatched her own eggs. Death may seem grim, yet there are lessons learned through such losses. We no longer look indoors at televisions screens, for that is when predators can come freely, we spend our time outside and our eyes are on our surroundings.

Table 1. List of species or groups identified on my land (listed using recognized common names and our own common names that we use at our farm). This is a personal record and no attempt has been made to get to species level except where this is easy, such as monarch butterflies.

Butterflies and moths	Other invertebrates	Birds
Cabbage Butterfly	Centipedes	Alder Flycatcher
Clouded Sulphur	Earthworm	American Robin
Common Plume Moth	Jumping Spider	American Black Duck
Cutworm	Leeches	American Crow
Eastern Tent Caterpillar	Millipedes	American Goldfinch
Garden Tiger Moth	Orbweavers	American Wigeon
Monarch	Pseudoscorpions	Bald Eagle
Tiger Swallowtail	Slugs	Barn Swallow
Underwing Moth	Snails	Barred Owl
White Admiral	Sowbugs	Black-Capped Chickadee
Wollybear Caterpillars	Ticks	Black-Chinned Hummingbird
Dragonflies and damselflies	Wolf Spider	Blue Jay
Amazonian Amberwing Dragonfly	Mammals	Blue-Winged Warbler
Apache Spiketail Dragonfly	Beaver	Boreal Owl
Asian ladybug	Black Squirrel	Broad-Winged Hawk
Bald Faced Hornet	Brown Bat	Bufflehead
Band-Winged Meadowhawk	Chipmunk	Cackling Goose
Bluets	Deer Mouse	Canadian Goose
Bumble bees	House Mouse	Carolina Chickadee
Calico Pennant?	Jack-Rabbit	Carolina Wren
Carpenter Ant	Mole	Chipping Sparrow
Colorado Potato Beetle	Moose	Cliff Swallow
Common Whitetail	Muskrat	Common Goldeneye
Cottony Psyllid (On Trembling Aspen)	Northern Short-Tailed Shrew	Common Grackle
Crane Fly	Rabbit (feral domestic)	Common Raven
Dance fly	Red Fox	Downy Woodpecker
Earwig	Red Squirrel	Eastern Phoebe
Firefly	River Otter	Eastern Screech-Owl
Fleas	Weasel	European Starling
Flesh fly	White-Footed Mouse,	Golden-Crowned Kinglet
Grasshoppers	White-Tailed Deer	Gray Jay
Harvest Ant	Fish	Gray Partridge
Honey Bee (Cariolan)	Bluegill	Great Blue Heron
Horse Fly	Minnows	Great Horned Owl

Hover fly	Smallmouth Bass	Hairy Woodpecker
June Beetles	Reptiles And Amphibians	Herring Gull
Mayfly	American Toad	House Finch
Mosaic Darners	Blandings Turtle	House Sparrow
Mosquitoes	Garter Snake	Mallard
Mydas Fly	Green Snake	Merlin
Other insects	Leopard Frog	Morning Dove
Pavement Ant	Milksnake	Mute Swam
Petaltail Dragonfly	Painted Turtle	Northern Bobwhite
Phantom Crane Fly	Snapping Turtle	Northern Cardinal
Planthopper	Spotted Salamander	Northern Goshawk
Raspberry Sawfly		Northern Hawk Owl
Soldier Fly		Northern Saw-Whet Owl
Solitary Bee		Peregrine Falcon
Spreadwings		Pileated Woodpecker
Sulphur-Tipped Clubtail Dragonfly		Purple Finch
Tachinid Fly		Red-Bellied Woodpecker
Thule Bluets		Red-Breasted Nuthatch
Tropical Rockmaster Damselfly		Redhead
Two-Lined Spittlebug		Red-Headed Woodpecker
Wandering Glider		Red-Tailed Hawk
Water Strider		Red-Winged Blackbird
Whirligig Beetle		Rock Pigeon
White-Spotted Sawyer		Rose-Breasted Grosbeak
Wood Ant		Rough-Legged Hawk
Yellow Jacket		Ruby-Throated Hummingbird
		Ruffed Grouse
		Rusty Blackbird
		Scarlet Tanager
		Sharp-Shinned Hawk
		Spruce Grouse
		Tree Swallow
		Turkey Vulture
		White-Breasted Nuthatch
		Wild Turkey
		Willow Flycatcher
		Winter Wren
		Wood Duck
		Yellow-Bellied Sapsucker
		Yellow-Rump Warbler Or Pin Warbler

Rabbits

We quickly found out that our farm had rabbits which were descended from mixed crosses of Chinchilla Argentinians and Lion's Mane varieties that had escaped our neighbour's enclosures. We caught two rabbits in November of 2020 and kept these in our unfinished basement. Throughout that winter the female rabbit produced litters. This mother pulled out her fur from under her belly and to provide her young with bedding. To discourage the mother from eating her young (which they commonly do) any time she gave birth, I would provide the new mother with fresh produce, either fruits or vegetables, as a treat to keep her calm. The father was separated from the female after the birth of the first litter of 8, but a little over a month later, the mother rabbit had a second litter of 11. We moved this mother with her babies upstairs the same day they were born to a dog crate upstairs. We learned a lot about raising rabbits the hard way, and from the two initial rabbits we produced an additional 22 rabbits.

Covered in fur, it took a lot of patience, practice, and uncomfortable examinations for me to be able to determine the rabbits' sex. In spring we transferred the females outside into the penned-in area that had been the garden the previous year. By early winter, it became clear that I had at least one male within the female enclosures. I tried to sex them again. Identifying the males on a cold day proved more difficult as it was hard to expose their genitals. By the time winter came in 2022 the females began having litters again. A new male had come to greet our females, and we caught him in a live trap. Over a span of 3 months each of my females had delivering a litter. When I tried to separate the mothers with their young to protect the young, the mother would become stressed and

abandon her young. I tried to foster the neglected young, but it proved to be a fruitless endeavour.

The opportunity to raise rabbits came with me having made no preparation which resulted in a lot of hands-on learning and failing. Rabbits are highly sensitive, and they can also get so excited their heart stops. During mating season males became aggressive towards one another, while many females had false pregnancies. In the spring of 2023, this became most evident as there were no problems with pregnancies. We ultimately moved the rabbits to individual metal cages. Although I was conflicted with this method of rearing them, I did not know how else to ensure their safety.

We have stopped breeding rabbits and many have escaped including the original father. My several years of experience with rabbits breeding taught me that mixing males and females isn't possible in my view. I know some rabbit raisers allow their rabbits to mingle together openly in barns with breeding boxes, however, this does not work for me. My eldest son has started tanning hides. Using rabbit meat and skins as separate products could be a possibility for future endeavours, but we need to be prepared. I learned that free livestock when I am not prepared are not free.

Pigs

My neighbour's pig would walk over to our place and a few times the mother pig brought her fresh litter of pigs with her. I became infatuated with the idea of breeding mini-pigs to sell. In 2021 I purchased one of my neighbour's miniature Vietnamese potbelly piglets. We picked out a little castrated boy who we later named Henry. Henry was housed in the area that had held the rabbits. We connected made a hole in this so that Henry could get into the garage access to find shelter from the weather at night.

I learned little pigs will scream whenever their feet are off the ground. As a mom to 5 boys, this crying didn't bother me but it did bother my boys. Upon hearing Henry's screams, they would quickly release him. I trained Henry so that I could harness him and go for short walks to the mailbox. I noticed he appeared to be lonely in the pen so I found 2 free black miniature pigs, male and a female, about a year and a half old. Everyone got along, the female was motherly towards Henry. In autumn of 2021 our female pig was promoted into motherhood early in the new year, Mama-Pig. She had two piglets, a pink male with brown spots and a nearly entirely black female. These piglets grew quickly. Mama-Pig became a mother again, and this time there were 2 spotted males, 2 spotted females and 2 nearly fully black females. I sold the males as soon as they were 6 months old.

By the winter of 2023/24 the larger females were greedy and did not allow the smaller females to eat. Two died. We have always seen these pigs as a source of food, however we also treated them as pets. These two pigs' deaths came with a double loss, as they were too small to eat. I have learned there is a limited time for all life forms. It is best to set your intentions for the animals you acquire beforehand and follow this plan.

Turkeys

In the spring of 2021, I bought eleven white turkeys for \$40. Within two weeks three had died, the smallest was trampled the first night, one tripped and fell into the open water dish, splashing another one that got wet and later died. The turkeys grew too large to keep in the coop we had, so we moved them into a carport. I had read that it was not safe to put chickens with turkeys, due to turkeys being at risk of Blackhead disease (*histomoniasis*), so I moved the turkeys in with the pigs. Both species got along together.

The turkeys would jump up on the animal shelter and the pigs would lie lazily underneath out of the heat of the summer sun. On occasion the pigs would move the small shelters tumbling them, and two turkeys died during one of these events. Down to five turkeys I need a new place for them, and moved them into my fenced garden. The turkeys loved it there, and ate everything except the potatoes.

I had my first experience with a biosecurity threat, a tick was on one of the turkey's necks. The others swarmed her to consume the tick and she got injured in the process. I isolated her, and fed her red clover, plantain, and dandelion, as well as household scraps like strawberry tops. Due to her injured leg she was picked on by the other turkeys, so we allowed her to walk freely outside the enclosure until she was healed completely, to then join the rest of the flock.

The male turkeys began to be aggressive, mounting one another to establish dominance. We harvested two of these males, leaving only one male and two females. In the spring of 2022 the females started to lay eggs, but we were unable to get chicks from these. One turkey was killed by a raccoon, two died that winter. While I faced adversity in my journey raising turkeys, when I have new outbuildings for them I will try again, they taste good.

Ducks

In 2021 we purchased two Rowen and two Indian Runner ducks, and three Pekin ducks joined the herd the following year.

In 2023 we started to get duck eggs. We tried to hatch these with varying success. Young ducklings still have their fluffy, downy feathers, and they need to be monitored as their fluffy feathers don't allow them to float as well as adults, and two ducklings

drowned. We used duck eggs for baked goods for household use. With double-sized yokes, these eggs are the best for making custards.

Bees

In my first year of graduate school I attended an introductory apiary course before obtaining two hives mid-summer. In spite of the benefits of this course, I have found that hands-on learning is a better method of learning, especially regarding livestock. I have been successful, and have been able to split one hive. My course taught me that I should purchase a new queen; however, I chose to support the hive by feeding them a one-to-one water-sugar solution instead. A couple of weeks later my home was flooded with a vibration of swarming honeybees. A cluster of bees split and my effort was successful. Before the week had ended, the second hive split as well. This time I was more prepared, and I was lucky enough to catch them. I first found the queen, then offered them a box to live in as an alternative location as a shelter from rain. A few weeks later, the same hive swarmed again. Unfortunately, I was not able to catch that hive. We checked the hive for queen cells, and killed these to prevent further swarming. I performed another split of the hive that swarmed a second time in the hive I had not split. With this second queen I placed a queen excluder (a metal frame that allows workers to pass but not the larger queens) on the top of the hive of my first split. By the end of these adventures I found myself to be with five hives.

I have learned that the bees' personalities reflect that of their queen. The first hive to swarm was a quick tempered hive. Once the hive obtained a new queen, the rest seemed to settle and became more docile. All my bees are Carniolan bees, yet each hive has its own personality. So far I have harvested honey from one hive only.

Fishing

Throughout my childhood I went fishing yet I have never really had a taste for fish. Fishing is part of the Indigenous culture. There is ceremony in preparing the fish, cleaning the scales, removing the head, and the inner organs; washing the fillets and preparing them for cooking, producing a meal shared with loved ones. Fishing has been a generational tradition. My father passed this tradition down to me, and I have in turn passed them on to my children. My children now go fishing by the river's edge at the edge of our property.

Hunting

While a few people may hunt for sport, hunt is more correctly understood as harvesting. Precolonial, Indigenous communities hunted to harvest meat to feed the entire community. While hunting is still practiced today, regulations have been put in place which ostensibly exist to mitigate the risk to the hunted populations. As a woman and creator bringer of life (a mother), I was always taught that it goes against creating to destroy another life, and so I have not had an opportunity to go hunting. As a child I visited my Grampa's hunting shack which was festooned with many deer heads. Running a farm, I see the benefits of harvesting animals that are harming the crops or livestock. In any ecosystem, death is a part of restoring the balance of species populations.

Over the years of raising livestock, our journey has taught us hunting can be both a proactive and reactive response to ensure your livestock preyed upon by predators before you get the chance to harvest your own livestock. We have endured continuous raccoon attacks, staking our hens, and damaging our infrastructure. We have tried live traps to catch and release the raccoon at the other end of the property 40 acres away, bu

they come back, and our misguided kindness has worn out. Now my eldest son has learned how to tan raccoon hides. We acknowledge that life has meaning and do not take any life in vain, however we need to maintain a balance within our farm if we hope to persist. My son also tans rabbit pelts and we eat the rabbits that he catches.

In fresh snow or mud (Figure 9), we often see animal footprints, and have learned where the game trails are on our land. My sons have used these trails to help them on their hunts.



Figure 9. Tracks of a beaver (left). Tracks of a moose (right).

Trail Cameras

To determine if our homestead affected the wildlife around us we installed trail cameras during the summer of 2024. These were placed close to the farming operation, and we also used these to watch for chicken predators. We had raccoons and skunks around at night. The chickens do not travel too far into the woods, and placing cameras just beyond the area where the chickens forage was the best place to see wildlife. We spotted an opossum, raccoons, skunks, coyotes, and field mice. During the day in the same location, we saw several chipmunks, red squirrels, a few blue jays, sugar glider, and one black squirrel. On the edge of the road just past my mailbox, we have spotted coyotes, deer, and foxes. Further down the road we spotted at least 3 different deer.

Community Connection

My community connections increased as each year passed since moving to the country. In the first few years my neighbours often stopped by to inquire us as the people who bought the house. After starting my eggs sales in the 3rd year I gained more connections with neighbours including seasonal cottagers. When I began my thesis, I discovered the Kinmount Library where I met other community members. I established a network of agricultural connections which inspired the formation of monthly meetings through the library to discuss agricultural and gardening problems that we faced in common. I have also made friends at the local animal feed shop which introduced me to a group called Haliburton Homesteaders. The Haliburton Homesteaders arranges speakers from the community to speak about their own agricultural experiences. This network of community connections has inspired me to experiment with different agricultural

practices, and I owe a debt of gratitude to all the people who have worked with me on my research and farm.

AUTOETHNOGRAPHY CONCLUSION

In this section, I summarize what I want to reader to take away from my story in terms of my thesis.

This personal study was written to reveal the realities of small scale farming, from the perspective of someone like me, who is trying to re-enter the agricultural sector. Much of this might seem old fashioned, the methods used as more timeless than modern farming at medium and large scales. These other scales of operations have their own challenges, and it is for those involved to tell their story. My story reveals the geographic connection in every part. It is this geographic connection, or connection to the land and the surrounding community that informs my farming. At my scale of operations, my customers can experience this reality, see my chickens, and hold one if they want to. In contrast, larger operations have more to lose in terms of capital investment and number of livestock, making biosecurity a major part of their operation, keeping the public, wildlife, and other livestock away from their livestock (see <https://www.ontario.ca/page/biosecurity-fundamentals-visitors-livestock-facilities>).

However, while larger farms have more to lose in terms of capital and livestock numbers, I have more to lose in terms of my livelihood, which is vulnerable o a regulatory framework that dismisses my scale of operations as unimportant. For example, the Ontario Government specifically excludes the scale of hobby farm from its support network: "the farm is not a hobby farm and the applicant depends on the farm business for their livelihood and must show that at least 15% of their net income is derived from

the business" (<https://www.ontario.ca/document/guidelines-apply-disaster-recovery-assistance-ontarians-drao/6-information-small-owner-operated-farms>). Yet, this scale is part of the suite of scales needed for resilience according to the Petersen et al. (1998) model of resilience in natural systems, which depends on overlapping scales and functions. In this way, small scale farming is not a throwback but is modern in ecological farming terms, one of the scales that modern farming needs to include.

Farming at our farm has been rewarding in many ways, including knowing that we produce much of our own food, and provide food for others, and advice as well. In our view, the hard work is rewarded, nothing else tastes better than a home prepared meal with the spice of the pride and love of having grown most, if not all the ingredients. In this way I pass along these skill to our my children as they help, knowing that they too were part of making this food.

No amount of research and preparation could have prepared me for the hands-on learning that my family and I have experienced. Reading about livestock births never prepared me enough for any of the litters that were born on our farm. This hand on learning is also what I offer my neighbours, friends fellow farmers, and customers who visit my farm.

CHAPTER 3: ATTITUDES OF PRODUCERS AND CUSTOMERS OF SMALL-SCALE FARMS

Food literacy is an overarching term for how well people understand food production, what real farms are actually like, and what the economic and sustainable challenges producers face (Cullen et al., 2015). Such knowledge originates from a variety of experiences, including first-hand experience with farmers and farming, gardening, and raising livestock, or even being around livestock. As important as food literacy is, the opportunities for such experiential learning are becoming increasingly scarce as these opportunities are regulated into oblivion by biosecurity protocols (Ammirato et al., 2020). People who want to experience farming firsthand are almost entirely limited to visiting tourist farms (Petroman et al. 2016), petting zoos, or pick-your-own fruit and vegetable farms, and small scale farmers as discouraged from allowing visitors to their farms (Brochu et al. 2021). While important and worthwhile, these experiences can create unrealistic impressions of farming realities, including the hardships that producers face.

For my study, my working paradigm or framework is that small-scale, homesteading type farms are some of the very few places where members of the public can access real agricultural farms and have experiences under real farming conditions. If this is the case, I wanted to know if such experiences are valued, and if people (the public, that is farm gate sale customers) who have such experiences are motivated by considerations outside of a simple transactional fee-for-service experience. That is, do people who come to small farms value and learn about biodiversity, economic diversity,

and food quality and security? Related to this, I wanted to know what people think are the main impediments to achieving sustainability in small production farms.

In this chapter, I report on my study of perceived impediments to small-scale or homestead-scale farming, first as revealed by interviews with customers who purchased eggs from my own farm to find out what they value in this experience; second, by interviews with small-scale producers from the Haliburton and Kinmount areas; and third and finally, I participated and reviewed the monthly questionnaires from the community garden group at Kinmount Library to gain a better perspective of the additional impediments landscape accosts when farming under the Canadian Shield.

MATERIALS AND METHODS

Rationale for Part 1- Farmgate Customers

Ontario's Ministry of Agriculture (Ontario, 2021) report over 200 foods and ingredients are merchandised from Ontario's 49,600 farms. While food is considered a basic need, our food system does not resemble any ecosystem of the wild with direct food connections (Vignola et al., 2015). In contrast, Ontario's food system presently operates under the constraints of a subsidized business model that favours large-scale farmer and food distribution networks over small farms and small businesses (Peterson et al., 1998) This food distribution system negatively affects our ecosystems, with the ecological benefits of small scale not included in the metrics (Vignola et al., 2015). While I know many farms, such as my own, sell at farm gates, I wanted to know what drives these sales from the standpoint of my customers; do my customers experience positive relationships with food production? From this, my goal is to use these results to find out if customers

visiting small farms add to their understanding of food in literacy (Cullen et al., 2015) and the importance of the diversity of farm scales through literacy (Peterson et al., 1998).

Rationale for Part 2- Homesteader Interviews

Modern homesteaders either possess or are determined to learn those skills needed to achieve some level of self-sufficiency. These skills are disappearing from the larger society, and include husbandry of heritage breeds of livestock and produce, alternate farming methods that are simultaneously traditional and cutting edge (Slámová et al., 2021). For example, while farming with horses is old-fashioned, leading to the point of archaic (Conway et al., 2022), recent evidence exists that farming with horses does far less damage to sensitive ecosystems (Campbell, 2009), and practice is encouraged in certain systems (Peterson, 1998).

I wanted to know how homesteaders and small producers experience challenges in this farming sector, and what the main impediments to their success are. To answer these questions, I interviewed 17 small producers to learn more about their experience with agriculture and community connections.

Rational for Part 3- Community Organization Connections: Kinmount Library

Gardeners' Group

Actively connecting with nature through horticultural practices, like gardening, (Noone et al., 2017) has been shown to improve a broad spectrum of medical conditions (Noone et al., 2017; Harris and Trauth, 2020); in correspondence, studies have shown physiological and psychological benefits to horticultural therapy both obtaining a connection with nature independently and socially in groups (Smith & Parpia, 2014 as cited in Noone et al., 2017; Zutter and Stoltz, 2023). In addition to positively influencing

one's overall health, these small-scale gardens are capable of providing space for biodiversity to take place (Raymond et al., 2018).

The Kinmount Library Gardening Group has provided a place for all levels of gardeners to come together, discuss, and share insights about their passion for gardening. Although the group initially started in March 2023, the growing season for Haliburton doesn't begin until early to mid-June. The month prior, many gardeners grew seedlings inside to maximize the growing time. I intend to collect this data to learn if gathering with community members over the shared interest in gardening can support creative development. I want to know if gardeners of the same community were to come together to share their problems and solutions, if there would be a change in the learning curve to the gardeners in the area. I am determined to learn what actions and effects these small-scale growers have on the biodiversity of the ecosystems in the Haliburton/Kinmount area.

Farmgate Consumer Survey Methods

I created a customer service survey to be distributed and completed by willing participants who purchased my produce or eggs through farm gate sales. To gain a deeper understanding of consumers, I surveyed customers who purchased eggs from my property through 13 structured questions and 2 open-ended questions. The survey primarily contained closed-ended questions (Kircher and Zipp, 2022) to obtain quantitative data (Choy, 2014). The surveys were collected from July 2023 to December 2023.

I coded these results and applied a PERMANOVA test to the coded data. The questions are found in Appendix I. Question 1 is about location with two possibilities, city and country, and acted as a treatment to set the base and to test the responses

(questions 2- 13) of the underlying theory that city people come to the country to gain access to farm fresh eggs while gaining firsthand knowledge of where the food came from, thus creating a deeper bond with their food source. The answers to the questions were assigned a numeric code. Basically, I asked questions to learn more about my customers. I asked my customers questions that helped me learn more about why they chose my location. I wanted to know if my customers had been to farms previously, and if so, what size; what farm size best supports wildlife? Despite the decrease in egg production that limited the number of days I offered farm gate sale of eggs, 20 customers completed the survey.

I used a PERMANOVA test using Hamming distance on the data converted into codes (Anderson 2014), excluding any question for which there was unanimous consent, that is all the same answers. All tests were performed using the PAST statistical software (Hammer & Harper, 2001).

Homesteader Interview Methods

Data Collection: Design and Setting

The participants were obtained through word of mouth; community members were asked if those participating in small-scale agricultural practices would be willing to be interviewed. Open-ended questions were structured to provide more in-depth explanatory information and reduce bias, but also provide opportunities for additional insights (Friborg and Rosenvinge, 2013). The questions were provided to guide the conversation in the unstructured, conversational interview before an informal interview to guide the conversation, ensuring to stay on topic. Interviews did not take place before obtaining consent. The one-on-one interviews were all recorded upon the agreement of

the participants. After completing the interview, the audio recordings were transcribed using either Zoom or Microsoft Word and checked afterwards by me for accuracy.

Informal Interview Questions

Participants were asked 5 questions:

1. What is their definition of a homesteading and were they homesteaders?
2. What were their agricultural practice/experiences including setbacks, and successes?
3. Why did they choose a life in agriculture?
4. What type of community connection do they have and value?
5. What are their future plans regarding their involvement in agriculture?

The first question was to learn what the participant viewed homesteading as, while the reaction was structured to learn if they believed they lived a life in accordance with the definition they provided. Questions 2 through 5, were structured to identify the frequency of the occurring key themes throughout the interviews. For questions 2 through 5, the number of occurrences stated by participants was recorded beside the codes. All interviews were recorded. I coded the answers following a 6-step thematic research approach (Naeem, 2023).

Community Organizations: Kinmount Library Gardening Group Methods

The Kinmount Library Gardening Group was originally developed as a place to encourage and support gardening in the area. This group met once a month at the Kinmount Library to discuss gardening and provide mutual support. Participants completed a questionnaire for each month from April to September of 2023. Meetings were not mandatory, thus the number of participants varied each month. Questionnaires

from unnamed participants were collected by the library. The questions asked were a mix of structured questions and open-ended questions. I used a mixed method (Choy, 2014) of both open-ended and closed-ended questions. The closed-ended questions provided a range of success to gauge the group (Choy, 2014), while the open-ended questions provided the group with the flexibility to share their unique thoughts and experiences (Zutter and Stoltz, 2023).

As a member of the Kinmount Library Gardening Group, I interacted with the group at a social level to conduct participatory action research (Barbier and Elzen, 2012).

Human Ethics Approval

All research methods were approved by Trent University's Human Participant Research Ethical Review Board (file number 28511).

RESULTS AND DISCUSSION

I have chosen to combined these sections of Results and Discussion, since many of the discussion points make more sense immediately after having presented the results.

Farmgate Consumer Survey

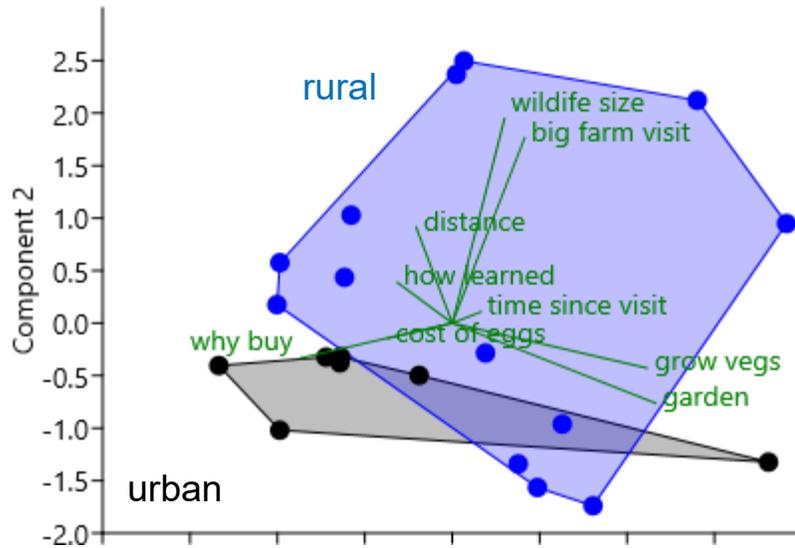
I collected and analyzed 20 egg surveys. I had a decline in egg production at my farm and could not complete as many surveys as I had hoped. Customers gave the same answers to three questions: small-scale farms were found very important; customers stated they liked chickens; and they believed there should be more farmgate sales. The remaining questions showed variability (Table 1).

The Permanova test results indicated a difference between city and rural customers (Pseudo F = 2.52, $p = 0.038$, using Hamming distance used in categorical data). I used PCA to see where these differences lie, PC2 and PC3 being the main ones (Fig. 1 and Fig. 2). Generally, customers with vegetable gardens have a reduced interest in the price of eggs, and customers who reported the price was too high had not been to a big farm.

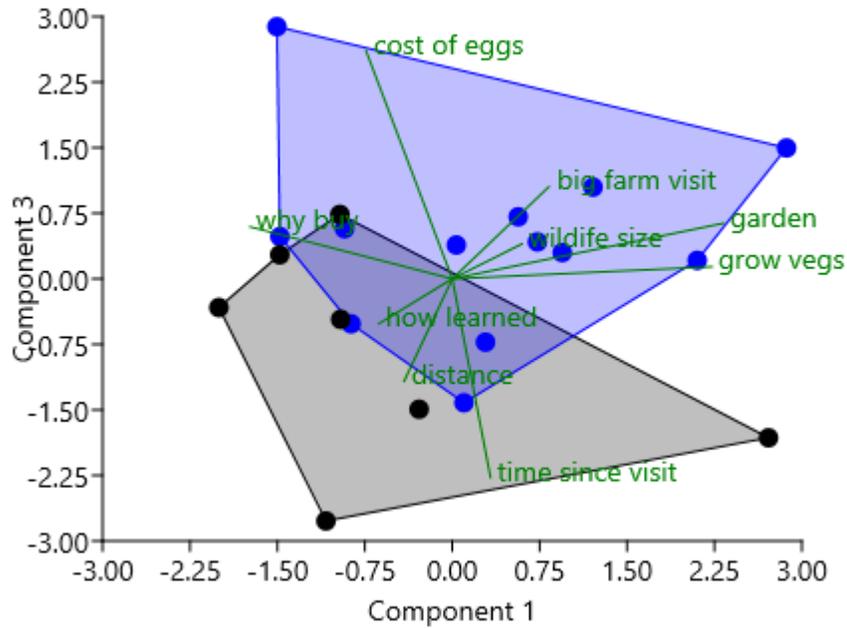
Table 1. Farm gate Customer Responses results.

ID No.	Where Live	Why Buy	Price	Heard	Farm size for wildlife	Big Farm Visit	Garden	Grow Veggies	Time Since Visit	Distance Travelled
	1	2	3	4	6	7	8	9	12	13
1	3	3, 4	1	2	1	1	1	2	4	2
2	1	4	1	1	3	2	2	2	1	2
3	1	1, 3, 4	1	1	2	2	2	2	2	1
4	1	3	1	1	2	1	1	1	3	4
5	3	1, 4	3	1	1	1	2	2	4	1
6	1	4	3	1	2	2	1	1	3	4
7	1	2	1	1	1	1	1	2	3	4
8	1	4	1	1	2	1	1	1	2	3
9	2	4	1	2	1	1	1	1	3	2
10	1	3	1	2	2	2	1	2	2	4
11	1	4	1	1	1	1	2	2	2	3
12	3	2, 3	1	1	1	1	1	1	3	3
13	1	3	1	1	1, 2, 3	1	1	1	2	2
14	3	4	3	1	1	1	1	1	1	3
15	1	4	2	1	1	2	1	1	2	1
16	3	4	1	1	1	1	1	1	3	1
17	1	3	1	1	1	1	2	2	2	1
18	1	3	1	1	1	1	2	2	2	4
19	1	4	1	1	1	1	2	2	3	2
20	3	2, 3, 4	1	1	1, 2	1	1	1	2	1

PC2 big farms are better for wildlife: up
has not been to a big farm: up



PC3 eggs cost too much: up
has not been to a big farm: down



PC1 customer has a vegetable garden: right side
price important: left side

Figures 1 and 2. PC1 is based on customers that have a vegetable garden (right side) or not (left side). The left side indicates those that believe price is the most important factor for purchasing.

Fig. 1 (upper). Components (PC)s 1 and 2 comparing rural (blue) to urban (grey) customers. PC 2 summarizes customers response with the belief that big farms are better for wildlife (wildlife size vector) correlates with those who have been to a big farm (big farm visit vector).

Figure 2 (lower). Components (PC)s 1 and 3 comparing urban (grey) against rural (blue), PC3, customers who believed the price was too much also had not been to a big farm.

Because two of the questions were open ended, and asked volunteers for recommendations and opinions (Question 14: What do you think about the connection to livestock/food sources? Question 15: Do you have any recommendations? Something you would like to see, do, or buy?) I used a WORD CLOUD method to assess these results (Figs. 3 and 4). In these analyses, the size of each word increases with the number of times that word or equivalent is spoken in the interview. The results of Question 14 in figure 3 link livestock to food, with other answers far less prominent. The results of questions 14 and 15 using all codes are more informative, linking food source and livestock, to the kind of farm.

A word cloud centered around the word "food". The word "food" is the largest and most prominent. Other words of varying sizes are scattered around it, including "process", "health", "connection", "quality", "soil", "human", "source", "farm", "nutrition", and "difference".

food

process

health connection quality

soil human source farm

nutrition difference

Figure 3. Top 3 subcodes result from question 14, main link is food.



Figure 4. Question 15 all codes generated to form word themes; The direction of the theme follows: Food -> Source -> Livestock -> Connection & Farm -> Kind & Supply.

Homesteader Interview: Participant Characteristics

The homesteader/small farmer interviews are summarized in Table 2. Participants tended to distinguish between men and women's roles: women tended to be more involved in the garden, while men tended toward raising and slaughtering livestock.

Table 2. Participants' characteristics categorized. Bees and hens are included as possible garden additions, by people who saw their primary role as gardeners but who also had bees or hens as well.

Category	Female	Male	Both
Gardening	8	0	0
Agroforestry/woodland skills	1	1	0
Garden + (bees/hens)	1	1	0
Rearing only Livestock	0	3	0
Livestock and Garden	3	0	2

Detailed Answers

The data from the codified transcriptions were identified and analyzed using tree (Atlas.IT, and individual assessment by the researcher) with the subcategories as the themes that branch from the questions. These are provided in Appendices II through VI. Select answers are provided below to give a sense of the responses:

Food Source and Self-reliance:

“... Homesteading is taking care of your health, getting in touch with your land or property, or your food Homesteading isn’t necessarily on 160 acres, [nor even] necessarily on land. It can be in an apartment making the most of what you have. It’s a mindset of making the most of your resources. [For instance,] if you live downtown Toronto, you could potentially still consider yourself a homesteader [by] planting some tomatoes on the porch [to consume].”

“I actually had to look up the definition for homesteading for that question. I have understood it to be trying to be as self-sufficient with your farming practices that you can be.”

“... [Homesteading is] where you try to be self-sufficient. You know, whether that be gardening or raising livestock or hunting or fishing or whatever it is that you do to sustainably have food.”

“I would just define homesteading as working with your plot of land, however, big or small it is in a sort of symbiotic relationship... being as self-sustainable as possible [by] doing everything yourself, like growing food, maintaining your property, raising animals or not, I mean, some people are vegan homesteaders, and that's great as

well....So, it's just that basically growing our own food, harvesting your own food and preserving your own food.”

“A definition of homesteading, I guess that I would say living a self-sufficient life with the land that you're on.”

“...[Homesteaders provide] for themselves defining the difference between a homesteader and a farmer. So, they might be raising cattle or chickens, etc, or gardening, but it's to provide for themselves versus as an income to support themselves or their family.”

“Homesteading is any contribution made to our food chain to gain an understanding of where food comes from linking our lived environment with what is able to be produced.”

“Homesteading is just being back when we were actually providing our own food and are not relying on other sources and eating nutrient dense rich food from soil and our environment locally.”

“... I guess homesteading is, you know, just trying to get more back to the basics and living off the land and for the resources that you can on that land.”

Skills:

“...homesteading is the collection and practice of being able to be self-sufficient. And whether or not that's collecting the skill sets where you're connecting with land and your knowledge bases. It's also a connectivity with people and community because without that you can't do certain things.”

“[Homesteading is]...using the land and the resources at our disposal to the best of our ability to provide for the needs of ourselves, our family, and our community in ways

that complement our chosen way of life. So our skill set and where we are as far as our kids ages and our friends and all that.”

“I define homesteading as being crafty and handy in your home, in your backyard.”

“I would define homesteading as in 2023 as a lifelong mission to get back to a more of a reliance on yourself and your own skills to meet your own basic needs than relying on the consumerist service. [For instance,] ... homesteading to me is like almost learning like small engine repair to how to pickle things.”

Historic considerations:

"The origins of homesteading, the so-called brave pioneers, went out over the land to establish their homesteads to build their farms and raise their livestock...it's important to remember the origins of homesteading [as] in contemporary society...so many have lived in a built-up urban environment. And homesteading is seen more as a turn to the land, return to a simpler time. People very quickly forget that...settler origins as essentially dominating the land, building the fences, clearing the trees, like that whole process. So, it can be put to civilized use as the government called it."

"... I was all over the planet trying to figure it out because my understanding of [homesteading] was in the 1800s when the government was trying to get people on the land and other people off the land, which is the whole subject. But for me homesteading is living on the land with a connection to nature that gives satisfaction and some self-sufficiency. To me, that is what it stands for today, not in the past. And it would encompass traditionally in North America: Hunting, cropping, lumbering, foraging, farming, herding and ranching, etcetera. All of those things would have had a component

of some sort at different time periods, depending on where you were, whether you were out in the prairies or on in the bush."

Sense of place:

"A warm place to grow eat and feel comfortable."

"The short answer is that homesteading is making the best of what you have. ...

So, to me, homesteading is settling. It's saying this is what I have. These are my circumstances. These are my resources. How can I make the best of this? And how can I make this work? And ultimately it is about creating a situation of food and shelter for your family within your community."

Details from the participants' interviews made it clear that for most, involvement in homesteading was primarily about the importance of establishing self-reliance through a direct connection to their food source. Secondly, the skills required to maintain a homestead through self-reliant, sustainable practices appeared to be the next most important characteristic of successful small farming or homesteading. The least important aspect regarding their involvement with homesteading was the physical place and the history of homesteading by early settlers in that place. From the interviews, homesteading appears to be associated with having a desire or need to learn or practice skills needed for some level of to self-sustainability and self-sufficiency, reducing the dependence on outsourced food or equipment. There emerged a theme of individuals requiring resourcefulness primarily in agricultural practices, using what one has, especially what space was available for growing/raising food. The above insights revealed a level of self-knowledge of limitations.

General themes: All homesteaders considered the soil. They consider their green waste, and the waste produced from their livestock, if they had any livestock. The majority of the participants sow seeds or plant seedlings to grow for consumption. Well over half raised at least chickens, yet few had braved the tasks of raising livestock as big as a cow or horse. No two farms were the same, each farm was unique to the land and the farmer's agricultural interests. Many of the small production farmers/modern homesteaders were also at different stages in their lives with agriculture. Some were starting out, while others were nearing the end and establishing plans for their children to be their successors.

Even though many responses overlapped, the participants to a large extent chose to participate in small production farming to have a better food source, mentioning the health benefits, self-reliance, and reduced cost in return for the time and effort spent. Many of the participants also simply had wanted to return to the land. From this group they expressed a desire to raise their children in an environment that could provide their children with hands-on learning experiences. Only a few of the participants were focused on the physical home, which became a homestead either by design or by convenience.

All the participants maintained some level of community connection. Most of the participants maintained connections through friends and family, extending to their neighbours through shared knowledge. Although there were a few who preferred to isolate, those who preferred to isolate still maintained community connections through sales of excess produce. Participants with larger scaled operations and those connected to the Kinmount Library Gardening Group all had additional connections to their

agricultural community. A large portion of the participants had excess produce, yet less than 50% of the participants sold their excess produce.

There are only a few common desires that align amongst the participants as previously, as stated the participants are unique with different interests and land resources. Many of the participants whom only just started their agricultural journey, with a couple of years under their belts, desired to build their livestock practices. Several participants spoke about the desire to build and expand their operations; in contrast, there are a couple participants that recognize reaching the maximum development of their operation that their time and energy allow. Additionally, one participant expressed having experienced burn-out due to overexertion from single-handed maintaining a larger operation but still maintaining a small garden with some chickens.

Just as the term homestead directs the focus onto the home, a few participants planned home improvements and renovations on barns for their livestock. There were only a few people concerned about what they left behind for the next generation as their future goals - less than I had expected. However, this was likely inferred in the child rearing answers.

However, expanding gardening operations was the highest common future goal among the participants.

Community Organization: Kinmount Library Garden Group- Results

The gardeners rated their gardens based on how they perceived the success of growth (Table 3). While the response from May depicted variation in experience, skill, and approach of the gardeners, by September all the gardeners had similar perspectives, that of having grown their best garden. Often in the area of Kinmount and Haliburton

growing outside is hindered by frost until late June, the duration of the species growing cycle is a key factor for gardens. Because some vegetables take longer than the growing season allows several of the participants started seeds in March or April while others purchased seedlings.

Table 3. Gardeners' perceived rate of success, from interviews of seven members of the Kinmount Library Gardner's Group, conducted in 2023 in Kinmount Ontario from May to September. Coded responses are: Haven't started a garden = 0, I keep killing everything = 1, Just started my first garden = 2, I have seedling(s) sprouted = 3, My garden looks promising = 4, This year's garden is my best so far = 5.

Participant	Month				
	May	June	July	August	September
1	0	1	1	4	5
2	1	3	3	4	5
3	3	4	4	4	5
4	3	4	4	5	5
5	4	4	4	5	
6		4	4		
7		5	5		

Generally, I found that members were happy to share their past experiences and knowledge to help each other avoid learning things through failure. Soil composition was recognized as an important element in determining the success of our gardens. Some gardeners reported having different types of soil across their plots of land, and over 80% of respondents reported having sandy soil. Consistently, at least 28.6 % of the members of the group reported having problems with their soil. For example, one person had problems with determining when to water plants.

Pests such as voles, moles, and chipmunks were commonly discussed problems. Members shared stories of using old rugs to cover the ground before preparing raised beds. The raised garden bed was a popular option among this group. Many members had purchased external soil and also used a layered-lasagna method of incorporating organic plant waste into beds to encourage microbial growth. Companion planting methods were often shared among participants. Tomato blight was a common problem. Many members struggled with blight and had decided not to grow tomatoes as a result.

General comments

I conducted my research (Cullen et al., 2015) informed by five key components: environmental, social, economic, cultural, and political components. By understanding a deeper understanding of small scale farming practices, I demonstrated the yearning for a positive relationship with food. I examined people's valuing of agriculture in those who purchased eggs from my homestead. I answered my question(s): "Does small scale or homesteading scale agriculture provide a benefit to sustainable agriculture in terms of maintaining **community connections** and **biodiversity**? Or, is it just a romantic but

obsolete form of agriculture **ultimately tending toward isolation**, and **misleading communities regarding productive agriculture?**” The answers are as follows.

Community Connections

A community works together through shared interests much like an ecosystem. Apart of any community, there are different stakeholders where there are suppliers and consumers. Table 4 shows how the participants I interviewed contribute as agricultural suppliers.

Table 4. Agricultural supply and role connections of the participants I interviewed.

Level of Connections	Number of participants who identified this item
Community Organization Advocate	9
Product- Off Farm Sales	5
Product- Sold at Farmgate	5
Service- Selling Knowledge	3
Sharing/ Donating Harvest	5

Homesteaders as Local Suppliers

The homesteaders interviewed were at different stages of completing their ideal agricultural goals: several years of agricultural development, a few years into building their agricultural establishment; a couple of years into their agricultural development; and an outlier with several years connecting with the land but often only spending a few years at the location through providing agricultural land services. Based on the interviews with other homesteaders, including those from the local Library Gardening Group, only 18% could obtain enough revenue to support themselves with their agricultural sales financially. Many homesteaders that were interviewed expressed believing that homesteading was not a means to produce large quantities to be sold but enough for their household and two others. For example, one of those interviewed expressed this idea this way:

“In this year, well every year, we add another bed, because eventually we want to be about 20-25 beds. Our beds are 4 feet wide, 12 feet or 16 feet in length. We do intensive square foot gardening. The idea is that with that many beds, we'll be able to raise enough food for our families and two other families. And, the reason we picked that is, if everybody could grow enough food for themselves and two other families, we could end world hunger. So, I'm not going to feed a village. I'm not going to feed the whole city; that is beyond my scope. But, I can produce enough on my land to feed ourselves well and feed two other [families].”

Relevance of homesteading and small-scale production

From the responses of my farmgate customers, the quality of food and support local growers encouraged their purchase decision. The reduction of so much food waste

present through a lengthy chain process has encouraged people to support local growers. Further there is a need to express the importance of such connections. From my results of the farmgate customers, there is a demand for more farmgate sales that can be accessed by the general public.

My results provide information pertaining to a more direct connection to our food sources. Reading or hearing about on farm experiences does not provide the same level of experience as firsthand in person experiential learning, even if briefly. It is difficult for people to connect with agriculture without being physically present. One participant retold his nephew's experience with milking, which he had previously told during the 2016 Minden forum for the Farm Association:

“So, my little brother, he was raised in the same house as me. We lived on a hobby farm [and raised with the same agricultural knowledge set; however, he is a vegan and has raised his children to also be vegan or have a vegetable focused diet.] So, they came over to visit. They lived right downtown[, Ottawa]. And, so, it was time to go milk the cow or goat. So, I was like, ‘I got to milk you guys want to come out and watch’ and [they said] ‘yeah, sure. Okay.’ So, these boys come out [...one was] seven and the other one would have been maybe 4. [They watched. I stripped] the goat and got milking. [Then,] I looked over at them and said, ‘Do you guys want to try?’ And the four-year-old looks at me and says, ‘I'm not touching that cow's penis.’ It's a totally different animal than what, but we're conditioned to know that milk comes from cows. And we don't know the anatomy of the animals, and it grosses us out. And so, we keep a distance from

where our food comes from. As homesteaders, we need to bring that truth back to society.”

This participant further added:

“Yes, we butcher animals...we do it in the most humane way because these animals we have a relationship with. We care for them deeply. We want them to thrive. We want them to grow. We want them to heal our land. We want them to be a blessing to us and so you treat them with the most respect...so, for us agriculture or getting into this life was to know where my food comes from, to know how it was produced, and to pass that on to others.”

Instead of food just being used as a means to fill a nutritional need, the interconnective process of growing food creates social bonds which build respect. This respect comes from spending time with food and livestock, gardens, and producers. Farmers who provide more time with their animals have happier and healthier livestock (Jackson and Hackett, 2014), but irregular visitors and interactions can differ depending on the characteristics of the species (Farrand et al., 2014). The positive relationships that accrue through physical interactions also provide mental health benefits through lowering the stress levels (seen in humans, Rowan and Beck 1994, and remarkably also in goats, Jackson and Hackett 2007).

Farming is a Direct Connection Our Ecosystem

Agriculture is the practice of crop cultivation and rearing livestock for various products, but there is so much more to the success of any agricultural practice. Knowledge of the resources available helps provide options for what agriculture is available depending on the environmental circumstances. By knowing what resources are

available and how best to use them, one can then know how much time and effort is available for any agricultural interests that one might wish to conduct. For instance, a participant in the Haliburton area spoke about their experience in building towards his dream of rebuilding his 3rd generation farm into a self-sustainable farm, yet experienced a tipping point in his resources as the land didn't have enough soil nutrients to support feeding the livestock year-round. Several positive effects occur through blending crop and livestock management (Sekaran et al., 2021; Hilimire, 2011). Thus, they chose to outsource livestock food and bring in more animals to build up organic matter and support fertile aggregation. A farmer needs to know how to work with their weaknesses instead of against them. At the beginning of the Kinmount Gardening Group, a member started having problems with voles, moles, and chipmunks burrowing in their garden, but by the end of the season was grateful for the aeration in the soil as it supports and encourages root growth.

Small Scale Farming as an Act of Isolation

Even though 18% of participants had expressed a preference for remaining isolated from community organizations, they still contributed by sharing their knowledge and or excess produce. The consensus amongst all the interview participants is that each one has some level of community connection, whether sharing knowledge occurs with only friends and family or through selling excess produce. However, joining a social gardening group provides more support and encouragement to be proactive in the garden increasing successful harvests.

SUMMARY

A diversity in scales of agricultural production is needed to support both large scale production needs for cities and manage the ecosystem (Peterson et al., 1998; Raymond et al., 2018); however, large scale farming operations just do not provide the same environment capable of supporting a biodiverse ecosystem (Vignola et al., 2015). The results from the egg customers showed a link between those who had been to a large scale farm and opinions regarding large farming effects on wildlife. The majority of my egg customers had travelled from a city, with only a few customers having grown their own vegetable gardens.

This raises the question of whether small scale farms are misleading through farmgate sales. One participant reflected on her past experiences selling eggs, she answered questions regarding the comparison to free-range and organic eggs. Several times visitors would not only see the chickens but also pet the hens that laid their eggs. While farmgate sales through small-scale agricultural gardens provides the opportunity for agricultural knowledge to be shared, both customers and farmers must be willing to take the time to present and receive the knowledge.

CHAPTER 4: THESIS CONCLUSIONS

In my opening chapter in which I reviewed the literature surrounding small farms and resilience, I presented three questions: is small scale agriculture true farming? And if so, is there any benefit from this scale of operation that might provide a reason for this return? Or is it just a nostalgic yearning for something that seems to be disappearing? I have tried to answer these in detail in chapters 2 and 3. This is my summary of those answers arising from my research in this thesis.

First, the definition for small scale agricultural practices can differ across various locations (Garner and De la O Campos, 2014) and are even through personal perspective, as can be seen through the diverse responses from the interviewed participants. For the purpose of my thesis, I have roughly defined small scale agriculture by the size of the land that is occupied, yet I did not include a defining lower or upper limit to this area, allowing the interviewees to define this in how they describe themselves. Through analyzing the data collected from my interviews, it is apparent that different types of connections can be made with agriculture through small-scale practices. Small-scale farming is commonly defined by the economic scale, turnover, and or profit levels; whereas, smallholder farms refer to the holding of land (Woodhill et al., 2020). Both smallholder and small-scale farms were considered through interviewing homesteaders; however, family farms probably most encapsulate homesteads as they both link the family and farm (Garner & De la O Campos, 2014). While homesteading was the focus on my research, many people did not know what this was or even that they were practicing this form of agriculture. However, the majority of participants connected with agriculture to support their family and enjoyed connecting with community. Making

some income, passive (saving) or active (sales) from their (often so-called) hobby farm was seen as a bonus. I agree with one participant's point of view about small scale farming who defined homesteading as, "... homesteading is taking care of your health, getting in touch with your land or property, or your food. Homesteading isn't necessarily on 160 acres, [nor even] necessarily on land. It can be in an apartment, making the most of what you have. It's a mindset of making the most of your resources. [For instance,] if you live downtown Toronto, you could potentially still consider yourself a homesteader [by] planting some tomatoes on the porch [to consume]."

Secondly, both farmers and the public in general are able to benefit from these small agricultural operations. These small agricultural operations hold many benefits, from supporting the surrounding community (Baker, 2004; Beingessner and Fletcher, 2020). that include supporting a diverse ecosystem (Peterson et al., 1998). Operating on a smaller scale provides farmers opportunities to grow a diversity of crops and/or livestock (Vignola et al., 2015) including heritage breeds. Smallholder farmers don't put all their eggs in one basket, so to speak.

The Canadian Food Inspection Agency (2018) advocates biosecurity measure that hinder public visitors to large-scale farms. This is where small scale farms can provide a resource for the larger community and allow visitors, without jeopardizing the livestock of large farms through the potential transmission of pathogens. Further, the relationship between farmer and customer builds relationships of knowledge and trust (Yee et al., 2005). This extends to the larger community even though many people will never directly visit a farm (Clark et al., 2019).

I cannot deny that there is a romantic attraction to being able to cook a meal after providing all the ingredients from one's garden, including the livestock. Many homesteaders I interviewed have chosen this life specifically to achieve a direct link with their food. The majority expressed as secondary benefits any improvements to their health after having taken a more active role by building a relationship with the food they eat.

Homesteading is not for the faint of heart; it is a demanding life, even if it is considered a hobby. Community gardens are a great compliment to this way of life, and provide access to the same sense of accomplishment that homesteading provides (McDougall et al., 2019; Raymond et al., 2019). In conclusion, small scale agriculture contributes in a unique and irreplaceable way to the entirety of the agricultural industry; therefore, it is farming, not some sort of half-farming.

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Appendix II

1st Tree Model

Trunk- Question#1 Homestead/Homesteading Definition

i) Main Branch- Original Homesteader definitions

(1) 1st Twig- Homestead Definition Examples

(a) 2nd Twig- Self-sufficiency

(i) 2nd Twig- Resourcefulness

1. 3rd Twig- Resource management

(ii) 2nd Twig- Food Connection

1. 3rd Twig- Food knowledge

2. 3rd Twig- Food sustainability

3. 3rd Twig- Not for Income Source

4. 3rd Twig- Personal Consumption

(iii) 2nd Twig- Healthcare

(iv) 2nd Twig- Land Ownership

(b) 1st Twig- Small Twig- Agricultural practices

(i) 2nd Twig- Establishing farms

(ii) 2nd Twig- Garden

1. 3rd Twig- Permaculture

2. 3rd Twig- Soil health

a. 4th Twig- Soil building

b. 4th Twig- Fertility Aggregation

c. 4th Twig- Organic Matter

(iii)2nd Twig- Preserving Harvest

1. 3rd Twig- Water bath Canning
 - a. 4th Twig- Jam
 - b. 4th Twig- Pickling
2. 3rd Twig- Pressure canning
3. 3rd Twig- Baking
4. 3rd Twig- Cooking
5. 3rd Twig- Freezing

(iv)2nd Twig- Raising Livestock

1. 3rd Twig- Chicken
2. 3rd Twig- Goats
3. 3rd Twig- Pigs
4. 3rd Twig- Sheep
5. 3rd Twig- Horses
6. 3rd Twig- Cows
7. 3rd Twig- Donkeys

(v) 2nd Twig- Living off the land

1. 3rd Twig- Lumbering/milling/ chopping wood
2. 3rd Twig- Foraging
3. 3rd Twig- Fishing
4. 3rd Twig- Hunting

(c) 1st Twig- Environmental Connections

- (i) 2nd Twig- Environmental Stewardship
 - (ii) 2nd Twig- Environmental awareness
 - (iii) 2nd Twig- Connect with nature
 - (iv) 2nd Twig- Civilizing/Colonizing the land
 - (v) 2nd Twig- Food chain reciprocity
- (d) 1st Twig- Community
- (i) 2nd Twig- Fair/Market share
 - 1. 3rd Twig- Gifting produce
 - (ii) 2nd Twig- Barter/trade goods
 - (iii) 2nd Twig- Children
 - (iv) 2nd Twig- Family
 - (v) 2nd Twig- Neighbours
- (e) 1st Twig- Skills
- (i) 2nd Twig- Developing new skill
 - (ii) 2nd Twig- Building skills
 - (iii) 2nd Twig- Applying skill
 - (iv) 2nd Twig- Adapting skills
- (f) 1st Twig- Limitations
- (i) 2nd Twig- Balance lifestyle
 - (ii) 2nd Twig- Limited time
 - (iii) 2nd Twig- Limited production
- (g) 1st Twig- Interviewee Perceptions
- (i) 2nd Twig- Homesteader vs farmer

1. 3rd Twig- Homesteader- grown for personal use
 2. 3rd Twig- Farmer-grown for sale
- (ii) 2nd Twig- Healthcare
- (iii) 2nd Twig- Food knowledge
1. 3rd Twig- Where food comes from
 2. 3rd Twig- How food is grown
 3. 3rd Twig- What went into the process of the food being made
- (iv) 2nd Twig- Mindset
- (v) 2nd Twig- Historically
1. 3rd Twig- Western concept
- (h) 1st Twig- Perceptions of agriculture/homesteading
- (i) 2nd Twig- Landscaping for agricultural needs
 - (ii) 2nd Twig- Modern practices
 - (iii) 2nd Twig- are Homesteader(s)
- ii) Main Branch – Alignment with Homestead Definition (17 interviews with 2 couples)
- (1) 1st Twig- No (1)
 - (2) 1st Twig- Partially (2) {couple agreed, should be 1 more}
 - (3) 1st Twig- Yes (14) {Additional 1 spouse comment added}

Appendix III

2nd Tree Model

Trunk- Question 2: Agricultural practices/ experiences

- iii) Main Branch- Grew-up farming 3
- iv) Main Branch- Gardening 17
 - (a) 1st branch- Only gardens 5
 - (b) 1st branch- Composting 2
 - (c) 1st branch- trees 4
 - (i) 2nd branch- fruit trees 4
 - (ii) 2nd branch- maple syrup 2
 - (iii) 2nd branch- grapes
- v) Main branch- Foraging 2
 - (a) 1st branch- Medicine 2
 - (b) 1st branch- Hunting 1
- vi) Main Branch- Preservation 5
- vii) Main Branch- Logging 2
 - (a) 1st branch- heating house 1
 - (b) 1st branch- milling 1
- viii) Main Branch- Raising Livestock 11
 - (a) 1st branch- poultry
 - (i) 2nd branch- chicken 11
 - (ii) 2nd branch-turkey 3
 - (iii) 2nd branch- duck 2

- (iv) 2nd branch- geese 1
- (v) 2nd branch- quail 1
- (b) 1st branch- pig 5
- (c) 1st branch- lamb/ewes/sheep 3
- (d) 1st branch- goats 5
 - (i) 2nd branch- meat 3
 - (ii) 2nd branch- dairy 2
 - (iii) 2nd branch- lawnmower 2
- (e) 1st branch- apiary 2
- (f) 1st branch- horse 3
 - (i) 2nd branch- workhorse 1
 - (ii) 2nd branch- recreational horse-riding 2
- (g) 1st branch- cow 2
 - (i) 2nd branch- dairy cow 2
 - (ii) 2nd branch- meat cow 1
- (h) 1st branch- livestock dogs 2

Appendix IV

3rd Tree Model

Tunk- Question 3: Why choose agriculture?

- i) Main branch- Better Food Source 10
 - (a) 1st branch- A connection with food 4
 - (i) 2nd branch- Health 6
 - (ii) 2nd branch- First-person knowledge 4
 - (b) 1st branch- Carbon footprint 2
 - (c) 1st branch- Self-sufficient 4
 - (d) 1st branch- Reduce costs 4
- ii) Main branch- Returning to the land 7
 - (a) 1st branch- Nature/country life 1
 - (i) 2nd branch- Spiritual connection 2
 - (b) 1st branch- Agriculturally raised 3
 - (c) 1st branch- Raising children 7
 - (i) 2nd branch- Homeschooling 4
 - (ii) 2nd branch- Educating children 3
- iii) Main branch- Physical Homestead 4
 - (a) 1st branch- “It grew on us”/ “Just happened” 3
 - (b) 1st branch- Established from a dream 1

Appendix V

4th Tree Model-

Tunk- Question 4: Community Connections?

ix) Main Branch- Isolates 3

- (a) 1st branch- Distrusted community connections 1

x) Main Branch- Connecting 15

- (a) 1st branch- agriculture organizations & farmers markets 7

- (i) 2nd branch- Homesteader Network 6

- (ii) 2nd branch- Friends & Family 15

- (iii) 2nd branch- Neighbours 11

- (b) 1st branch- Online Groups 1

- (c) 1st branch- Homeschooling groups 1

xi) Main Branch- Excess produce 13

- (a) 1st branch- Selling 7

- (i) 2nd branch- Homemade products 3

- (ii) 2nd branch- Livestock meat 4

- (iii) 2nd branch- Seedlings 1

- (iv) 2nd branch- Fresh cut flowers 1

- (b) 1st branch- Donations and gifts 3

- (c) 1st branch- Trade 1

- (d) 1st branch- Online Sales 2

Appendix VI*5th Tree Model*

Trunk- Question 5: Future agricultural desires?

- i) Main branch- No plans 1
- ii) Main branch- Health focused 1
 - iii) Main branch- Expand garden 5
 - (a) 1st branch- 1 years' harvest/preserved 1
 - (b) 1st branch- Permaculture mindset 1
 - (c) 1st branch- Medicine Garden 1
- iv) Main branch- Livestock 3
 - (a) 1st branch- raise chickens 2
 - (b) 1st branch- raise alpaca 1
 - (c) 1st branch- raise cows 2
 - (d) 1st branch- raise goats 1
 - (e) 1st branch- raise sheep 1
 - (f) 1st branch- reduce livestock 1
- v) Main branch- Next generation 3
 - (a) 1st branch- share knowledge 2
 - (b) 1st branch- Fermentation alcohol beverages 1
- vi) Main branch- Building Development 4
 - (a) 1st branch- build house 1
 - (b) 1st branch- A true home 1
 - (c) 1st branch- Build cold-cellar 1

(d) 1st branch- Agro- tourism 1

vii) Main branch- Land 3

(a) 1st branch- Acquire more land 1

(b) 1st branch- Off-grid 1

(c) 1st branch- Foraging 1

viii) Main branch- Community projects 1

(a) 1st branch- Shared knowledge 1

1st branch- Barter/ trade community 2