Growing in This Place: A Place-based Guide to Edible Wild Plants and Wildcrafting in Minnesota

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GROWING IN THIS PLACE: A PLACE-BASED GUIDE TO
EDIBLE WILD PLANTS AND WILDCRAFTING IN MINNESOTA

by
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A capstone submitted in partial fulfillment of the
requirements for the degree in Master of Arts in Education.

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Saint Paul, Minnesota

August, 2015

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This wild edibles guide is dedicated to the self-provisioning efforts of my great-grandmother Edna Jane Higgins.
“One of the greatest benefits of eating wild food is that it reminds us that we are not fed by the supermarket but by the sunshine, rain, and soil.”

Samuel Thayer, *Forager’s Harvest*, 2006
CHAPTER 1
INTRODUCTION

Overview

The purpose of this capstone project is to build in children a greater understanding of where they fit in the food chain and what it means to eat locally. By participating in a natural and efficiently short food chain, children will gain an appreciation of what naturally occurring wild edibles grow around them. This resource guide can be used in conjunction with any existing schoolyard gardening curriculum to extend understanding of local food chains to include wild edibles.

In this first chapter, I seek to build the context from which my topic and interest in the area of edible wild plants and wild-crafting began and build a rationale for the development of a place-based children’s guide to edible wild plants and foraging locally. The purpose of this project is to combine the goals of place-based education with the goals of harvesting and eating locally. My hope is to build a basic understanding of where wild plant foods come from and through the process of foraging for wild edibles and to offer opportunities for children and their accompanying adults to genuinely bond with nature.

One goal of environmental education as outlined in the Tbilisi Declaration of 1977 reads:

A basic aim of environmental education is to succeed in making individuals and communities understand the complex nature of the natural and the built environments resulting from the interaction of their biological, physical, social, economic, and cultural aspects, and acquire the knowledge, values, attitudes, and practical skills to participate in a responsible and effective way in anticipating and solving environmental problems, and in the management of the quality of the environment (Tbilisi Declaration, 1977).
If a goal of environmental education is to foster a future mindset of conservation and a new generation of stewards of this earth, we must provide children with opportunities to be engaged personally with nature (O’Brien, 2010). Getting children outside exploring and foraging in natural wild spaces, creates many opportunities for close engagement with nature.

The first portion of this chapter is dedicated to the food provisioning experiences of my great grandmother Edna Jane Higgens. By visiting her activities surrounding food provisioning and wild-crafting and comparing them to my own actions of foraging locally, I gain insight into what we share in common across the generations, as well as an awareness of what was lost over the decades. Due to a loss of traditional plant knowledge within my own family, *Growing in This Place* becomes a personal goal to rekindle folk knowledge of plants even at its simplest level in the forms of backyard wild edible gardening and wild foraging.

The next portion of chapter one describes a personal revelation that brought me to this place of inquiry and describes my own connection to wild edibles gardening and foraging. There is nothing more place-based or local than what grows outside my very own doors. What I find growing nearby serves as a daily reminder of how closely area plant life is tied to where I live. Harvesting local wild plants reminds me of the role I play by way of a very short food chain that moves directly from nature to plate.

This project is not meant to be a stand-alone science curriculum but rather a guide “with a wild edible twist” intended to supplement any of the many plant science and/or gardening curriculums that exist today. The guide is written to be used with young children ages four to eleven in mind. This targeted age group covers two stages in children’s environmental development as identified by educator and writer David Sobel. Sobel recommends that environmental education be sensitive to the developmental stages of childhood and identifies the
youngest group (ages 4-7) as members of the empathy stage. During this stage, the main focus of a child’s environmental education needs to be placed close to home with opportunities to bond with nature by getting to know the flora and fauna of their own backyards (Sobel, 1996). Following the empathy stage comes the stage of exploration where children (ages 8-11) broaden their horizons and expand their scope traveling farther from home to investigate the neighborhood, community, and region where they live. Sobel stresses the importance of providing opportunities for young children to fall in love with nature by stating:

"If we want children to flourish, to become truly empowered, then let us allow them to love the Earth before we ask them to save it " (Sobel, 1996, p.47).

It is my hope that this resource will be used by both formal and informal educators; parents, club leaders, and/or naturalists as it does not require the “teacher” to be anyone more than an adult willing to accompany the child through the bountiful experiences of learning alongside nature. A child needs the companionship of one adult to share the excitement and joy of discovering the mysteries of the natural world around them (Carson, 1965). In honoring the wisdom of acclaimed biologist and naturalist Rachel Carson regarding a child’s sense of wonder, this guide is designed to be used by anyone with a willingness to embrace environmental education by way of wild edibles, acting simply as a child’s guiding companion.

Edna Jane Higgen

A look back at Edna Jane's life reveals a subsistence way of living that was common for rural central Minnesota people during a period in American history marked by unemployment and rural poverty. At a time when people did whatever was needed to get by, my great grandmother was abandoned by her husband and left with three children to raise on her own. The stories that are shared about her life, come from recollections of my grandmother and great
uncle (now both in their nineties) and reveal a woman whom my grandma refers to as "heroic" and my great uncle calls "the backbone of the family".

The reason I have chosen to look back at Edna Jane's life and experiences is because I find myself in a similar place where growing my own food, wild harvesting, and living connected to the land have become a part of my everyday life. I take great pride in eating so locally that I harvest food that grows just steps from my front porch. This self-provisioning defines me, how I see myself in relation to the environment, and forms a portion of my ecological identity. "Ecological identity refers to all the different ways people construe themselves in relationship to the earth as manifested in personality, values, actions, and sense of self " (Thomashow, 1996, p. 3).

A friend of mine once posted that "eating is an ecological act." This friend was referencing a quote from *The Omnivore's Dilemma: A Natural History of Four Meals*, (Pollan, 2006). That statement serves as a resonating reminder of how food choices have a direct impact on the environment. Our daily food choices are personal reflections of our ecological beliefs and values. I am confident that Pollan's statement would never have crossed Edna's mind four generations ago. Food choice for her was the day to day tasks of obtaining and using whatever she could locally to feed her three children. Hers was a matter of self-provisioning and food stability, mine is in fact, a matter of ecological choice. Though our reasons are different, I find that both Edna Jane and I share the common practice of growing locally and foraging right out our own backdoors.

My love of working with the land and digging in the dirt is enriched by the stories of my great grandmother's resourcefulness in producing her own food. I never met my great-grandmother, she died at age forty-five. The stories I know about her have been told to me
through the recollections of my grandma and great uncle. My respect for her resilience and resourcefulness to provide food for her family in spite of life's hardships grew through hearing stories about her and spurred my own interests in self-sufficiency, the value of homegrown foods and what it means to be connected to the land. During the era of my great grandmother’s lifetime, much of the food bought and consumed in the United States was grown locally (Pirog, 2009). This was a time when communities understood the quality of the food they were buying through direct contact with farmers. Canning, dehydrating, salting, and smoking were the methods used to preserve foods. Very few foods were processed or packaged and fresh foods like fruits, vegetables, fish, and dairy products typically traveled less than one day to market (Giovannucci, et al., 2010). The foods available to my great grandmother and her children were dictated by locality and seasonality. The stories shared by my great uncle tell of the seasons and an understanding of phenology. He and his mother needed a sound working knowledge of nature’s patterns, an understanding of when the time was right for harvesting and gathering from the wild, natural spaces near their home.

The historical backdrop for Edna Jane's self-provisioning through backyard gardening and wild-crafting took place in and around the Great Depression Era and World War II. I imagine that it must have been extremely hard to raise three children on her own during that period in American history. According to my grandmother, my great grandma was not raised on a farm and cannot recollect who would have taught her mother how to garden and can her own vegetables or how to, butcher and dress the chicken, rabbit, pheasant and squirrel she fed her children. There is a gap in my grandma’s memory or understanding of who would have imparted this self-provisioning knowledge to my great grandmother.
**Family Knowledge Lost**

Most of my thoughts about my great grandmother are musings because there is not a surviving journal or record of her life and my grandma now only remembers bits and pieces of her mother. I miss the folk knowledge about plants and recipes that she might have passed down to me had we the chance to meet and spend time together in the gardens and adjacent wild spaces or her kitchen. I feel a sense of deep loss at the realization that because my grandma was forced out of necessity to take cleaning jobs in town, she did not work side-by-side with her mother in the gardens. My great-grandmother's folk knowledge of plants was not passed down to my grandma, to my mother, or to me. The natural cycle of traditional knowledge that could have been passed down from one generation to the next was severed by the need for my grandma to take odd cleaning jobs in town to help contribute to the family income. This requirement to be employed out of the home took her away from her mother's garden and the knowledge she would have gained there. This left her youngest brother Donald (my great uncle) at home to help my great grandmother. Uncle Donnie has clearer memories of working closely alongside his mother to grow food in the gardens and to gather wild foods from the area. He recollects wild harvesting juneberries, blackberries, wild grapes, and butternuts from the wild spaces along the Mississippi River banks.

In the article, *Reviving Dormant Ethnobotany: The role of women and plant knowledge in a food secure world*, authors Talberth and Leopold describe the loss of what they call traditional ethnobotanical knowledge (TEK) and the role it plays in food security:

While traditional ethnobotanical knowledge (TEK) is still critical in a few regions where indigenous cultures and native ecosystems co-exist, in the past three centuries, this knowledge base has gradually eroded and gone extinct in many others. In still other
regions, it lies dormant in the memories of elders – mostly women – who retain both
skills and knowledge specific to the ecosystems in which they live or were raised.
As increasingly recognized by the sustainable development community, protecting all
forms of local ecological knowledge is a key solution to the challenges over food security
and the genetic foundation of modern agricultural systems. What we argue here, is that it
may be necessary not only to protect the knowledge base of communities who engage in
ethnobotany in a dynamic or active sense, but to revive this knowledge where it is not
extinct, but merely dormant (Talberth & Leopold, 2012).

The stories shared with me about Edna Jane help close the traditional information gap only
slightly. More knowledge could have been shared and retained within the family, had my great
grandmother written down or recorded her activities and had my grandma actually worked
alongside my great grandmother. My own family’s loss of traditional knowledge is indicative of
the increasing loss of traditional ecological knowledge over the past century. Growing research
in the field of ethnobotany examines the loss of traditional ecological knowledge and reports
marked differences between what children know and how they learn about plants compared to
the plant knowledge of their parents and grandparents (O’Brien, 2010). When provided the
opportunities to work alongside a parent, grandparent, or family member, children build a
knowledge of the local flora and ecology through intimate experience and repeated contact.
Here, traditional ecological knowledge is retained as it is passed down from one generation to the
next.

*Biophilia Revealed*

A moment in my ecological identity development that remains memorable for me, comes
from an experience I had at the Native Garden on the University of Minnesota St. Paul campus.
Being an accidental gardener, everything I know about growing plants comes from old fashioned trial and error. Gardening advice was not passed down to me by any of my family members. It was at the Native Garden that a Dakota man asked our group of Minnesota Master Naturalist Volunteer trainees a question. He held up a seed and asked the group, “What does this seed need from you to grow?” A tiny voice inside my head whispered, “Nothing.” The speaker waited patiently as group members listed soil, water, sunshine, fertilizer. The voice in my head, now a little agitated by the self-importance of my peers argued, “The seed does not get those things from you!” The group seeming content with their answers, waited for the presenter's response. The answer the native presenter gave was the same one that had voiced itself inside my head, "nothing.” The point he was trying to make was that nature is complete in and of herself as he shared the indigenous beliefs that guided the Native Garden and the gardening practices there. I knew from my own experience in the garden by simply watching nature and paying attention, that She required very little intervention from me. Every summer there would be some tiny seedling that had germinated undetected that sent up its shoot in a place where I had not sown seeds. I view most uninvited seedlings as surprise guests and often make room for them in my garden once I have identified their usefulness. It does not matter to me if it is considered undesirable to other gardeners and it is not uncommon to find several edible “weeds” growing alongside the rows of cultivated plants in my garden.

The germination process is one of many processes in nature that remains magical to me. It would be irreverent to pluck an unwanted guest from the dirt without first examining if it was friend or foe. At the time, I did not know the name for my inherent appreciation of nature and accompanying disdain for the manipulation of it. I now have learned that it is called biophilia. Biophilia is the love of life or living systems and refers to the human psychological tendency to
be attracted to all that is alive and vital (Wilson, 1984). Based on my personal tendency to love living systems, I could not understand the arrogant thinking of the group that day in the University of Minnesota’s Native Garden. It became clear to me that I could have happily worked in the native garden and adhered to the guiding principles, as I felt a sense of familiarity with the values inherent in the practices of the gardeners there. The term biophilia has yet to find its way into many peer reviewed articles and few academics accept Wilson’s meaning (Simaika and Samways, 2009), but it is one that holds a place in my ecological identity and defines who I am at my naturalist core. Carol Lee Sanchez articulates something similar to biophilia in an excerpt taken from the anthology *Ecofeminism and the Sacred* (Adams, 1993) titled, *Animal, Vegetable and Mineral: The Sacred Connection*. Here the author describes the Native American concept of relatedness and the idea that everything on earth is connected and sacred. According to this native worldview “there is nothing under the sun that can be called unnatural or separated from nature” (p. 209).

In the book *Birthright: People and Nature in a Modern World*, Kellert states that the core of our humanity is the product of an evolved relationship with and reliance on nature. A relationship with the natural world where for 99% of our human history our very survival looked to and depended on everything non-human around us (Kellert, 2012). Kellert labels this human physical and mental dependence on nature “biophilia” and defines it as our inherent inclination to affiliate with the natural world in order to maintain our own physical and mental well-being.

*My Own Connection to Place*

My husband and I fled suburbia and headed to the countryside for the same reason that I found myself irritated by the arrogant answers surrounding the seed question, a difference in
personal values. My personal beliefs and values about the natural world prevented me from fitting in with suburban culture. A growing sense of disconnection from nature nagged at me while in suburbia and my natural love of living things was repeatedly questioned by my neighbors. I refused to chemically treat my lawn and was terrible at letting clover spread across the lawn over to invade the neighbor's. My neighbor would come over and school me on the ways of chemically, deadly weed eradication. I would smile and report that the bunnies I had seen earlier that week had very much enjoyed the clover and didn’t it smell so sweet? He would instruct me on how to properly trim my trees to get the right shape and I would respond that trees had been growing for thousands of years without my help. I would sit in my lawn chair and watch with disbelief as he washed and dried his lawnmower and vacuumed his garage. It became glaringly apparent that I did not fit in with my suburban neighbors, so after five years of smiling politely, we left suburbia behind.

In search of wide open spaces where neighbors couldn't see what was growing in the lawn, we moved our family out to the rural rolling hills of south central Minnesota on to a beautiful 36 acre parcel of land. It was here, surrounded by farm fields, marshes, and remnants of the Big Woods that a deeper understanding of my connection to nature emerged. As my ecological identity matured over the years and my sense of place deepened, I steadily and firmly established my roots. I began to question what it means to be from a specific place, to be “local”. In the book *Ecological Identity: Becoming a Reflective Environmentalist* (Thomashow, 1996) the author refers to sense of place as the search for ecological roots that is best accomplished when we have a relationship with the land that we live on, the ability to secure ourselves in what the author calls a tangible place. The author defines it as, "sense of place concerns our home and region, feelings about land and community, kindred species, community niches, and sacred
places. To have a sense of place is to merge our personal geography with the ecological landscape, incorporate maps of memory with how we dwell in a bioregion” (Thomashow, 1996, p. 194).

As my sense of place grew, I gained a new appreciation for the small scale family farms and backyard gardens that dotted our three miles of dirt road. As I watched the seasons unfold over the months and through the years with rolling fields, old barns, and family farmsteads as the backdrop, I began to respect the work of my farming neighbors and their connection to the patterns of nature and dependency on the land. Now, some twenty years later, I can say that I am very much “from this place” and have a deep sense of what it means to live and grow here.

CONCLUSION

My own love of nature and affinity for wild edibles, coupled with my personal goal to revive traditional folk knowledge within my own family, shape the purpose for this wild edibles guide. With several generations passing since the end of the era of small family farms and living off of the land, people have lost their connection to food. A guiding question for this project became, “What do children actually know about food chains and where they fit in?” I believe it is important to revive our nation’s food knowledge if even at the most basic level, by providing children and their adult companions simple tips for gathering wild edibles and preparing recipes for eating and enjoying them together. In an effort to root kids in their own surroundings by deepening their sense of place another question emerged, “What are some simple things that kids could know about where they live and what grows naturally around them that would enrich their sense of place?” The final question driving the direction of this project became, "In teaching children about food, what are some basic skills that are necessary for creating a greater sense of food independence?" With place-based and project-based educational principles as the compass
for this project, my hope is to share with children the joy of discovery that awaits them right out their own backdoors through building a basic understanding of some common wild edibles. How to forage, gather and prepare wild foods becomes the main focus of the Growing in This Place guide. Edna Jane grew up and raised her children during a time when backyard gardens and wildcrafting were just what many people did in rural central Minnesota. Subsistence food production right out her door. It wasn't trendy or popular, it was simply how she provided food for her family. She was a "locavore" before the term made Oxford's 2007 word of the year (Nizza, 2007) and provided food for her family from her own backyard long before "locally grown" became a trending catch-phrase to symbolize what it means to eat ecologically.
CHAPTER 2
LITERATURE REVIEW

Introduction

Chapter two explores topics related to nature and children, eating locally, children and traditional food knowledge and cooking as a life skill. All come together to shape the rationale that serves as the foundation for this place-based wild edibles guide. The chapter begins with a look at children and their developing relationship with nature, the stages they move through and the important role nature plays in healthy child development. The next section of the literature review is devoted to building an understanding of place-based education, highlighting its characteristics and strengths. Another portion of chapter two looks at the importance of eating locally and discusses the role of industrial agriculture and commercialized foods in obscuring our relationship with food. The loss of traditional ecological knowledge and children is discussed in this chapter followed by a brief look into wildcrafting. Chapter two closes with an investigation into the state of children’s food and cooking knowledge as it plays a role in building food independence.

Children and Nature

As educational theorists, teachers, government policy makers and parents wrestle over the appropriateness of math and literacy testing in children under age eight, we sometimes lose sight of nature’s educational capability to nurture learning through natural inquiry (Kiser, 2015). Nature provides the perfect instructional backdrop for the wandering and wondering, probing and questioning that young children are so well suited for as they intuitively investigate the world around them.
In the book *Birthright: People and Nature in a Modern World*, Kellert asserts that “the natural world remains the most sensory stimulating and information rich environment people ever encounter” (Kellert, 2012, p.4). Nature becomes an unrivaled context for learning and experience, especially in the cognitive development of young children. Learning through nature is vital to nurturing cognitive growth as it requires a variety of tasks to be performed by children engaged with it. Kellert lists recognition, response, identification, differentiation, sorting, naming, analysis, evaluation and judgement as some of the cognitive tasks that children are required to perform when interacting with natural systems. Both consciously and unconsciously children are required to respond to the ever changing stimulus and sensory information that floods them in the natural world. The wealth of information that nature provides is relevant to a child’s development as it engages them fully both intellectually and emotionally.

Young children learn differently about the natural environment than older children do. They construct their own sense of responsibility for the earth from the inside out (Grant & Littlejohn, 2005) rather than taking knowledge and facts from the outside. A child's respect for the environment and valuing of natural systems comes through rich, intimate experiences in nature. The first step to creating environmental stewards is to create opportunities for children to fall in love with the natural world around them. Environmental education needs to keep developmental appropriateness in mind when designing programs for young children. The emphasis needs to be on exploration and discovery through multi-sensory, hands-on experiences (Grant and Littlejohn, 2005). Young children relate to the natural world with wonder and awe. It is this joy and amazement that is more important to foster than facts.

Increasingly, children in our society are becoming more and more removed from nature by spending less time playing outside and more of their time indoors. The typical child in America
spends ninety percent of their time indoors (Kellert, 2015). Experiences outdoors are being substituted by increased indoor time with exposure to the wild occurring through television and electronics (Nabhan, 1998). For the most part, today’s children are largely being raised confined inside sensory sterile environments. In the book *Last Child in the Woods*, (Louv, 2008) the author makes reference to a shrinking sensory rich world for children. More children are being raised indoors in contained environments with limited access to outdoor green spaces. Louv uses the term “nature deficit disorder” to describe the state of our children’s disconnection from nature and urges parents, educators, and policy makers to get children outside enjoying the pleasures of playing and learning outdoors (Louv, 2008). The author outlines a child’s need for nature in the following way:

Children need nature for the healthy development of their senses and therefore, for learning and creativity. This need is revealed in two ways: by examination of what happens to the senses of the young when they lose connection with nature, and by witnessing the sensory magic that occurs when young people--even those beyond childhood--are exposed to even the smallest direct experience of a natural setting (p. 55).

As an educator, parent, and grandparent, I have directly witnessed children enthralled with nature and all of its wonders. From the squeals of surprised delight during discovery, to the moments of quiet probing exploration, nature appeals to whom children are as learners. The learning process for children is a continuing changing of mind and body, where learning occurs not only with the brain but with intuition and emotion in combination with the whole body (Beltzig, 2015). The natural world offers a sensory rich and ever changing environment for children to learn in. Each time a child goes out into the natural world unexpected discoveries await.
**Place-Based Education**

The term place-based education is used interchangeably with terms such as community-based learning, service-learning, environment as an integrating concept (EIC), experiential education, sustainability education, pedagogy of place, project-based learning and the more general term environmental education. In each of these terms, there exists a direct connection between the school, environment, and the community in which the school is located (Powers, 2004). A goal of teachers engaged in place-based education is to extend instruction and learning beyond traditional school walls to include the surrounding community, recognizing the role and value of what the community brings to student learning. Place-based educators work to provide a wide variety of approaches to teaching that allow students to associate what they are learning with their own lives, communities, and regions (Smith, 2002). One of the defining features of place-based education is the emphasis on practical engagement of students with their local environments (Meek, 2011). Place-based learning can occur within both formal and informal education settings. By design, it is a hands-on approach to learning that focuses on problem solving and project-based activities. A trending disconnection from nature is a reality for today’s youth that leads to a growing concern among conservationists about the pending generational gap in understanding and the affinity for natural systems necessary to foster the next generation of environmental stewards. As children become exceedingly “plugged into technology” (Louv, 2008) they are becoming increasingly detached from the natural world around them. Place-based education gets students outside and connected to their communities and to the environment. Emphasizing hands-on, real-world learning experiences, place-based education helps students develop strong community ties and enhances students’ appreciation for the natural world (Sobel, 2004). This form of education stretches beyond traditional classroom walls and welcomes active
participation with local citizens, community organizations, and environmental resources. Place-based education asks “Where am I?” and “What is the nature of this place?” Sobel describes place-based education as “the antidote to the not-thinking about the Earth common in many schools” (Sobel, 2004, p. 6).

The Place-Based Education Evaluation Collaborative (PEEC) outlines seven key principles to successful place-based education as the following:

1. Learning takes place on-site in the schoolyard and in the local community and environment, focusing on local themes, systems and content.
2. Project-based learning experiences contribute to the community’s vitality and environmental quality and to supporting the role the community plays in fostering global environmental quality.
3. Learning is supported by strong and varied partnerships with local associations, organizations, agencies and businesses.
4. Learning is interdisciplinary and custom-tailored to local opportunities.
5. Local learning serves as the foundation for understanding and participating appropriately in regional and global issues.
6. Place-based education programs are integral to achieving other educational and institutional goals.
7. Learning is grounded in and supports the development of a strong and personally relevant connection to one’s place. (Principles and Best Practices of Place-Based Education, 2003)
Place-based education is learning that is rooted within the context of everything that is “local” to a student’s surroundings. It includes the unique history, environment, culture, economy, literature and art of a particular place (Rural School and Community Trust, 2002).

More research into the effectiveness of place-based education is necessary to measure the long term impact on student learning. However, the guiding principles of place-based education are deeply rooted in the educational theory of Piaget. Piagetian theory stresses an emphasis on students' “intrinsic motivation" toward learning, noting clearly that children must be active to learn (Wadsworth, 1989). Place-based educators believe that by grounding education in the local community, students can see the relevance of what they are learning and as a result become more engaged in the learning process (Powers, 2004).

**Being a Locavore: Eating Close to Home**

Values and beliefs direct the choices we make and the resulting actions we take on a daily basis. Our daily choices become especially important when they affect our health, safety, and well-being. As members of a larger interconnected ecological system, it is important to understand how our decisions impact the health and well-being of our planet and ultimately ourselves through our dependency on it (Wilson, 1984). Our impact on the earth can be measured by the footprints we make on it. A look at our carbon footprint will reveal our primary mode of transportation, the amount of gas mileage our car gets, how efficiently we insulate and heat our homes, and how careful we are to take energy saving measures. A look at our food footprint will reveal how far our food has traveled from farm to fork, how dependent that food production is on conventional chemically burdened industrial agricultural, how packaging of that food relates to generating waste, and how much of our natural resources rich food ends up in landfills.
For consumers moved by healthier food choices and environmental concerns, edible gardens, farmer’s markets, and roadside stands offer locally produced goods which respond to the reduction of environmental impacts found in conventional packaging and transportation. On average, commercially produced foods travel 1,500 miles from "field to fork" (Vachta, 2010).

In the book *The Omnivore’s Dilemma: A Natural History of Four Meals*, (Pollan, 2006) the author calls attention to our nation’s disconnection from food and a subsequent “national eating disorder” that it has caused across the country. In setting the stage for the importance of our relationship with food Pollan states, “Eating puts us in touch with all that we share with the other animals, and all that sets us apart. It defines us” (pg. 10). An honest open understanding of our role in the food chain allows us to deepen our appreciation of the natural systems that make food production possible. The industrial food chain works hard to mask the realities of food production to keep consumers uninformed which ultimately limits our knowledge and connection to foods (Pollan, 2007). The author contends that our inability to recognize the intimate relationship we have with food and to understand our food from its point of origin creates a loss of common sense when making diet decisions. Pollan wants consumers to understand what they are eating, where it came from, and how it got to the table. By exposing poor food choices and the negative impacts they have on the health of individuals, society, and the environment, the author creates a space for contemplating the personal choices that we make about food on a daily basis. The premise of the argument is that the “best way to answer the questions we face about food choices is to follow the food chain all the way from the earth to the plate” (p.6).

Tips for reducing our food footprint and taking back “control of our food” can be found in another book written by Pollan titled, *Food Rules: An Eater’s Manual*. Here the author outlines
easy tips for changing the way we eat, as well as our perceptions about food. One tip Pollan gives encourages gardening and the growing of your own food. What could be more local than that? The rationale behind the thinking comes from not only a food footprint reduction standpoint. It also comes from the standpoint of understanding your connection to nature through control of your own food. Pollan writes the following:

What does growing some of your own food have to do with repairing your relationship with food and eating? Everything. To take part in the intricate and endlessly interesting process of providing your sustenance is the surest way to escape the culture of fast food and the values implicit in it: that food should be fast, cheap, and easy; that food is a product of an industry, not nature; that food is fuel rather than a form of communion with other people, and also with other species—with nature (Pollan, 2009, p. 135).

To reduce our food footprint, to eat with deeper appreciation and reverence for the food and natural systems that sustain life Pollan urges us to: engage in eating more local and seasonal foods; plant a garden; shop local farmer’s markets and natural food stores; seek out foods that have not been processed or traveled long distances to reach you; and to eat lower on the food chain (Pollan, 2009).

In the early 1900s, nearly 40 percent of Americans lived on farms, compared with only 1 percent by the year 2000 (Pirog, 2009). As an estimated 5 million people left their farms during WWII for higher paying jobs in the city, machinery replaced the farming workforce in the form of tractors, combines, and pickers (Hunt, 2002). The rapid adoption of machinery that occurred in American agriculture following WWII redefined the rate at which crops could be produced. A one acre field that had once taken a farmer almost two hours to till by horse or mule, could now
be tilled in 30 minutes by tractor (Hunt, 2002). With this time savings farmers could plant and manage larger acreages. This meant that fewer people were required to do the work and that the intimate relationship with nature through daily activities of planting, tending the crops and caring for the plow animals was severed. As food production also became increasingly commercialized and efficient following WWII by way of newly developed commercial food technologies, consumers became even further distanced from their sources of food.

In *The End of Food*, (Roberts, 2008) the author turns our attention to the modern food economy and reveals the system upon which we heavily rely to meet our most basic human need. The author urges consumers to take back control of their food from the deceitful marketing and economic model that has distanced us from the reality of the origins of our food. Understanding where our food comes from places us in a closer relationship to nature and the role we play in the food chain. By extinguishing the link between food consumption and food production, the industrial food system has pulled us away from the natural world and our fundamental connection to it (Roberts, 2008). This distance causes us to understand less, and care less about the processes and condition of the natural world. Roberts suggests “that in turning over the making of our food to others, in allowing the parameters and priorities of what we eat and how we think about it to be determined increasingly by a quite distant economic model, we have both encouraged the decline of food and lost something profound from our own lives” (Roberts, 2008, p. 321).

*Traditional Ecological Knowledge and Children*

Wild plant gathering has played an essential part in subsistence livelihoods all over the world. After WWII as more and more food products became available people began to pride themselves on their ability to afford store bought items. Gathering plants was associated with poverty and
something from which they wanted to break free (Grasser, Schunko, Vogel, 2012). Foraging and gathering became perceived activities of the rural and poor who through lack of other resources were forced to forage out of necessity (Thayer, 2006).

In small-scale agricultural communities and cultures reliant on foraging and farming for survival, children are given frequent opportunities to gain ecological knowledge through the variety of daily activities that take place within the social context of their community (O’Brien, 2010). The practice of cultivating foods, gathering wild foods, or hunting teaches the skills necessary to live in specific environments and builds in children an intimate understanding of the local landscape. Names of local plants and animals are lost when traditional activities of hunting, gathering, and farming are no longer practiced, but so too is the knowledge and context for understanding the relationships among the plants and animals and ecological processes within which these activities in nature take place (Nabhan, 1998). Differences in childhood knowledge of plants varies greatly between children from indigenous cultures and mainstream American children (Cooper, 2008) depending on exposure to hunting and gathering practices within the culture or family.

Younger generations gain their knowledge about the natural world differently than past generations and it is believed that this is affecting the breadth and depth of what today’s youth know about nature (Cooper, 2008). Culturally and environmentally important ecological folk knowledge is being lost in developed societies as children’s direct exposure to natural, wild spaces continues to diminish. Experiences outdoors are being substituted by increased indoor time with exposure to the wild occurring through television and electronics (Nabhan, 1998).
Wild Edibles

For most of our human history, we have participated in the ancient activity of hunting and gathering as the only means for securing our food (Thayer, 2006). In *Forager’s Harvest*, Thayer cites foraging as the oldest occupation on Earth. Where for most of our human existence there was no other food chain. The foraging and hunting food chain was intimate and direct, moving a very short distance from “earth to plate.” In the author’s opinion, nothing binds us to the Earth and builds such an awareness of the environment as surely as the ancient art of foraging. “It is not mere observation of, but rather participation in the phenomena of nature that brings us to our greatest understanding of our place in the mosaic of life” (p. 2).

As our traditional hunting and gathering knowledge became less crucial to our survival with the invention of farming and cultivation of plants, our need for retaining that traditional knowledge became less necessary. What we forget however, is that the produce we eat today, is the direct descendent of a wild plant-ancestor from the past. As we became better skilled in breeding plants for their most desirable characteristics (color, size, sweetness) we unknowingly bred many of the nutrients, minerals, and fatty acids out of them (Robinson, 2013). Wild plants are nutritionally richer than cultivated plants. One example is a common wild edible often found in urban areas growing up between cracks in the sidewalk, or in vacant lots. This often overlooked "weed" is called purslane. Purslane ranks top of the list for plants high in vitamin E and essential omega -3 fatty acids. It provides six time more vitamin E than spinach and seven times more beta carotene than carrots. It is rich in vitamin C, magnesium, riboflavin, potassium and phosphorus (Robinson, 2005). Purslane is crunchy, mildly flavored and can be eaten raw by adding to a salad. It is an easily found, yet easily overlooked wild edible.
**Teaching Children to Cook**

Over the past century a major shift has been taking place regarding our food choices and practices across North America (Engler-Stringer, 2010). There is concerned discussion surrounding the effects of our tendency to not cook at home anymore and our loss of food preparation knowledge and skills. In westernized societies, centuries of cooking and food knowledge are rapidly being lost as America moves from one generation to the next. Historically, our time honored cooking traditions began to fall dormant in the wake of WWII and the emerging 1950’s fast food legacy of prepackaged, processed and ready-made food stuffs. This age of convenience has eroded our respect for food origins and created in America a third generation of children who do not know how to make healthy food choices or how to cook fresh foods at home (Oliver, 2010). Many factors contribute to the trend in fewer home cooked meals and our willingness to have a hand in our own food preparation. Competing time demands, busy schedules, a lack of adequate cooking knowledge and an increased reliance on quick, easy ready-made foods all play a part in the decline of home cooking (Herbert et al, 2014). Factors that further influence whether individuals and families will use fresher ingredients to cook at home and eat healthier meals include: limited cooking and nutrition knowledge, attitudes and beliefs about food preparation, and enjoyment and satisfaction with the cooking experience itself.

Cooking at home and in school is an important part of a child’s personal life skill development. Children who develop basic cooking skills and nutritional knowledge are more likely to make healthier food choices later in life. Children carry these new found skills through to adulthood, and there is evidence to suggest that informed nutritional awareness and increased ability in food preparation and cooking skills helps individuals to make healthier choices in their diets (Fisher, Nicholas, Marshall, 2011).
Curriculum Design: Understanding by Design

The curriculum design process that I will be using to develop Growing in This Place follows the guiding principles found in Understanding by Design (Wiggins & McTighe, 1998). Developed by nationally recognized educators Grant Wiggins and Jay McTighe, UbD provides educators with a process for curriculum planning that works in a three-stage backward planning direction. The “backward design” requires educators to delay the planning of classroom activities until goals have been clarified and authentic assessments designed in order to avoid activity oriented teaching in which little purpose for the unit is given. A goal of UbD is to keep the end result in mind as educators work to build coherent and aligned unit plans. UbD emphasizes the importance of identifying the Big Ideas and Essential Questions to get at the heart of desired learning outcomes. UbD holds that the primary goal of education should be the development and deepening of student understanding and that students best reveal their understanding when they are provided authentic opportunities to explain, interpret, apply, empathize and self-assess (Wiggins & McTighe, 1998). The purpose behind the Understanding by Design process is to help educators clearly communicate learning targets, create authentic assessments of student understanding, and develop meaningful and engaging learning activities (ASCD, 2012).

Conclusion

Exploring the topics of childhood development and nature, place-based education, eating locally, and children’s traditional food and cooking knowledge have all led me to conclude that there is a need for expanding children’s food education to include nature as the point of origin for all food. Gathering and preparing wild edibles connects us to the Earth and establishes our intimate relationship with it. Younger children in their developing relationship with nature need opportunities to simply get out and explore nature (Sobel, 1996). Foraging for wild edibles gets
kids outside, engaging with nature as they search and discover not only the wild plants they are seeking, but also any unexpected appearances of nature’s many living systems that reveal themselves along the way. With place-based education’s emphasis on the questions “Where am I?” and “What is the nature of this place?” (Sobel, 2004, p. 6), getting kids outside investigating their local environment in search of edible wild plants, becomes a way for children to bond with the outdoor spaces they live within. The importance of eating locally as outlined by the discussion of industrial agriculture and commercialized foods role in obscuring our relationship with food, confirms my personal commitment to help children understand that there are shorter food chains that can be selected in making one’s diet choices. The literature review surrounding food education and the importance of cooking with children in developing life skills that will move them toward greater food independence as adults, affirms the purpose behind the recipes portion of Growing in This Place.
CHAPTER 3

METHODS

Overview

The purpose of this capstone project is to build in children a greater understanding of where they fit in the food chain and what it means to eat locally, as well as build an appreciation for what naturally occurring wild edibles grow around them. This project is grounded in place-based educational theory and seeks to place children directly in their local natural environments engaging with nature through discovery and wild foraging. This curriculum resource guide can be used in conjunction with any existing schoolyard gardening curriculum to extend understanding of local food chains to include wild edibles. Chapter three works to discuss the methods used to design Growing in This Place, the rationale behind the curriculum resource, process for developing the guide, setting and participants, and finally, an outline of the contents. One driving question for the project is, “What do children actually know about food chains and where they fit in?” I believe it is important to revive our nation’s food knowledge even at the most basic level, by providing children and their adult companions simple tips for gathering wild edibles and preparing recipes for eating and enjoying them together. In an effort to root kids in their own surroundings by deepening their sense of place another guiding question for this project is “What are some simple things that kids could know about where they live and what grows naturally around them that would enrich their sense of place?” With place-based educational principles as the compass for this project, my hope is to share with children the joy of discovery that awaits them right out their own backdoors through building a basic understanding of some common wild edibles growing around them.
**Rationale**

Research suggests that there is an increasing loss of traditional ethnobotanical and ecological knowledge in children when measuring what they know about nature as compared to what their parents and grandparents know (O’Brien, 2010). This project seeks to reawaken traditional plant knowledge through actively engaging children in identifying, harvesting, and preparing wild plants. Because children ages 4-11 build their sense of place in the natural world closer to home than older children (Sobel, 1996), this resource guide emphasizes common wild edibles that can be found in most backyard and schoolyard wild spaces.

**Process**

The process used to develop this resource is based on the guiding principles found in Understanding by Design in which curriculum design flows in a backwards direction from culminating activities and desired results to the bigger ideas, essential questions and overarching understandings. The purpose behind the activity of gathering and cooking wild plants is to directly teach children where wild foods come from and how to prepare wild edibles for eating. Foraging is the shortest and most intimate food chain there is (Pollan, 2006). To harvest and prepare food directly from nature binds us to the process and clearly reveals our place in the food chain (Thayer, 2006). *Growing in This Place* is very much a hands-on activity driven resource that requires children to actively engage in harvesting and preparing wild foods, however, the content does not lose sight of the purpose behind the activities. “Big Ideas” and “Essential Questions” (Wiggins & McTighe, 1998) driving the lessons are found throughout the outline of the guide. A good portion of assembling a common backyard edible wilds list into a usable place-based curriculum companion will require in depth research and evaluation of suitable wild plants for safe consumption. Many of the plants appearing on the list will be harvested,
prepared, and taste tested by myself. Several major edible wilds resources will be consulted in
the finalization of the wild edibles plant list: *Stalking the Wild Asparagus*, (Gibbons, 1962), *The
Forager’s Harvest*, (Thayer, 2006), and *Abundantly Wild*, (Marrone, 2004) will be books
referenced heavily throughout the research. The wild edible species selected for this project do
not have "look-alikes" that are poisonous. All of the selected plants are easily recognizable and
have distinguishable characteristics that make them difficult to confuse with other plants. The
guide is organized by seasons to allow for appropriate timing of wild-crafting activity. This will
help direct when to hunt for particular plants and their edible parts as they become seasonally
ready for harvesting.

*Setting and Participants*

This curriculum guide is written for use by both formal and informal educators; parents, club
leaders, and/or naturalists and is meant to be used in alignment with the environmental
development stages of children ages four to eleven (Sobel, 1996). The ideal setting is outdoors
teaching with nature as a guide, but the curriculum companion could be used indoors with
previously harvested plant samples. The recipe portion of the guide will require access to
cooking utensils, equipment and facilities. The plant species identified in this companion guide
are commonly found in backyards, schoolyards, and public wild spaces. So, truly any outdoor
area with some “weeds” growing in it could suffice. Chances are there is something wild and
edible growing in most outdoor spaces. Guidelines and cautions for foraging are shared in the
guide that help teachers and parents avoid natural spaces that may have been contaminated by
chemical treatments and/or pet droppings. The setting is somewhat dependent on an adult
checking out the natural area’s suitability before using it in foraging activities.
Guide Outline

Part 1 – Growing in Minnesota
Big Idea: Understanding Minnesota's growing season

Essential Question: What seasonal conditions in Minnesota affect the growth of plants?

- Weather/Climate/Rainfall
- Hardiness Zones
- Phenology

Part 2 - Eating Close to Home
Big Idea: Understanding your food footprint and how to eat locally

Essential Question: To eat more locally, what edible wild plants grow right out your own backdoor?

- Understanding Food Miles
- My Place in the Food Chain

Part 3- Plant Parts We Eat
Big Idea: Plants have a variety of edible parts

Essential Question: What plant parts do we eat?

- Not all parts are edible
- Seasonally eating the right parts (Which and When)

Part 4 – Eating in the Wild

Big Idea: Nature provides wild foods that often go unnoticed and are not harvested to be eaten.
Essential Question: What wild plants grow around me that are edible?

- Foraging Guidelines
- Local Wild Edible Plants – Profiles & Identification
  
  Dandelion
  Plantain
  Wild Violet
  Stinging Nettle
  Lambs Quarters
  Purslane
  Red Clover
  Curly Dock
  Common Milkweed
  Sumac
  Chokecherry
  Acorn
  Wild Plums
  Jerusalem Artichokes

Part 5 - Wild Edible Recipes

This portion will be determined after researching selected wild edibles on the plant list.
Conclusion

Chapter three defines the setting and participants that this guide is written for, as well as the methods to be used in the development of the project. The chapter also outlines the main concepts and content that will be incorporated into the wild edibles guide to best prepare novice forager's for success in the field of wild-crafting.

Chapter four is the actual wild edibles guide. It begins with basic background information on Minnesota's growing conditions in an attempt to build in the reader a sense of place. It goes on to discuss what it means to eat close to home, understanding food footprints, and our role as humans in the food chain. Chapter four continues with a brief discussion of the "which" and "when" of plant parts and the seasonality of wild edibles. The bulk of Chapter four is the information necessary to harvesting fourteen fairly common wild edibles found in Minnesota. Here, foraging guidelines, plant profiles, identification, and harvesting techniques are shared to ensure wild-crafting success. Growing in This Place closes with recipes that call for the wild edible ingredients listed in the guide to be used intimately in the act of cooking and eating the fruits of the wild-crafting labor.
Growing in Minnesota

Minnesota's growing season is affected by our climate. Because wild edibles are not cultivated and protected by human hands, they are adapted and specialized to thrive in particular areas and under specific conditions. The climate of Minnesota is something that makes this state truly unique. The climate of Minnesota is typical of a continental climate, with hot summers and cold winters. Minnesota's location in the Upper Midwest allows it to experience some of the widest variety of weather in the United States, with each of the four seasons having its own distinct characteristics. The location of Minnesota near the center of North America results in a climate characterized by an extreme range of temperatures between seasonal highs and lows. Minnesota's climate is the interaction and interplay of multiple factors that include the following: location in North America, the tilt of the Earth, and prevailing winds. Minnesota's central location in North America contributes to the diverse and varied weather patterns that produce our four very distinct seasons. The cool temperatures during the winter season are attributed to our proximity to the 49th parallel which gives us our northern boreal forests and winter average lows in International Falls of 2.2 degrees Fahrenheit for the month of January. Our proximity to the eastern United States give us our eastern deciduous woodlands and more moderate temperatures. Minnesota's location near the western states gives the state our tallgrass prairie remnants and hot summer days. Average summer temperatures in Minnesota range from 59 degrees Fahrenheit in the upper northeast corner of the state to 71 degrees Fahrenheit in the lower southwest corner. Average temperatures in Minnesota decrease 2-3 degrees for every one hundred miles traveled.
north (Tester, 1995). Our changes in season are attributed to daily changes in temperature which is the direct result of how much solar radiation reaches the Earth's surface. It is the tilt of the Earth that dictates the sunlight's strength throughout the seasons in Minnesota.

The third player in the interplay of factors influencing Minnesota's climate is prevailing winds. Our prevailing winds affect both the temperatures and rainfalls we experience in Minnesota. In summer, the winds bring warm, moist air up from the Gulf of Mexico and cool, dry air down from Canada. When the two jet streams collide the result is weather characterized by high humidity, thunderstorms and/or tornadoes. During the winter season when the jet stream shifts south, Minnesota experiences the blasts of cold Arctic air that give us our occasional legendary status as the coldest spot in the nation.

Seasonal temperatures and rainfall directly affect what plants are able to grow at any given location and time in Minnesota. As would be expected, the southern portion of the state will reach higher temperatures than the northern portion of the state during all seasons. Minnesota precipitation varies in terms of annual averages and daily extremes. Precipitation rates vary across the state with the major portion of the state falling within the 27”-36” mark in the eastern two thirds and 21”-26” in the western third of the state (Figure 2). It is the combination of temperature and rainfall that dictates Minnesota's natural pattern of vegetation.

The amount of rainfall that occurs during the growing season is more important to natural communities than the total amount of rainfall per year. In Minnesota 65% to 75% of the total annual precipitation falls within our optimum growing season between May and September (Tester, 1995). Understanding your region's biomes, frost free dates, plant hardiness zones, and annual precipitation will help you understand when certain types of wild plants could be growing in your area.
Few Minnesota wild areas have been left undisturbed by human interference. A look at what was growing before European settlement gives us a glimpse into the natural vegetation that historically, called Minnesota home. What we find growing around us today may not be evidence of what was naturally growing here previous to European settlement. When considering wild edibles, note that growing in the wild does not equate to being native. Many wild edible plants found today were brought here by travelers from other continents hundreds of years ago.

*Eating Close to Home*

Values and beliefs direct the choices we make and the resulting actions we take on a daily basis. Our daily choices become especially important when they affect our health and well-being. As members of a larger interconnected ecological system, it is also important to recognize how our decisions impact the health and well-being of our planet. Our health and the health of the Earth are inextricably woven together by the impact we have on our planet and our dependency on it. A simple look at food chains reveals our dependency on natural systems. In an ecosystem, plants and animals all rely on each other to live. This dependence is sometimes described using a food chain or a food web. A food chain illustrates a basic principle of survival for all living systems, the need for energy. Every living plant and animal must have energy to survive. All food chains start with energy from the sun. Plants rely on the soil, water, and the sun for energy. Animals rely on plants as well as other animals for energy. Sitting at the top of the food chain, humans rely on everything else below us in the chain for our survival. An open honest understanding of our role in the food chain allows us to deepen our appreciation of the natural systems that make our food and survival possible.

Our impact on the Earth can be measured by the footprints we make on it. A look at our food footprint will reveal how far our food has traveled from farm to fork, how dependent that food
production is on conventional chemically burdened industrial agricultural, how packaging of that food relates to generating waste, and how much of our natural resources go into the production of that food. Considering how we participate in the food chain allows us to make informed decisions about our food choices and ultimately our food footprint on the Earth. The distance that the average commercialized food product travels is 1,500 miles. The distance food travels is measured in food miles. Food miles are defined as the distance a food product travels during its complete journey from producer to consumer. Eating locally minimizes food miles traveled. Eating locally translates to making the effort to eat closer to home. The definition of a "locavore" is a person whose diet is primarily food that originated within a 100 mile radius of their home. Foraging for one's own food (or at least a portion of it), allows a person to take part in an efficient and short food chain that requires fewer food miles and leaves a smaller footprint on the Earth. Wild edibles grow everywhere, can be easily found right out your own door, and place you in a very local food chain.

Plant Parts We Eat

Not every part of an edible plant should be eaten. An example of this is rhubarb. Rhubarb is not native to North America nor is it considered a wild edible. However, it is a good example of a plant that has edible parts and nonedible parts. The stalk of the rhubarb plant is edible and the roots have been used medicinally in China for thousands of years. The leaves on the other hand, are toxic and should not be consumed. When foraging for wild plants it is important to know which parts of the plant are edible. Commonly, the main parts of plants that are eaten are roots, stems, leaves, flowers, seeds, and fruits. Consulting a wild edibles field guide as you forage will aid in identifying which part of the wild plant is meant to be eaten.
Depending on the season, different parts of the plant are eaten at different times. Plants put their energy into different parts, at different times of the year. Edible calories tend to be concentrated in the parts of the plant that energy is being directed to at that particular time. Understanding the "which" and "when" of wild edibles will ensure that the tastiest and most nourishing parts of the plant are harvested at the right time. Characteristics of each wild plant are described in the plant profiles section of this guide. It is highly recommended that at least two to three resources be used when identifying plants intended for consumption. Because this guide book is written for beginning adult foragers working with young children, the plants selected have easily identifiable characteristics and do not have toxic "look-alikes". It is also helpful to have an understanding of common terminology used to describe identifiable plant characteristics. Illustrations depicting basic plant terminology can be found and used to describe plant parts for identification purposes in the glossary section of *The Forager's Harvest* (Thayer, 2006, p.348-353).

*Eating in the Wild*

Most wild foods do not have cultivated counterparts and therefore possess their own unique flavors, colors, and textures. It is a mistake to view an edible wild plant as a good substitute for a recipe ingredient that calls for a cultivated plant. Although a tuber from the Jerusalem artichoke can be roasted or mashed in ways similar to a potato, it is not a potato and cannot be expected to taste or have the same texture as one. Having their own unique flavors and textures, wild edibles need to be enjoyed simply for what they are.

Timing when to harvest a wild edible depends on paying attention to "Nature's Calendar" and the phenological events that unfold with every season. The wild foods that are available over the
course of a year change frequently. Phenology refers to the timing and sequence of nature's biological events. Paying attention to seasonal events and changes will help you begin to recognize the signs for when a particular wild food will appear.

Foraging Guidelines - adapted from *Abundantly Wild*, (Marrone, 2004)

- Remember that just because a plant has edible parts, does not mean that the whole plant is edible. Edible parts of a plant may be inedible during some stages of growth or during some seasons.
- Harvest in healthy places away from busy roads, polluted water, chemically sprayed areas, and pet droppings.
- Keep the health of your wild resource in mind. Harvest only 10% of each patch that you find and bypass any small patches to ensure future harvests.
- Ask permission before foraging on private land and know the rules about foraging on public lands.
- When you try a new wild edible, always eat it in moderation.

Foraging reference guides that come highly recommended in the field of wild edibles include the following titles:

*The Forager's Harvest*, (Thayer, 2006)

*Stalking the Wild Asparagus*, (Gibbons, 1962)

*Abundantly Wild*, (Marrone, 2004)

*Edible Wild Plants of the Prairie*, (Kindscher, 1987)

*Guide to Wild Foods and Useful Plants*, (Nyerges, 2014)
Edible Wild Plants: Wild Edibles from Dirt to Plate, (Kallas, 2010)

The 5 Steps of Identifying Edible Plants - adapted from Forager's Harvest, (Thayer, 2006)

1. Tentative identification: locate what you think is a certain plant. Never identify a plant by one single characteristic. Make careful observations about key characteristics.

2. Comparison: compare the plant to a reliable reference, carefully, thoroughly, and critically. Use both the description and illustration/photograph to confirm your finding.

3. Double and triple check: compare to several more reliable references. Do not mentally force your plant to fit the description.

4. Locate more: gather more specimens until you can effortlessly recognize the plant. If you need a book to identify the plant every time then you may not be ready to eat it.

5. Assess contradictory confidence: Do you really have it? Are you sure? Are you willing to present your finding to a group of trained foragers or botanists? Under no circumstances is it acceptable to taste or eat any part of an unidentified plant!
Dandelion (*Taraxacum officinale*)

**Season:** Spring through fall

**Parts used:** light green young leaves, flower heads, root. Always discard stems as they contain a bitter milky sap.

**Description:** Long deeply toothed leaves that grow in a basal rosette. A single hollow stem with a purplish tone supports one brightly colored yellow flower cluster.

**Harvest:** Pick young green leaves in early spring as an addition to any leafy green salad. Pick flower heads when they are fully opened to avoid picking up any unwanted bugs hiding inside a closed flower head.

Plantain (*Plantago major*)

**Season:** Spring and fall

**Parts used:** young early leaves, raw or cooked; seeds dried

**Description:** Rounded, heavily veined leaves, generally 2 to 4 inches long growing in a basal rosette. In late spring the plant develops a skinny flower spike that grows to 8" in height containing vertical rows of tiny seeds up and down the spike.

**Harvest:** Pick young leaves in early spring to be added to salads. As summer progresses leaves become too tough and woody to enjoy. Harvest seed heads in late fall after they have turned brown. Toast them lightly in a pan and use much like you would use toasted sesame seeds.

[Link to Edible Wild Food website](http://www.ediblewildfood.com/broadleaf-plantain.aspx)
Wild Violet *(Viola spp.)*

**Season:** Spring

**Parts used:** Flowers, raw, candied or infused; leaves, raw or cooked

**Description:** Wild violets come in over 100 different varieties. Although they all are edible, some are more palatable than others. The common blue violet is the most harvested. Flowers have 5 petals and a symmetrical butterfly shape with varying hues of blue. The stem is bent at the point where the flower is attached giving the flower its characteristic drooping appearance. Leaves are green and heart shaped.

**Harvest:** Only harvest the flowers of the violet. Leaves are edible but because the leaves are easily confused with other non-edible plants it is important to stick with the sure bet if you are a beginning forager. Violet flowers can be used to garnish salads or flavor vinegars and syrups. Pick them fresh for salads or freeze them while you continue to collect enough of the desired quantity for an infused vinegar or syrup recipe.

http://www.ediblewildfood.com/wild-violet.aspx
**Stinging Nettle** (*Urtica dioica*)

**Season:** Spring through fall

**Parts used:** young leaves and shoots, cooked (nettle leaves are often dried)

**Description:** Stinging nettle has toothed and somewhat course long narrow leaves that grow opposite each other on a hollow squared stem. Stinging nettle can reach heights of 5 to 6 feet tall. The plant produces tiny clusters of light green flowers in the leaf axils.

**Harvest:** Spring is the best time for harvesting nettle leaves. Leaves can be dried and used for tea or as a nutritious addition to soups and stews. Nettle does indeed sting! Wear protective gloves and long sleeves when collecting nettle. Once the plant begins to dry or is cooked it loses its stinging properties.


**Lamb's Quarters** (*Chenopodium album*)

**Season:** Spring through fall

**Parts used:** leaves, raw or cooked; seeds ground as flour substitute

**Description:** Distinctive triangular leaves with rounded teeth that resemble the ribbed foot of a goose give this plant its common name goosefoot. Leaves grow alternately on hairy stems that
appear grooved and have a reddish cast to the larger stems. This plant can grow to 2 feet tall. A
telltale sign of lamb's quarters is the silver-powdery coloring on the underside of the leaves.
Lamb's quarters does not have a smell to it. If you pick a plant that you think is lamb's quarters,
but it has a perceptible odor, it is not the right plant.

**Harvest:** Pick in early spring when the entire stem and leaves are tender and edible. Later in the
season, pick just the young leaves at the top of the plant and leave the tougher stems. Pick from
areas that you are confident are free from contamination, as this plant readily absorbs toxins from
the soil. Avoid harvesting from busy roadsides or polluted waterways.


**Purslane (Portulaca oleracea)**

**Season:** Spring through fall

**Parts used:** leaves and stems, raw or cooked

**Description:** Stems are fleshy and reddish with plump paddle shaped leaves that grow in both
alternating and opposite patterns. Purslane creeps close to the ground and spreads out from the
center. The stems are smooth not hairy. If you find a plant that you think is purslane but it has
hairy stems, it is the wrong plant. Be careful when harvesting purslane that you don't mix spurge in with your harvest. The two plants often grow close together. It is easy to tell them apart so double check that you did not accidentally gather spurge with your purslane. Spurge is toxic!

**Harvest:** Purslane is delicious raw in salads, stems and all. Harvest from late spring in to the fall, choosing only the youngest leaves toward the tip of the stems as the season progresses. Wash purslane several times as it has a tendency to hold grit easily.


**Red Clover** (*Trifolium pratense*)

**Season:** Spring and summer

**Parts used:** flowerheads
Description: Round ball-like flower heads ranging from pinkish red to purplish red and averaging ½ inch to one inch in diameter. The three part leaves of clover are marked with a distinguishing white chevron design.

Harvest: Pick flowerheads to use as a garnish in salads. Dried flowerheads work nicely in teas. Harvest, dry, and brew much like directions for chamomile tea.

http://www.ediblewildfood.com/red-clover.aspx

Curly Dock a.k.a. Yellow Dock (*Rumex crispus*)

Season: Spring and summer

Parts used: young leaves, raw or cooked; stalks, cooked; seeds dried and ground for flour

Description: A herbaceous perennial plant that grows to 3 feet tall. Curly dock has a stout taproot surrounded by long narrow leaves with rippled edges. When mature, leaves take on a reddish color, and masses of tiny green flowers form at the top of the central stem.

Harvest: Young leaves in early spring when they are still tender and mildly flavored. Eat raw in small amounts as curly dock contains high levels of oxalic acid. As the season progresses the leaves and become less palatable. The stalks can be peeled, cooked and eaten. Cut the seed head
clusters in late summer after they have turned brown and dried. Curly dock seeds can be ground and used to make a flour for baking.


Common Milkweed (Asclepias syriaca)

Season: Spring through summer

Parts used: shoots, flower buds, flowers, and seedpods cooked

Description: Common milkweed is a tall perennial herb that can grow from 3 to 6 feet tall. The leaves grow in opposite pairs and are generally 4 to 9 inches long. Milkweed has broad, thick, smooth edged leaves with tightly packed buds that open into clusters of fragrant flowers. Flowers become the large seed pods holding the silken fibers that milkweed is so well known for. The sap from milkweed is a milky white type of latex.

Harvest: Harvest milkweed pods when they are between 1 -1 ½ inches long, bright green and still tender. Because milkweed shoots can be easily confused with dogbane by the foraging
novice, it is only recommended to harvest milkweed blossoms and pods that are not easily mistaken for another inedible plant. Both the flower buds and pods make a nice ingredient addition to a stir-fry, soup, rice, and/or casserole.

http://www.wildflower.org/gallery/species.php?id_plant=ASSY

**Staghorn Sumac** (*Rhus typhina*)

**Season:** Summer

**Parts used:** bright red flower cluster (drupe), steeped as a beverage

**Description:** Staghorn sumac is a native, deciduous, large shrub that can grow to a height of 35 feet. It has alternate, compound leaves, 16 to 24 inches long. The leaflets are narrowed or rounded at the base and sharply pointed at the tip with finely serrated edges. The leaflets are dark green and smooth above, and pale beneath, except along the midrib. Compact clusters of greenish-yellow flowers bloom midsummer. Fruits mature from midsummer to early fall. The fruiting head is a compact cluster of round, bright red, hairy fruits called a drupe.

**Harvest:** Cut drupes when they are bright red in color, before a heavy rainfall, for the best beverage color and flavor.
**Chokecherry** (*Prunus virginiana*)

**Season:** Summer

**Parts used:** fruit, cooked for syrups or jellies

**Description:** A large, thornless, deciduous shrub or small understory tree, that can grow 20-30 feet tall and is often found in thickets. The bark is thin, dark gray and fairly smooth with wavy ridges running lengthwise. Leaves are simple, alternate, and ovate with finely serrated edges. Dense clusters of white flowers are followed by red fruit ripening to dark purple from late summer to early fall. Each cherry contains one large oval stone. Chokecherries are astringent and sour especially when raw. The fruit can be made into preserves and jelly.
**Harvest:** Pick fruits midsummer to early fall when they begin to turn from dark red to purple.

http://www.wildflower.org/gallery/species.php?id_plant=PRVI

**Bur Oak Acorn** (*Quercus spp.*)

**Season:** Fall

**Parts used:** nutmeats, leached and cooked

**Description:** Bur oak is a large, deciduous tree with a wide, open crown. Usually wider than tall, the tree can exceed 100 ft. in height and width. The massive trunk supports heavy, horizontal limbs and rough, deep-ridged bark. Leaves up to 9 inches long with a central midrib from which branch veins lead into rounded lobes. Lobes separated by deep sinuses reaching, in some cases, to within 1/2 inch of the midrib. Lobes beyond the midpoint of the blade wavy margined and longer and broader than those toward the base. Acorns large, up to 1 1/2 inches broad with 1/4 to more than 1/2 of the acorn enclosed in the cup. Cup with coarse scales and a fringed margin.
**Harvest:** Collect acorns in late summer after they have fallen to the ground. Let acorns sit and dry for several days before, shelling and leaching the nutmeats. The process for how to remove tannins from acorns is fully outlined in *Abundantly Wild*, (Marrone, 2004, p. 268-270). The process is very labor intensive and requires a great deal of time. Research the process before collecting acorns to make sure it is something you really want to try!

![Acorns](image)


**American Wild Plum** (*Prunus Americana*)

**Season:** Fall

**Parts used:** ripe fruits, raw or cooked

**Description:** A thicket-forming shrub-like tree with short trunk, and scaly, black bark. American wild plum is a small, understory tree growing to 35 ft. with fragrant, showy white flowers that grow in flat clusters that are present before the leaves in spring. The fruit that follows ripens to a shiny, bright red in late summer to early fall. Fall foliage ranges from bright red to pale yellow.

**Harvest:** Pick when the fruit is bright red and before it begins to turn purple. Excellent fruit for syrups, jams, and jellies.
http://www.wildflower.org/plants/result.php?id_plant=PRAM

Jerusalem Artichokes (*Helianthus tuberosus*)

**Season:** Fall

**Parts used:** tubers, raw or cooked

**Description:** Common throughout North America, Jerusalem artichokes resemble miniature sunflowers, with their bright yellow petals and dark colored centers. It is a perennial plant that reproduces by seed and by fleshy rhizomes which bear small, potato-like tubers. The leaves are simple, rough-hairy, oval to lance shaped, with coarsely toothed edges. Mature plants can reach 6 feet tall.

**Harvest:** Harvest the tubers any time after the first frost. You may need to mark the plants in late summer so that you can remember where they were located as the flowers and leaves change drastically after the cooler temperatures set in. Gently dig up tubers and brush off dirt, store in cool dark place much like a root vegetable.
Wild Edible Recipes by Season

Spring

Dandelion & Plantain Wild Greens Salad

1 cup washed and torn young dandelion leaves
½ cup washed and torn young plantain leaves
4 cups washed organic baby salad greens
1 small apple thinly sliced
½ cup shredded swiss cheese
½ cup sliced almonds

Add poppyseed dressing to taste

Wash and tear wild greens. Mix wild greens, baby salad greens, apple slices, almonds, and swiss cheese together. Add poppyseed dressing, lightly toss, and serve.

Wild Violet Infused Vinegar

Taken from Edible Wild Plants for Beginners (Althea Press, 2013, p.215)

¼ cup washed wild violets
1 cup champagne vinegar

Carefully push violets into a glass bottle trying not to bruise or damage the flowers.
Slowly pour vinegar into the bottle. Completely submerge the violets. Cap the bottle. Gently swirl contents every few hours for one day. Store vinegar in the refrigerator for up to one month.

This vinegar is delicately flavored and makes a wonderful addition to salad dressings.
Nettle & Peppermint Tea

2 teaspoons dried nettle leaves
2 teaspoons dried peppermint leaves
8 ounces water
honey

Put the herbs in a cup. Pour boiling water over herbs and steep for 5-8 minutes. Strain and cool.
Add honey to taste and serve hot or cold.

Dandelion Fritters

1 cup biscuit mix
pinch of cinnamon
1 cup milk
1 tablespoon honey
½ inch oil in skillet
4 cups washed dandelion heads without stems (stems are bitter)

Mix together the biscuit mix, cinnamon, milk, and honey. Heat oil in skillet until it sizzles when a drop of batter is dropped into it. Dip dandelion flowers into mix and drop in to hot oil head first. Fry until golden brown. Turn with tongs and brown other side. Drain on paper towel and serve hot with honey mustard dipping sauce.
**Lamb's Quarter Quiche**

Preheat oven to 450 degrees

9" piecrust

6 strips cooked thick cut bacon

1 onion finely chopped

1 cup Swiss cheese grated

¼ cup grated parmesan

1 cup chopped fresh lamb's quarters

2 tablespoons dried stinging nettle

4 eggs

1 cup cream

½ cup mayonnaise

¼ teaspoon nutmeg

½ teaspoon salt

¼ teaspoon black pepper

Bake piecrust five minutes in 450 degree oven. Sautee onion until transparent. Place onion, cheeses, bacon, and lamb's quarter leaves in piecrust. Combine eggs, cream, nutmeg, nettle, salt, and pepper. Beat mixture and pour into piecrust. Bake 15 minutes at 450 degrees. Bake 15-20 minutes more at 350 degrees F. until a knife inserted near the center comes out clean. Serve warm with fresh fruit as a garnish.
Summer

Purslane Smoothie

1 ½ cups chopped purslane
1 tablespoon lemon juice
1 banana
6 strawberries
½ cup vanilla yogurt
honey to taste

Blend all ingredients until smooth. Serve immediately.

Sumac-ade

Adapted from Forager’s Harvest, (Thayer, 2006, p. 257-258)

6-8 clusters of bright red sumac berry heads (brownish tint indicates that the cluster is past its prime flavor)

Cold water

Pack berry heads tightly in to a pitcher. Pour cold water over clusters, crush lightly with wooden spoon and let sit in cool place for several hours. Strain with cheesecloth before serving. Add honey or pure maple syrup to taste. Serve over ice.

Pickled Milkweed Buds


Brine:

2 cups milkweed buds
2 cups water
4 tablespoons Kosher salt

Pickles:
1 cup white wine vinegar
½ cup water
2 tablespoons cane sugar
2 tablespoons thyme
4 bay leaves

Making the brine:
Place the milkweed buds in a heat resistant bowl. Boil the water and add the salt, stirring until dissolved. Pour the saltwater over the milkweed buds, covering them completely. Cover when cool and refrigerate for three days.

Making the pickles:
Boil the vinegar, water, sugar, thyme, and bay leaves together. Drain the brine from the milkweed buds. Place the buds in a glass canning jar and cover with the hot vinegar solution. Place lid on the jar and to cool before transferring to the refrigerator. Refrigerate for three days before eating.

Chokecherry Syrup

Taken from *Abundantly Wild*, (Marrone, 2004, p. 111)

1 cup juice from wild chokecherries
1 cup sugar
3 tablespoons corn syrup
Juice preparation:

In stainless steel pot combine 1 quart chokecherries with enough water to come just below the surface of the chokecherries (about 1 ½ cups). Bring to a boil. Cover and reduce heat; simmer for 30 minutes. Stir occasionally, taking care not to crush the chokecherries. All cherries (domestic included) contain small amounts of a cyanide forming compound in the pits. Remove from heat and set aside to cool. Place a wire mesh strainer, lined with cheesecloth over a bowl. Pour cherries into the strainer and let drip for 20-30 minutes.

Making the syrup:

In stainless steel pot combine chokecherry juice and sugar. Heat over medium-high heat, stirring constantly until sugar dissolves and mixture begins to boil. Lower heat to a gentle boil and add corn syrup. Cook for five minutes, keeping the temperature at a gentle boil. After five minutes remove from heat and pour into prepared canning jars. Place clean lids and bands on jars. Let cool before storing in the refrigerator.

Late Summer

Red Clover Iced Tea

10-12 dried Red clover flower heads

2 cups water

honey to taste

Place dried blossoms in a large cup. Pour boiling water over the flower heads and let steep for five minutes. Strain and add honey to taste. Let cool to room temperature. Pour over ice and serve with lemon garnish.
Curly Dock (a.k.a. Yellow Dock) Seed Crackers

Adapted from *Edible Wild Plants for Beginners*, (Althea Press, 2013, p. 157)

1 cup Dock Seed Flour

¼ cup toasted plantain seeds

½ cup Whole Wheat Flour

½ cup Rye Flour

¼ cup Parmesan cheese

1 teaspoon salt

Water at room temperature

Preheat oven to 375 degrees F.

Line a baking sheet with parchment paper.

Combine dock seed flour, plantain seeds, wheat flour, rye flour, and salt in a medium sized bowl.

Slowly add water until a sticky dough forms. Mix in parmesan cheese.

Dust a clean flat surface with flour. Roll out the dough as thinly as possible and cut into desired shapes. Transfer crackers to baking sheet and bake for 10-12 minutes or until crispy. Cool and store in airtight container for up to one week.
Acorn Pancakes

Adapted from Acorn Pancakes, Dandelion Salad and 38 Other Recipes, (George, 1995, p. 8)

1/3 cup wheat flour

1 cup acorn flour

2 ½ teaspoons baking powder

pinch of cinnamon

¾ teaspoon salt

1 egg beaten

1 ¼ cups milk

1 teaspoon pure vanilla

3 tablespoons butter

In a bowl, mix flours, baking powder, and salt. In another bowl mix egg, milk, and butter. Pour milk mixture into dry mixture and stir just enough to moisten dry ingredients. Spoon onto greased hot grill or skillet. Flip and turn. Serve with chokecherry or wild grape syrup.
Wild Plum Freezer Jam

5 cups wild plum pulp
3 tablespoons Fruit Fresh
7 cups sugar
2 packages Certo or Sure Gel
2 tablespoons lemon juice
1 tablespoon grated orange rind

Wash ripe wild plums. Slit and squeeze pits out. Put plums through fruit press to remove skins. Measure out 5 cups of plum pulp. Add Fruit Fresh and sugar, mix well. Let stand for 10 minutes until sugar is dissolved. Add Certo, lemon juice, and orange rind. Stir for 3 minutes. Put into freezer containers and let stand in refrigerator for 24 hours. Store in freezer.

Field Vegetable Stew

Adapted from Abundantly Wild, (Marrone, 2006, p. 39)

8 ounces pork sausage
1 onion chopped
1 small rutabaga peeled and chunked
2 medium turnips peeled and chunked
2 cloves garlic minced
¾ pound Jerusalem artichokes peeled and chunked
3 medium carrots peeled and chunked
2 cups chicken broth
½ teaspoon black pepper
½ teaspoon chopped oregano
½ teaspoon chopped thyme
¼ teaspoon rosemary leaves

Heat oven to 375 degrees. In Dutch oven, cook sausage, onion, and garlic over medium heat until the sausage is browned. Add root vegetables to Dutch oven, stir in salt, pepper, and fresh herbs. Heat contents to boiling then cover and place in oven for 1 hour. Serve with crusty bread and local cheeses.
Overview

In this final chapter of my capstone I revisit the purpose behind my research into wild edible plants and foraging in Minnesota and restate the questions that steered the direction of this project. A portion of this chapter looks back at Chapter 2 and the review of literature to describe what pieces of the review were instrumental in my learning and the development of the guidebook, *Growing in This Place*. Learnings from my wild harvesting and cooking are shared followed by where I intend to go from here as an educator. The chapter includes a heartfelt thanks to all of the grandmothers and great-grandmothers who worked tirelessly to provide sustenance for their families and a personal wish for the revival of traditional ethnobotanical folk wisdom across generations.

Purpose and Guiding Questions

My own love of nature and affinity for wild edibles, coupled with my personal goal to revive traditional folk knowledge within my own family, all came together to shape the purpose for developing this wild edibles guide. One goal of this capstone project was to build in children a greater understanding of where they fit in the food chain, what it means to eat locally, and to extend the definition of eating locally to include wild edibles. Another goal was to build a basic understanding of where wild plant foods come from and through the process of foraging create opportunities for children and their accompanying adults to genuinely bond with nature. Ideally, this foraging guide should be used by any person who wants to engage children in nature as they
learn about eating lower on the food chain. With several generations passing since the end of the era of small family farms and subsistence livelihoods, many people have lost their intimate connection to food. One guiding question for this project was, “What do children actually know about food chains and where they fit in?” In an effort to root kids in their own surroundings by deepening their sense of place another question emerged, “What are some simple things that kids could know about where they live and what grows naturally around them that would enrich their sense of place?” The final question driving the direction of this project was, "In teaching children about food, what are some basic skills that are necessary for creating a greater sense of food independence?" Through the literature review process several answers to the original inquiry questions presented themselves.

*Literature Learnings*

To answer the first question, "What do children actually know about food chains and where they fit in?" I would now look to the culture of the child. Children growing up in indigenous cultures know more about food origins than their mainstream population counterparts (Cooper, 2008). However, a child will only know as much as their parents or grandparents teach them about their culture of food. Names of local plants and animals are lost when traditional activities of hunting, gathering, and farming are no longer practiced (Nabhan, 1998). So too, is lost the knowledge of relationships between these plants, animals, and ecological processes within which these activities for obtaining food take place. A family's food habits and practices are the food education that child receives. America is entering its third generation of fast food consumption (Oliver, 2010). It is time to break this cycle and embrace a "slower food movement". Buy fresh
foods, cook at home, and teach your children how to cook simple recipes. Break the cycle of dependence on the drive-thru and commercially prepared, processed food.

To answer the second question “What are some simple things that kids could know about where they live and what grows naturally around them that would enrich their sense of place?” I included a brief overview of Minnesota's location, climate, rainfall, and growing season at the beginning of the guide to provide a basic understanding of Minnesota's growing conditions. Much of the information shared in this section about Minnesota was gleaned from the University of Minnesota publication, *Minnesota's Natural Heritage: An Ecological Perspective* (Tester, 1995). The area that I wanted to explore more to give the reader a broader sense of place was that of Minnesota's biomes. As I worked through it however, it became obvious that the subject of Minnesota's biomes was something larger than I had prepared for and it more than likely would require its own separate capstone study. It is merely mentioned in the guide as a suggestion for further understanding what naturally grows where in Minnesota. A young child's sense of place is based around areas that are close to home, their neighborhood and school. Remembering that, reminded me who my audience was for this project and just how broad their sense of place needed to be. Wild edibles grow readily everywhere and can be easily found in backyards, gardens, schoolyards, and local public spaces. What is growing naturally around young children is really just outside their door.

The third inquiry question regarding the basic skills children would need to move them toward a greater sense of food independence is one that this project did not investigate fully. However, harvesting, preparing, storing, cooking, and eating wild edibles with children simply through the act of "doing" these tasks in the kitchen, moves children toward greater future food independence (Oliver, 2010). Knowing how to follow a recipe, boil water, measure quantities,
and combine ingredients are all skills that make it easier for children to cook on their own in the future. Possessing a basic cooking skill set equates to less dependence on commercially prepared, prepackaged, and ready-made foods.

The two pieces from the literature review that I found to be most influential in this project both relate closely to the topic of food systems and the role we play in them. Reflecting on the literature review process, the common thread that continued to emerge for me was really about the literature that spoke to our role in the food chain and our relationships with food. Through reflecting on the literature written by Pollan (2006) and later by Thayer (2006), I realized that an unstated mission that grew out of this project, was to make more conscientious choices about food and to reconnect my reader's relationship with it. The Omnivore's Dilemma, (Pollan, 2006) resonated with me on many levels. Pollan's criticisms of commercial agriculture and the food industry made me cognizant of the need for greater control over my food consumption through more informed choice. The book affirmed for me the actions that my husband and I began taking several years ago when we started producing our own eggs, poultry and beef. The information shared about GMO's, hormones, and commercial animal agricultural practices caused us to seek out an alternative. We wanted greater control over what we were feeding ourselves and our family. Without fully understanding where our desire for greater food independence was coming from, we made the investment in time, energy, and money to start producing some of our own meat. The fact that we had the land and the willingness to work, allowed us to start the venture. Having a direct hand in our own food production put us in a very close relationship with our food and made us less dependent on the commercial food system. By discussing the importance of understanding our intimate relationship with food and the need for
understanding food from its point of origin, the author affirmed what I had already sensed but had not articulated for myself.

The second resource from the literature review that proved to be instrumental in the development of this project was *The Forager's Harvest* (Thayer, 2006). A book written from a perspective similar to that of Pollan's, Thayer holds the act of eating as something next to sacred. The author's professed love of foraging and frequently shared heartfelt thanks for the bounty that nature gives appeared throughout the book. I found Thayer's firsthand accounts of wild edibles to be inspirational. Each plant profile was carefully and artfully described using words that revealed a direct experience with the plant and not a scholarly review of it. One example of this descriptive phrasing appeared in the author's explanation of the flavor and texture of nannyberries. After artfully describing the color, shape, and surface texture of nannyberry fruit, the author went on to describe the inner texture and flavor of the berry. The description likens both the texture and flavor to something between a strange mix of banana and raisin. The first time I tasted one, I knew exactly what the expected texture and flavor was to be. Thayer was right on in describing the nannyberry! The author did not make that descriptive language up or copy it from another forager's publication. It came from direct experience with the berry. It is this firsthand experience with the activity of foraging that I tried to incorporate into my own work for this project by personally harvesting all of the wild ingredients and cooking most of the recipes.

Foraging is a "doing" activity. It is labor intensive and requires work. It is not merely observing nature. Foraging asks the participant to engage in many activities; moving, exploring, discovering, identifying, collecting, preparing, cooking, and eating. Thayer made it perfectly clear that there is work involved but that the fruits of one's labors are worth all of the effort.
Learnings from the Wild

This guide was designed with novice foragers and children in mind. The plants were selected because they are easily identifiable and do not have toxic "look-alikes". All of the wild edible ingredients in the recipes I personally harvested myself in order to understand the identification process as well as the preparation and/or cooking process. The most labor intensive recipe ingredient was the Bur oak acorns, as the shelling and leaching process was very energy and time consuming. Although the ingredient is labor intensive, acorns are easily identifiable and I can imagine having a scavenger hunt of sorts as children happily scurry around squirrel-like collecting the nuts. The recipe for acorn pancakes is one that I would definitely prepare for young children, especially if they participated in the acorn foraging as a nice way to celebrate their efforts.

The most surprising wild ingredient I discovered was common milkweed pods. I learned about them just toward the end of their harvestable season. I was not able to collect enough for the pickled recipe in the guide, but I did try them lightly sautéed in olive oil and butter. They were surprisingly quite, delicious with an interesting texture and flavor that I can only describe as milkweed pod. Another surprising recipe I tried used sumac flower clusters to make a refreshing drink. Steeping the clusters in icy cold water for several hours produced a summer time beverage similar to lemonade, tangy and tart, but with its own unique flavor. Poured over ice and sweetened with honey, it was the perfect beverage for summer. I found it to be an easy wild edible to harvest and an easy recipe. I expect that it would be a good one to make with young children.

My favorite harvest discovery involved my granddaughter, my daughter, myself, and my mother-in-law. Chokecherries were discovered by the three of us along the cabin road. We used
a guidebook to identify what we thought were chokecherries. We brought the sprig of cherries and leaves back to the house where my mother-in-law confirmed what we had suspected. Now in her mid-eighties and battling cancer, this exchange of knowledge truly felt like a family memory being passed down across three generations. Without a daughter of her own, she had not thought to share the stories of picking the cherries or the recipe for chokecherry jelly that she had learned from her mother. While raising four active sons, her thoughts were on feeding them not on educating them about local wild berries. She simply made the chokecherry jelly and they gobbled it up, no questions asked. When I asked my husband if he ever accompanied his mom to pick chokecherries, he replied he had not. When I had him taste test the chokecherry syrup recipe, he let out a moan of delight and exclaimed that the taste reminded him exactly of the jelly his mom used to make. I will not pick a chokecherry without thinking of his mom Dorothy from now on.

Where do I go From Here?

My personal statement about foraging and eating lower on the food chain is as follows:

Eating in the wild strengthens our connection to Earth's natural systems and fosters an intimate understanding of the role we play by way of a very short food chain.

My future actions surrounding edible wilds will take place on two levels. The first level will take place professionally as an educator in the public school system. On this level, I will broaden my use of wild edibles to include my after school Earth Club participants. As part of this after school program, I plan to incorporate a unit on food systems that will use Pollan's young reader's edition of *The Omnivore's Dilemma* titled, *Omnivore's Dilemma: The Secrets*
Behind What You Eat (Pollan, 2009). As an extension to this food education, I plan to introduce my after school group to the basics of harvesting common wild edibles that are easily found in the public spaces around our school. Through the use of wild edible field guides and my direct experience from participating in this capstone project, I plan to explore, discover, identify, harvest, prepare, and eat wild edibles with my fourth and fifth grade Earth Club students. I plan to be the adult that takes them outside "acting simply as their guide" with the goal of building a greater appreciation for natural systems through wild-crafting.

The second level that I plan to apply my learnings about foraging and wild edibles is to the arena of my personal life. My personal goal is to share with my children, grandchildren, and family some of the discoveries that I have made in the field of foraging for wilds. I plan to take them outdoors when seasonally possible to enjoy the bounty of nature that is quietly waiting for them outside. I plan to cook and impart basic food education to them as we work in the kitchen side by side, then sit at the table to enjoy the bounty. It is my desire to continue learning about wild edible plants in Minnesota and to continue collecting wild edible recipes that may be compiled into a cookbook at a later time.

Reawakening Old and Beginning New Family Traditions

In an effort to fill gaps in the collective folk knowledge that exists in my family, I hope to contact older members of the family and ask them what they remember about wild edible plants while growing up. There just might be some traditional knowledge lying dormant in my family that is ready to be nudged from slumber. If I could speak to Edna Jane and all of my grandmothers who worked tirelessly to provide for their families, I would tell them thank you. Thank you for your resourcefulness and persistence. I would tell my great-grandmother Edna
Jane that my grandma refers to you as heroic and still tears up at the thought of all of your hard labor. Thank you for your strength, Edna Jane.

Already new learnings have been shared with several family members as a result of this project. I have picked, cooked and sampled several new wild edibles with a number of my family members. My mother and I collected Bur oak acorns together at a nearby wooded area. My sister and I harvested, cooked and shared a small dish of milkweed pods and a cool glass of sumac-ade. Much to our surprise, we truly enjoyed them. My daughter and I discovered, identified, and taste tested Nannyberries that we found during a walk through the back field together. My granddaughter (with the help of her great-grandmother) identified chokecherries for the first time and enjoyed them on pancakes one morning. I sense a new pastime and tradition being born between the women in my family. It is my hope and prayer that this wild edibles project somehow touch the lives of any family's members who still might be holding almost forgotten family food traditions. Recipes, preparations, growing, harvesting, or storage tips all waiting for a reawakening with a new generation.

Summary

The main purpose of this capstone project was to get children outside engaging with nature and learning about their role in the food chain by way of wild edibles. A necessary requirement for that to take place, became the need to create a guidebook that would ready the novice forager with basic understandings of where wild plant foods come from, characteristics of wild plants, and how to prepare wild plants for eating. My goal throughout this project was to build a basic understanding of where wild plant foods come from and by way of foraging for wild edibles, create opportunities for children and their accompanying adults to genuinely bond with nature.
A child needs the companionship of one adult to share the excitement and joy of discovering the natural world around them in order to nurture their sense of wonder (Carson, 1965). A by-product of foraging in the wild for edible plants is increased opportunities for children and their adult guides to spend more time in natural settings. At a time when more and more children are being urged to unplug from technology and increase their physical activity time, wild-crafting gets children outside moving, searching, investigating, identifying, harvesting, and eating wild plants. An understated goal of this project was to initiate outdoor activity that would infuse children's lives with nature in a meaningful way and build the basis for a relationship with nature. As children continue their environmental development with repeated exposure to wild spaces, the desired outcome is that they hold a place for nature dear to their hearts and grow to become the next generation of active Earth stewards.
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