

Mount Saint Vincent University
Department of Applied Human Nutrition

**Wild Edible Plants in Nova Scotia:
Food Tourism Environmental Scan**
Subtitle: Touring Over a New Leaf in Nova Scotia

by
Jillian Ruhl

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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including a required final revision, as accepted by my examiners. To the best of my knowledge and belief, this thesis contains no material previously published or written by another person, except where due reference has been made in the text.

I give consent for a copy of my thesis to be made electronically available to the public.

Jillian Ruhl

"I would feel more optimistic about a bright future for man if he spent less time proving he can outwit Nature and more time tasting her sweetness and respecting her seniority."
– E.B. White, 2006

Abstract

Background: The Food and Agriculture Organization (FAO) of the United Nations defines wild edible plants (WEP) as "Plants that grow spontaneously in self-maintaining populations in natural or semi-natural ecosystems and can exist independently of direct human action." There is a growing interest in tapping the repertoire of WEP for entrepreneurial initiatives, particularly within food tourism as a resurgence of local traditional heritage. Food tourism is receiving growing attention for many reasons, including changing consumer needs, increasing environmental awareness, enhancing cultural identity and place branding, and economic and social sustainability. These trends set the stage for WEP to develop into new biological resources that promote food diversity, crop resilience, and the potential to enhance connections with nature and conservation of wilderness areas containing WEP.

Purpose: To describe the practices and perspectives of food tourism business owners/managers involved with WEP in Nova Scotia (NS), for the purpose of exploring how values attached to WEP shape and are shaped by practices.

Method: Using qualitative descriptive inquiry, semi-structured, in-depth interviews were conducted with food tourism business owners and operators to examine and describe food tourism practices involving WEP. Thematic analysis employing a relational framework informed by political ecology theory provided insight into how food tourism practices involving WEP influenced participants' relationships with nature (biophysical and sociocultural), values driving actions of stewardship and gathering practices for business, and how activities are affected by and may contribute to local culture.

Results: Interviews with ten food tourism operators (chefs, herbalists, and tour guides) were conducted in the summer and fall of 2019. Participants used ten to over 200 WEP in a variety of products and services. Several relational themes emerged from the interviews and captured the ways that food tourism influenced relationships with nature and the values inherent in practices: childhood upbringing, education and training, sense of place, promoting regional

food heritage, ecological knowledge and awareness, business and WEP sustainability, and systems of governance. Each theme told a story of a connective web where WEP in diverse ecosystems (past and present) influences the values and knowledge within food tourism practices and WEP in diverse ecosystems.

Implications: The participants in this study could be considered early adopters of profit-based WEP activities in the province of NS. By telling the “story” of WEP utilized through food tourism, it is possible to use tourism owners’ perspectives and development of products and services to boost local knowledge, connection, and value of wilderness areas containing WEP. The main value of this research is the contribution of knowledge to the study of WEP through the implementation of food tourism practices in NS. This research provides an understanding of how WEP and values-based experiences connect individuals to their food and environment. Illuminating knowledge of WEP and transdisciplinary work in nutrition and ecology could help to inform policy, encourage research and development, and investments in this underexplored area.

Conclusion and Recommendations: Participation in both formal and informal economic activities involving WEP revealed some of the motives behind commercial and non-commercial practices. To varying extents of influence (reaching relatively small audiences and mobilized as material or immaterial products and services), food tourism practices involving WEP can contribute to social and ecological resilience. Recommendations focus on reevaluating the way we understand ourselves, culture, and WEP within the ecological web of nature. Further research is needed to understand the cultural reaches of niche wild food and tourism markets for making a difference to the built environments and socio-economics of communities (even if through a multiplier effect). It could also assist in implementing policies and licensing that promote conservational strategies for WEP. Additional research is also warranted to explore guests’ experiences and whether and how they adopt WEP practices.

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I hold immense gratitude to each of the participants in this study. Your kindness and enthusiasm in accepting the invitation to participant meant the world to me! I enjoyed each and every conversation, and I learned so much from your stories and practices! While I wrote the manuscript and transcribed your voices, this work is the result of your hard work in seeking out wild edibles, getting your feet soaked in the tides, enduring the elements and unknowns of the woods, and operating a business!

Thank you to my incredible thesis committee members, Linda Mann, Dr. Karen Blotnick, and Paulette Cormier-MacBurnie. You are as quick as first responders when it comes to email cries and lending a helping hand! You have all believed in and encouraged me from the beginning of this work. I cannot thank you enough for your valuable time, expertise, and patience that has made this project possible. It has been a joy to work with you!

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Abbreviations

CES – Cultural Ecosystem Services

ES – Ecosystem Services

FAO – Food and Agriculture Organization of the United Nations

HRM – Halifax Regional Municipality

MVS – Maximum Variation Sampling

NDD – Nature-deficit Disorder

NS – Nova Scotia

NTFP – Non-timber Forest Products

PE – Political Ecology

WEP – Wild edible plants

Definitions of Terms

Anthropocene – A term popularized in 2000 and used to understand the impact of human behaviour on climate, predominately over the past 50 years (Marshman et al., 2019; Pretty, 2011; Colding & Barthel, 2017).

Atlantic region of Canada – Refers to the region of Eastern Canada defined using different terms and sources like the Maritimes, the Atlantic region, the eastern seaboard, the northeastern United States, and southeastern Canada (McManis, 2008).

Ecosystem services – Ecosystem services and values have been used interchangeably in the literature to describe the benefits that humans derive from nature (Skubel et al., 2019).

Popularized in the early 2000s by the Millennium Ecosystem Assessment (MA), ecosystems services are grouped into four broad categories: provisioning, regulating, supporting, and cultural services (Colding & Barthel, 2017).

Food tourism – Defined as “visitation to primary and secondary food producers, food festivals, restaurants and specific locations for which food tasting and/or experiencing the attributes of a specialist food production region are the motivating factors for travel” (Rinaldi, 2017; Everett & Aitchison, 2008).

Foraging – The collection and harvest of wild plant foods (Giesting, 2016). Other wild edible foods can be foraged, such as fungi (i.e., mushrooms) or algae (i.e., seaweeds).

Maximum variation sampling (MVS) – A purposeful sampling strategy that aims to sample for heterogeneity. Is often used to understand how a phenomenon is seen and understood among different people, in different settings and at different times (Robert Wood Johnson Foundation, 2008).

Nature – While there remains an unresolved debate about the definition of nature it can briefly be understood as “the habitat for the human species, the habitat for other species, and a significant entity in itself” (Arias-Maldonado, 2015, p. 6).” (Marshman, 2019).

Socionature – A concept introduced to counter the framing of Nature as something distinct from human society (Noll, 2019). Understanding the world to be inherently social and natural at the same time; emphasizing the continuous and mutual production of people and their natural environments (Ahlborg & Nightingale, 2018).

Relational nature – While there is no specific definition, *relational nature* can help to understand the complexities of how humans (as relational beings (Melé & Cantón, 2014)) inhabit the world and form emotional attachments through everyday life (Poe et al., 2014).

Non-timber forest products (NTFP) – A commonly accepted definition is any goods derived from forest plants or animals, other than timber or firewood (Sutherland, 2008). NTFPs also encompasses wild edibles and items utilized for medicinal, decorative, and cultural or religious purposes (Giesting, 2016).

Political ecology – A transdisciplinary field of research that combines the natural and social sciences (Little, 2007). More specifically, political ecology has brought together human ecology’s focus on the interrelations between human societies and their respective biophysical environments and political economy’s analyses of the structural power relations occurring between these societies (Little, 2007).

Wild edible plants (WEP) – Defined by the FAO as “Plants that grow spontaneously in self-maintaining populations in natural or semi-natural ecosystems and can exist independently of direct human action.” (Shaheen et al., 2017). Some WEP can be eaten whole, while others contain one or more edible plant parts (i.e., stem, root, shoot, leaves, fruit, seeds, and buds), and some WEP can contain both edible and poisonous plant parts (Shaheen et al., 2017).

Prologue

NASA spacecraft Voyager 1 and 2 soar through the universe carrying a time capsule of the Earth and the cultural evolution of the species it contains. The time capsule is a 12-inch gold-plated copper phonograph containing 115 images, natural sounds (wind, thunder, birds, whales, and other animals), musical recordings representing the world's cultural diversity, and printed and spoken greetings in 55 languages (NASA, n.d.). When it came to compiling a selection of artifacts, there were no human hierarchies masking, assimilating or erasing others; decisions were an act of self-determination. Humans were a collective, and culture was the spirit. Voyager 1 and 2 symbolize humanity's very hopeful will about the sustainability of life on this planet. They will take 40,000 years to approach a cosmic space possibly inhabited by advanced civilizations capable of dissecting its contents.

For those of you willing to take the plunge and delve into this thesis, it is important to understand that *nature* does not refer to something distinct from a developed human environment. To be "in nature" does not mean to be in the "wild," wilderness, or the outdoors. You sitting at your computer reading this manuscript are as much in nature as the wild bobcats and fungi in the forest. All living beings are part of a holistic world of interacting parts, and together this forms ecology.

I struggled in deciding whether to capitalize the word nature or not. In Polish language, reference to others (e.g., You or Your) is respectfully capitalized, no matter where the subject appears in the sentence. In English, there is an unfortunate onus on the self where the I is always capitalized. In line with literature that refers to Mother Nature as an entity, I had initially capitalized the word nature throughout my thesis as a means of giving power to it to illuminate its agency. I later realized that this type of cautious and careful thinking was a product of my ontology from living in an urban environment – "an illusion of modernity" (Carolan, 2005). By respectfully capitalizing the term Nature, I was discursively making the society-nature distinction where nature is pure and right, and society is unnatural and damaging. By

“Othering” nature as something free from the disciplinary mechanisms of society, we make it absolute (Carolan, 2005). Nature then becomes something in the background (what background, I am not sure), and removed from relations of power. Marshman (2019) goes so far as to call this othering of Nature a form of fetishism and domination of humans to name things and places. Only when it suits us does it become inserted into the social sphere – when the “human condition” arises and “nature” is to blame (Carolan, 2005). But nature is not void of violence and very much culturally and politically constituted. While the naming of Nature by scholars is well-intentioned, nature cannot be studied as a neutral, objective concept. In nature-based tourism research, nature can be studied “only as an ideological marker that is deeply influenced by geopolitical and cultural factors, social constructions, and historical meanings” (Zhang, 2013, p. 198).

I found myself in a predicament while reading the arguments on how the process of othering nature reinforces dualistic thinking. By naming things and places, we are exerting human essentialism (Marshman, 2019). Yet, as Shakespeare famously wrote, *“What’s in a name? That which we call a rose By any other name would smell as sweet.”* (Juliet, Act 2 Scene 2). Does not that mean that the rose holds agency regardless of its anthropomorphization by humans? Or is its agency, denoted by its smell, only active once it is smelled by another? Is the rose ‘othering’ the smeller? Here’s another common question: *“If a tree falls in a forest, will it make a sound if no one is around?”*. The soundwave still exists, but the debate rests on human’s definition of sound and whether there is a receiver. Proving something’s existence does not have to be a semantic query. Photons are wavelengths without human perception. But will they still behave like particles if the observer is not human? We could argue that the photons hold agency. Alright, so maybe these questions are merely for philosophical delight. I will try to ask something more pragmatic. What differentiates strangers from acquaintances from friends? Learning someone’s name is the first step. Then learning about them, their likes and dislikes, their experiences, where they have journeyed from, their talents, maybe even their birthday. Relation and connection form, and suddenly, they find themselves caring for one another. If they were to suddenly lose touch, they would feel a sense of loss, perhaps placelessness. I

believe this is very much representative of human relation to wild edible plants (abbreviated as WEP throughout the manuscript) and the expression of agency, I can carelessly tear up unwanted plants from my garden beds when I do not recognize them. But when I see other (*Other?*) plants in my garden that I did not intentionally plant but ones that I recognize and know of their uses, I find myself in an ethical conundrum as to whether to pull them out. I will leave them until I can harvest useable parts, snip them back to leave room for my sowed plants, or try to transplant them somewhere else. Through my human agency of knowing its name and its traits, its nonhuman agency is actualized and mobilized. Citing Rayner (1997), Head, Atchison, and Phillips (2014) described this indecision to eradicate certain plants a stretching of plant identity across “dynamic boundaries” between the self and non-self, fixture and indeterminacy, and individual and collective form. Plant identity takes on new forms as it engages and meshes with other agents. Plants confront bodies and notions of well-being as they transform into digested compounds and reconfigured into cell growth (Head, Atchison, & Phillips, 2014). Plant agency in human nutrition may seem inexistent within dietetic epistemology but is very much at work in practice and recommendations. Things like understanding intuitive eating, food allergens, culturally appropriate foods, “feel good foods”, foods related to IBS, the list goes on. What we decide to eat and how our bodies respond to it is informed by our interpretation of food (such as plants) and the different agencies they hold. Whether a food belongs in our diet is based on experiences overtime whereby feelings towards the food becomes something we familiarize and associate with our identity and culture.

There is another fundamental layer to this culture: place. Walking around different areas, I questioned my own sense of place and belonging. Why did some areas make me feel unwelcomed, anxious, irritated, or frightened? How far in the forest did I have to go before I felt a rush of adrenalin caused by fear or excitement? Does the emotional change mean that I crossed the line into the “wild”? I have never felt unwelcomed by the forest. The only times that I have felt a sense of intimidation was when ticks and mosquitoes became overbearing, or when posts claimed private property and lines of trespassing. In the city, did the smells of car exhaust, gusts by wind tunnels, and loud sounds set me off? Or was it the confines of people

being squished like sardine cans into inescapable subdivisions? Are there parks, trails, and open spaces that one can explore without a crowded surge of people? Or was it the lack of greenery dividing the sidewalk from the roads that made me feel unsafe? Research has pointed to green dividers as a reason why people are more physically active in certain neighbourhoods (WHO, 2016; Mytton et al., 2012). In fact, the human-nature connection from greenery has gained so much momentum in city planning that researchers and developers have coined “Vitamin G” as an essential component to wellness (Alberta Urban Municipalities Association, 2015).

I found myself, yet again, drifting into utopian dreams about cities that are built with and not against WEP ... lawns with ‘unruly’ and native landscapes, green corridors intertwining cities as much as roads and highways do, people feeling safe to forage and nibble on lawns and along paths. Such ideas are an example of my modern illusion and epistemological positioning. Why do I think that the colour green represents nature? Why are grey landscapes representative of the anthromes of urban sprawl? In desert cities, greenery is an indicator of human settlement – the antidote to urban development (Doherty, 2017). Implementing greenery in deserts is quite environmentally taxing in its equipment and use of natural resources like water, minerals, etc., thereby, makes an argument that nature and sustainability is not equated to plants. Doherty (2017) offers a great example of how human values are not necessarily defined by or relieved by a place’s greenery which can be seen in the cultural perspective of Bahrain. Bahrain’s agriculture, orchards, and gardens divided the countryside from the city. Green spaces were a place that people would *tour to* on the weekends. When the oil boomed in the early 1970s, countryside greenery was no longer a place that people toured, but a place that they moved to and developed on (Doherty, 2017). This sparks some questions for social and ethical comparison: Why were developments not built in a way that incorporated green spaces? Was it easier to remove greenery because it was already denoted by human development? Were there limited design plans for green architecture? Was it too costly? If people were traveling to green spaces for pleasure, this must have been a societal value at the time. What was going on politically? And lastly, is not this the exact situation that happens in Canada? Participants from my interviews suggested the need for governments to invest in rural development by helping

small business owners and young entrepreneurs acquire properties or abandoned farmland for homesteads, food forests, cultivation of WEP, and other food tourism activities. Will these strategies produce places where “wild” nature and sociocultural nature are one? Or will they be seen as human-interfered places striped of their “wild” enchantment? To what extent can landscapes be developed before this dialectical tension exists? Can they be developed at all? Are humans infringing on protected land in their work to control invasive species? Should humans leave wild nature alone or act as stewards as an organism within the circle of life?

Attempts to conceptualize heuristic nature-society interactions fail to account for the ontological asymmetry that exists between the biophysical and social world, and how the two realms are inseparable (Carolan, 2005). If nature encompasses all species and environments and humans are not distinct from nature, then there cannot be a division between human and nonhuman agency. So then, what type of agency does nature hold? Can it even be described as an entity that holds agency? Or is its agency (again, said in way that it is an entity) simply every reaction and feedback loop caused by all biotic and abiotic organisms and their activities? Is nature just another word for phenomenon? Can the materiality of nature also be explained by nonmaterial phenomenon? Latour’s (1993) description of nature as “impure” sociomaterial hybrids (Carolan, 2005) or Latour’s (2004) “assemblages” of human and nonhuman actants (Fletcher, 2017) may explain nature’s agency as it transcends through sociocultural and biophysical forms. Such existence as a sociobiophysical reality exists independently of human perception (Fletcher, 2017). Framed as a sociobiophysical realm, the relationship between humans and the rest of nature can be investigated. Moreover, opening our minds to the idea that nonhumans hold equal intelligence to us in their expression of agency in different forms, we may begin to respect and values WEP in new ways than were previously imagined.

Quite frankly, this is where my thesis brought me. The interviews legitimated a spirituality that I held internally which was further supported throughout the duration of my thesis as I spent endless hours with WEP, using WEP, reflecting on the data, reading, and writing. I am flooded with gratitude while being in the wilderness; the outdoors is my church. If nature is an

unexplainable everything, then call it something similar to a Spinozian metaphysical God. While I hope to relay this manuscript in a way that captures the philosophical journey that I feel this study deserves, I also fear that my acquired and affirmed spiritual understanding of WEP will not be taken seriously in the biomedical world of science based on causality. I will try to do justice to the intriguing world of WEP.

Chapter 1

Introduction to the Research Study

More than 90% of the calories humans consume comes from merely 30 plant species (Shelef et al., 2017), and 50% of dietary protein comes from three crops – wheat, maize and rice (Bharuch & Pretty, 2010). Of the estimated 30,000 edible plant species worldwide, only about 150 are cultivated (Shelef et al., 2017).

The lack of diversity in modern diets is largely a result of industrialized agriculture whereby edible plants have been cultivated into standardized crops (Bharucha & Pretty, 2010; Shelef et al., 2017; Giesting, 2016; Jha, 2018). Dwindling plant biodiversity associated with the industrial food supply system is jeopardizing environmental security and the ability to adapt to catastrophic events caused by climate change (Shelef et al., 2017; Bharucha & Pretty, 2010; Mnguni & Giampiccoli, 2015). Although the dietary potential of WEP has been reported in numerous studies, researchers caution that before promoting the consumption of WEP, research needs to investigate cultural and market value, sustainable harvest levels, and possible integration into innovative farming systems (Boedecker et al., 2014). In the context of developing value products with health benefits, priority needs to be given to the availability of species and the risk of exploitation if demand increases (Shikov et al., 2017).

Research on initiatives in Europe reveal that wild food plants are being rediscovered and recreated by individuals particularly interested in issues of conservation of biodiversity, pesticide bans, and increased healthy diet (Łuczaj et al., 2012). This knowledge is being harnessed by books, television, media, and other educational mediums like seminars and workshops (Wiersum, 2017; Łuczaj et al., 2012; Sachdeva et al., 2018). The increasing presence of wild food products can also be seen by food tourism as a resurgence of local traditional heritage (Łuczaj et al., 2012).

Food tourism is an area of tourism that combines activities and experiences related to food, nature, agriculture, and local heritage (Derek, 2021; du Rand & Heath, 2006; Rinaldi, 2017;

Sidali et al., 2016; de Jong & Varley, 2017). Although no standard definition of food tourism exists, the role of food within the tourism industry is increasing in popularity, with new labels and subcategories being applied, including gastronomic tourism, wine tourism, cultural tourism, culinary tourism, cuisine tourism, Indigenous tourism, agri-tourism, eco-tourism, adventure tourism (Mnguni & Giampiccoli, 2015; du Rand & Heath, 2006; Rinaldi, 2017). Food tourism is receiving growing attention for many reasons, including changing consumer needs, increasing environmental awareness, enhancing cultural identity and place branding, and economic and social sustainability (du Rand & Heath, 2006; Rinaldi, 2017). Many food tourism initiatives exist, including food tourism strategies, the establishment of food tourism networks and regional development, food tourism marketing activities, culinary heritage identification, food related activities such as gourmet cooking holidays, local product promotion, food events and festivals, food and wine tours, and dedicated food routes (du Rand & Heath, 2006; Mnguni & Giampiccoli, 2015). Food tourism incorporates unique natural features, culture, services, infrastructure, access, and attitudes (du Rand & Heath, 2006). Movements such as Slow Food, wild edible foraging, and Indigenous culinary experiences that offer new ingredients can play an important role in boosting the social importance of WEP resources (Pardo de Santayana et al., 2007; Mnguni & Giampiccoli, 2015). Most importantly, the way people perceive and use their local resources plays a crucial role in their conservation and can lead to unpredictable consequences to sustainable development (Giesting, 2016; Pardo de Santayana et al., 2007).

Bridging the two domains [WEP and food tourism] to better complement each other, as well as forging strategic partnerships between the various stakeholders and interest groups may help to disseminate knowledge and awareness about wild food (Rhiney, 2011). Awakening and appreciating the value of wild edibles may help to diversity the human diet in a sustainable way, create new entrepreneurial streams for local economies, promote a land-based regional identity, and preserve cultural heritage and environmental resources.

Research Focus

This research makes a case for understanding the importance of WEP as more than natural resources to bank on in the future, but as windows into the past that illuminate cultural meanings for new possibilities. Specifically, this thesis investigates the value of WEP for social and ecological stewardship within local economies through an open exploration of food tourism practices within the province of Nova Scotia (NS).

Research Purpose

This study describes the practices and perspectives of food tourism business owners/managers involved with WEP in Nova Scotia (NS), for the purpose of exploring how values attached to WEP shape and are shaped by practices. Using qualitative descriptive inquiry and a relational framework informed by political ecology theory, this research explored the link between the cultural values of business owners/operators and their practices within WEP food tourism as an approach towards engaging with and maintaining “wild” ecosystems.

Research Question

The purpose served as an overarching goal to describe the WEP products and services used in practice and examined the why’s and how’s of what food tourism operators do. While this created a rich description of food tourism practices, the “big picture” was what it means for ecological sustainability as a whole (whether philosophically or materially significant). This could only be discovered by delving deep into the cultural and environmental meanings behind practices, and the institutionalized structures that present challenges and opportunities. For this reason, I sought to answer the following research question:

In what ways does food tourism involving WEP in NS influence relationships with nature?

Research Objectives

To describe the scene of food tourism involving WEP, I developed four research objectives that acted as a starting point for openly exploring and describing a diverse range of WEP practices by analyzing similarities, differences, and main features within the data that, together, captured

how WEP impact practices, and how practices in turn, impact WEP. These objectives were as follows:

- 1) To describe the WEP products and services of food tourism in NS.
- 2) To describe the biophysical and cultural contexts that shape and are shaped by the benefits associated with WEP.
- 3) To describe the practices of attaining, transforming, and distributing WEP as products and services.
- 4) To use lessons learned from this research to develop recommendations for practices and future research.

Structure of the Thesis

The prologue and this present chapter of this thesis have already introduced some of the central concepts and arguments within this area of research, leading to the purpose of this study. Chapter 2 expands upon relevant literature pertaining to WEP and food tourism, including trends in cultural use, market exchanges and business philosophies, and ecological worldviews. Chapter 3 provides an in-depth overview of the framework and theoretical model employed in this study, and justification for the use of a relational epistemology. Chapter 4 outlines the research design, including sample technique and qualitative descriptive method for data collection and analysis. This then leads to Chapter 5 which is organized into two parts: 1) results from data recruitment as a descriptive outline, and 2) results (including discussion) from the thematic analysis. The first section of the results describes the “who” (i.e., the participants), the “where” (i.e., places of practice), and the “what” (i.e., products and services) of WEP food tourism practices. The second part digs deeper to uncover the “why” (i.e., values and benefits) and “how” (i.e., activities of attaining, transforming, and distributing WEP as products and services) of these practices. The results of the second part are combined the discussion. The final chapter provides recommendations for future research and practice, significance and limitations of the study, and concluding remarks.

Chapter 2

Literature Review

What are Wild Edible Plants?

In reference to plants, the term *wild* refers to those that grow without being cultivated (Łuczaj et al., 2012; Pardo-de-Santayana et al., 2007). Native plant species are also uncultivated but are flora indigenous to a given area in geologic time before human intervention (Thomas, 2019). Most species belonging to wild food plant taxa are native species, but some introduced species have become feral and naturalized (Pardo-de-Santayana et al., 2007; Bacchetta et al., 2016; Thomas, 2019). Many wild plants grow in their natural native habitats, but some grow in habitats that have become managed areas (Łuczaj et al., 2012). The plants from managed areas are usually cultivated native species but labelled as “wild” for marketing purposes (Łuczaj et al., 2012). The Food and Agriculture Organization (FAO) of the United Nations (UN) defines WEP as “Plants that grow spontaneously in self-maintaining populations in natural or semi-natural ecosystems and can exist independently of direct human action.” (Shaheen et al., 2017). This definition, however, does not clarify what is considered *edible*. According to Shaheen et al. (2017), if at least one part of the plant is comestible (i.e., stem, root, shoot, leaves, fruit, seeds, or buds), then it is considered edible. It is important to identify which part(s) of the plant is edible as some WEP can also have poisonous parts (Shaheen et al., 2017). Depending on their usages, WEP fit into many food categories: green vegetables, potherbs, roots and rhizomes, edible flowers, berries and fruits, nuts and seeds, beverages, tea and coffee substitutes, seasonings and spices, sweets, bread surrogates, and preserves (Shikov et al., 2017).

Wild edible plants is common nomenclature used in scholarly literature to generalize wild edibles that do not include wild animals. Non-timber forest products (NTFP) is another common term but includes non-edible species in addition to edible species. It has also been criticized for beginning with a diminutive descriptor (Pierce, 2014). For these reasons, this study used the term WEP. Of course, plant species are only one kingdom of living organisms where many edibles exist. Many wild edibles can be foraged from other kingdom taxon, including algae,

fungi, and certain lichens and seaweeds. Fungi species, namely mushrooms, are commonly discussed across the literature on wild edibles. Fun fact: fungi belonged to the kingdom of plants until 1960 (Smith, n.d.). Although this study sought to explore WEP, it was expected that edible species spanning many kingdoms would be commonly used in food tourism practices, and wild edible fungi and algae species (mushrooms, boletes, lichens, and seaweeds) were included as recurring themes in the interviews. The use of WEP did not limit the data to plant species, and all participants interpreted WEP as all foraged edibles.

Why Study Wild Edible Plants?

Wild Edible Plants as Ecosystem Services for Environmental Sustainability

Over the past 50 years, humans have changed ecosystems more rapidly and extensively than in any comparable period in human history (Garmestani & Benson, 2013). The era of the *Anthropocene* is a proposed epoch that begun when human activities, predominantly during industrialization, started to have a significant impact of the world's ecosystems (Pretty, 2011; Colding & Barthel, 2017). The term Anthropocene became widely popularized in 2000 by Nobel laureate Paul J. Crutzen who studied atmospheric chemistry and the influence of human behaviour on climate (Colding & Barthel, 2017). A decline in biodiversity and ecosystem services (ES) have been especially noticeable during the Anthropocene since the 1950s (Garmestani & Benson, 2013; Colding & Barthel, 2017; Pretty, 2011). *Ecosystem services* and values have been used interchangeably in the literature to describe the benefits that humans derive from nature (Skubel et al., 2019). As outlined in Figure 1, biodiversity and ES include provisioning services, regulating services, cultural services, and supporting services (Colding & Barthel, 2017).

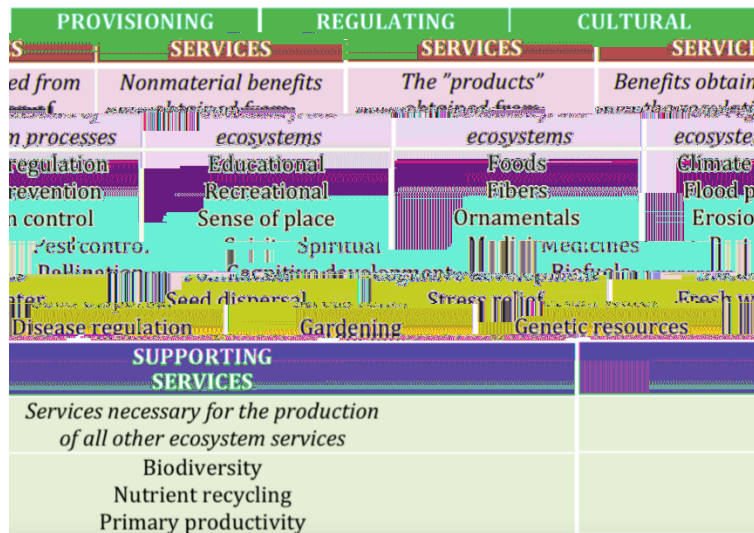


Figure 1. Ecosystem Services Outlined by the UN's Millennium Ecosystems Assessment (Colding & Barthel, 2017)

The UN's Millennium Ecosystems Assessment estimated that as much as 60% of the planet's ES were deemed degraded or used unsustainably in the first scientific global stocktaking (Reyes-García et al., 2015; Colding & Barthel, 2017). Destruction of biodiversity has been further extenuated by the UN's data that reported 75% of the Earth's land surface has been significantly altered by human actions (United Nations Summit on Biodiversity, 2020). Data has also demonstrated that between 30-50% of all Earth's species will become extinct by the mid-century at the rate in which current practices utilize ES (Colding & Barthel, 2017).

Reports specific to Atlantic Canada indicated that species are threatened by habitat modification from activities such as shoreline development (cottage building, docks, walls, etc.) road building, infilling, and nutrient run-off (ACPF Group, n.d.). Many plants that were once indigenous to the region are becoming rare or restricted in their locales due to intensive agriculture, recreational use of wilderness areas, over-picking, and heavy cutting of forests (Walker, 2008).

The UN calls for new paradigms that allow humans to reconnect [or connect in the first place!] to the biosphere and become active stewards of the Earth System as a whole (Colding & Barthel, 2017).

Wild Edible Plants and Global Security

According to the FAO, a minimum of one billion people in the world utilize WEP in their daily diet (Shaheen et al., 2017). At the same time, food insecurity and malnutrition, and an ever-growing human population continue to be significant problems across the globe (Shaheen et al., 2017). The replacement of wild foods by store-bought products in many populations has been linked to rising rates of chronic disease related to reduced dietary diversity and poor nutrient intake (Bharucha & Pretty, 2010; Batal & Hunter, 2007; Kuhnlein et al., 2009). Global trends indicate that more people will come to depend solely on store-bought, industrially farmed foods (Bharucha & Pretty, 2010). Dwindling plant biodiversity associated with the industrialized food system is jeopardizing environmental security and the ability to adapt to catastrophic events caused by climate change (Shelef et al., 2017; Bharucha & Pretty, 2010; Mnguni & Giampiccoli, 2015). The FAO reported that the food sector is responsible for nearly one third of global greenhouse gas emissions (Jha, 2018). It was also estimated that by 2050, the world will have to produce 50% more food to feed the projected 10 billion people (Jha, 2018). Urgent solutions are needed to meet this demand while contributing to climate change and a loss of biodiversity (Jha, 2018).

Wild edible plants provide staple and supplement foods that could play a vital role in reducing the gap between food availability and dietary deficiency, as well as offer new streams of income or offset the cost of food for local communities (Uprety et al., 2012). Despite the potential ecological, social, and nutritional benefits of WEP, the “free availability” of WEP in nature has resulted in minimal research on economic valuation (Pawera et al., 2020). More data on the contribution of WEPs will help offset further reducing the visibility of WEP and the decline in biodiversity and traditional knowledge (Pawera et al., 2020). The promotion of WEP

and their derived products could lead to improved human nutrition and environmental sustainability (Mnguni & Giampiccoli, 2015; Batal & Hunter, 2007; Pretty, 2011).

Wild Edible Plants for Human Nutrition and Diet Quality

More than 90% of the calories that humans consume comes from merely 30 plant species (Shelef et al., 2017), and 50% of dietary protein comes from three crops – wheat, maize and rice (Bharuch & Pretty, 2010). In Canada, approximately 1,050 WEP species have been identified (Kuhnlein & Turner, 1991). Nearly 80% of the fruits and vegetables that the average Canadian eats are imported, and more than half of produce is imported from the United States (Scott, 2016). The average Western citizen has access to more edible plant species than ever before, and yet, a common household shopping list will not include more than 45 plant species as food supplies (Blanco-Salas et al., 2019). Ethnobotanical surveys of wild plants have revealed that more than 7000 species have been used for human food at some stage in human history (Bharuch & Pretty, 2010). Of the estimated 30,000 edible plant species worldwide, only about 150 are cultivated (Shelef et al., 2017).

The nutritional role and health benefits of WEP have been reported in many studies (Bharucha & Pretty, 2010; Kuhnlein & Turner, 1991; Pardo de Santayana et al., 2007; Shelef et al., 2017; Uprety et al., 2012; Batal & Hunter, 2007; Giesting, 2016; Bacchetta et al., 2016; Arnason, Hebda, & Johns, 1981). Detailed ethnobotanical records show WEP contain high levels of macro- and micro-nutrients. Wild edible fruits, such as rose hips and berries, have exceptionally high amounts of ascorbic acid, calcium, carotene, and folate (Kuhnlein & Turner, 1991). Seeds, nuts and grains are a good source of protein, fat, carbohydrates, vitamins and minerals. Examples include wild rice, oak acorns, beechnuts, black walnuts, and hazelnuts (Kuhnlein & Turner, 1991). In addition to species of WEP possessing superior nutritional quality, analyses have revealed many nutritional constituents and pharmacological properties, including phytochemicals and bioactive compounds, and secondary metabolic products as candidates for nutraceuticals, functional foods, and medicines (Bacchetta et al., 2016; Arnason et al., 1981).

The lack of diversity in modern diets is largely a result of industrialized agriculture, whereby edible plants have been cultivated into standardized commodity crops (Pawera et al., 2020; Bharucha & Pretty, 2010; Shelef et al., 2017; Giesting, 2016; Jha, 2018). Farmers are increasingly considered the guardians and architects of landscapes in Western economies; yet, Indigenous Peoples are the guardians of wild food heritage within biodiverse local regions (Sidali et al., 2016). Largely for this reason, ethnobotanical investigations of WEP have focused on documenting Indigenous traditional knowledge related to habitats and use of plants (Shaheen et al., 2017).

Wild edible plants provide important ES as food, genetic variation, and biosecurity (Bacchetta et al., 2016). “Wild” and “feral” botanical products serve many purposes beyond food, such as craft, medicine, fuel or construction (Nyman, 2019). They also form part of the cultural history of a region, contributing to people’s identity and local traditions (Bacchetta et al., 2016). In communities with a tradition of wild food use, WEP are keystone to cultural identity, medicine, and as a source of resilience in the face of environmental change (Bharucha & Pretty, 2010; Mnguni & Giampiccoli, 2015). A “herbophilous” society refers to cultures that place high value on plant species for their use as both food and medicine (Shikov et al., 2017). Such societies include those found in Russia, China, Japan, Korea, and Southeast Asia (Shikov et al., 2017). Local accessibility and traditional ecological knowledge of WEP are the basis for their utilization (Shaheen et al., 2017).

Historically, albeit relatively recently, local WEP have been used by populations as a necessity in times of political crises and economic marginality. Examples of the use of WEP in times of famine were documented in many European countries during the 19th and 20th centuries. Examples include populations of the Adriatic islands during WWI and WWII (Jug-Dujakovic & Łuczaj, 2016); the Iberia peninsula (Blanco-Salas et al., 2019); the USSR during WWI, most notably during the siege of Leningrad (Shikov et al., 2017). One of the most notable and recent accounts of using WEP during times of emergency was during the 1430 days of the siege of Sarajevo from 1992-1996 (Redzic, 2010; Łuczaj et al., 2012). This brought about a food crisis

that lasted longer than even the siege of Leningrad (1942-1944), the Athens famine (1941-1942), and the Dutch winter of hunger (1944-1945). A botanist, Sulejman Redzic, recorded the WEP used in the besieged city and ran media programs explaining the use of WEP within the city to alleviate hunger (Redzic, 2010; Łuczaj et al., 2012).

The changes in patterns of WEP use differ by region and are associated with times of famine or food scarcity, urbanization, large-scale farming, lesser contact with nature, socioeconomic and ecological changes, lifestyle changes, seasonality, new trends in nutrition, and many other reasons (Reyes-García et al., 2015; Łuczaj et al., 2012; Shaheen et al., 2017). In determining why only some WEP have been consumed, research has highlighted the need to consider the social, economic, and cultural factors, such as poor communications, fads, and direct contact with nature in everyday life (de Jong and Varley, 2018a; Pardo-de-Santayana et al., 2007). According to research from Spain and Portugal, these factors may be more important than biological factors, such as the abundance of wild edible flora (Pardo-de-Santayana et al., 2007).

Although the dietary potential of WEP has been reported in numerous studies, researchers caution that before promoting the consumption of WEP, research needs to investigate cultural and market value, sustainable harvest levels, and possible integration into innovative farming systems (Boedecker et al., 2014). In the context of developing value products with health benefits, priority needs to be given to the availability of species and the risk of exploitation if demand increases (Shikov et al., 2017).

Health and Cultural Ties to the Land through Wild Edible Plants

Ethnographic data compiled in 1990 documented 550 plant species used in the traditional diets of Indigenous Peoples in Canada and neighbouring areas (Kuhnlein & Turner, 1991). Data of wild food and medicine plants gathered by Indigenous peoples in Eastern Canada (Ontario, Quebec, and the Maritimes) identified 175 food plants, 52 beverage plants, and over 400 medicine plants (Arnason et al., 1981). Dismayingly, traditional knowledge of WEP is rapidly eroding (Uprety et al., 2012). More recent data reported that Indigenous communities in

Canada use over 200 species (Kuhnlein et al., 2009). This also presents challenges for preserving Indigenous food culture which is necessary for Indigenous populations' food security (Sidali et al., 2016), cultural identity, medicine, and resilience in the face of environmental change (Bharucha & Pretty, 2010; Mnguni & Giampiccoli, 2015; Kuhnlein & Turner, 1991).

Most of the studies on WEP focus on uses within one culture or ethnic group, and few papers compare food plants of various cultures (Pardo-de-Santayana et al., 2007). Cultural identities, connections to place, and environmental practices are embedded in people's everyday relationships with nature (Desjardins, 2010; Poe et al., 2014; Fish et al., 2016). Disconnection from the land damages cultures that have been closely tied to their environments and manifests in the prevalence of chronic health conditions (Pretty, 2011). Colonization in Canada has negatively impacted the lives and wellbeing of Indigenous peoples (Burnett et al., 2016). Numerous studies have documented nutritional deficiencies in the diets of Indigenous peoples as a result of modern reliance on processed food (Pal et al., 2013; Kuhnlein & Turner, 1991; Arnason et al., 1981). Traditional food revitalization projects are beginning to be used to increase the consumption of wild foods, and provide health and cultural benefits to traditional communities at risk of being subjected to assimilated diets (Bharucha & Pretty, 2010; Pretty, 2011). However, little has been done to reverse the rates of diet-related chronic diseases using land-based foods (Pal et al., 2013).

Pal et al. (2013) calculated that the estimated cost of food from the land in two First Nations communities in Northern Ontario were economically comparable to food available in-store. In NS, a case study using a participatory action research method with a focus on community-based development occurred in 2000 with the Bear River Mi'kmaq First Nation (MacDonald, 2000). Through an interpretive hiking trail, participants from a volunteer trail committee and the broader community were interested in building on their knowledge of traditional Mi'kmaq uses of edible and medicinal plants (MacDonald, 2000). Participants stated that the trail project could not only revive traditional Mi'kmaq knowledge, but also foster traditional Mi'kmaq

values, education about the ancestors, offer a recreational opportunity, and an opportunity for community spiritual strengthening and emotional pride (MacDonald, 2000).

Bringing WEP into the market place may help to supply more culturally appropriate foods for Indigenous Peoples, if exchanges are organized through Indigenous economics and livelihood strategies (Woodley et al., 2006). Some examples of wild food crops used by Indigenous Peoples, and which have been directly adapted for commercial markets, are chia seeds, pinyon nuts, Jerusalem artichokes, wild rice, maple syrup, and black walnuts (Kuhnlein & Turner, 1991). A study by Chan et al. (2012) reported that First Nations peoples of Manitoba sometimes worry that their traditional food will run out before they can get more. Production of WEP and native plant species can enable diverse agriculture entrepreneurship and improve conflicts over Indigenous land management through preserving interspecies crop and genetic diversity and reducing agricultural chemical inputs (Shelef et al., 2017).

Agricultural Commercialization of Wild Edible Plants

In terms of agricultural commercialization of WEP, two distinct strategies have been discussed in the literature: 1) establishing cultivated crops, and 2) developing solutions for efficient, cost-effective and ecologically sustainable gathering of WEP (Shelef et al., 2017; Rousseau & Bergeron, 2003). Most research to date has focused on how to improve existing crop species, rather than on recruiting and promoting new ones (Shelef et al., 2017). Establishing cultivated crops from potential WEP requires vast investments of time, money, knowledge, patience, and the ability to take risk for long trial-and-error processes (Bacchetta et al., 2016; Uva & Weybright, 2005; Shelef et al., 2017). Cultivation of most WEP has not had great success due to reasons including the inability or difficulty mimicking the distinct and intricate habitats WEP growth requires (Atanasov, et al., 2015; Shelef et al., 2017; Kuhnlein & Turner, 1991); high costs of cultivation and research (Leaman, 2006; Che, 2010); limited support and investments for farmers to risk experimenting with new or potential food crops (Bacchetta et al., 2016; Atanasov, et al., 2015; Pierce, 2014). Wild edible plants as herbal medicines are even more limited by these factors as land for cultivation of non-food crops is limited (Leaman, 2006).

To make this economically viable requires persuading private-sector investors to back alternative crops (Jha, 2018). Government programs and research funding is largely focused on supporting the production of major commodity crops (Che, 2010). Achieving economies of scale requires competing with mid-to-large farms and agribusinesses that are largely supported by government and research funding to produce major commodity crops (Che, 2010). Bacchetta et al. (2016) argued that cultivation of small-scale crops in agroecological farms is more labour intensive but could help reverse the tide of job losses resulting from mechanization and industrialization of agriculture. Bacchetta et al. (2016) proposed that the category *utilized wild*

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As humans become more aware of the benefits of eating local food and plant medicines that are grown without artificial chemical inputs, they are beginning to recognize the importance of their surrounding wild plants (Walker, 2008). A new food culture based on WEP is expanding in Western countries (Guil-Guerrero, 2014). There is a growing interest in tapping the repertoire of WEP for entrepreneurial initiatives, such as the development of new gastronomies and experimental cuisines (Bacchetta et al., 2016). In a case study investigating food security and influencers of consuming WEP, wild edible fruits tended to be eaten for “fun” or their taste, compared to other wild edibles consumed for nutritive, medicinal or hunger reasons (Shumsky et al., 2014). A study by Pardo de Santayana, et al. (2007) found that wild fruits were one of the most commonly used and versatile categories of traditional native edible plants. They also possessed a high level of socio-cultural significance for families. These trends set the stage for WEP to develop into new biological resources that promote food diversity and crop resilience and enhance ES (Shelef et al., 2017).

Research on initiatives in Europe reveal that WEP are being rediscovered and recreated by individuals particularly interested in issues of conservation of biodiversity, pesticide bans, and increased healthy diet (Łuczaj et al., 2012; Blanco-Salas et al., 2019). Wild edible plants have also been gaining media attention through the spread of information via the internet, wild food/foraging workshops, and promotion of new culinary vogues and specialty health food products (Łuczaj et al., 2012). The uptake of knowledge and use of WEP is often encouraged by findings published in scientific journals that highlight nutritional qualities and associated health benefits (Guil-Guerrero, 2014). This knowledge is being harnessed by books, television, media, and other educational mediums like seminars and workshops (Wiersum, 2017; Łuczaj et al., 2012; Sachdeva et al., 2018). The consumption trend of WEP is moving from peasant/marginalized populations to elite “foodies.” This trend is specifically seen through the rise of haute cuisine and ecotourism taking place across Europe (Blanco-Salas et al., 2019).

In the realm of rediscovering WEP for their potential as sustainable food sources, it is essential to involve a large diversity of stakeholders and disciplines, of which may include local

community members, Indigenous knowledge keepers and Elders, ethnobotanists, ecologists, foragers, anthropologists, farmers, nutritionists, food scientists, culinary school educators, and tourism operators (Bacchetta et al., 2016).

Foraging Wild Edible Plants as Engagement with Nature

Urban foraging has become popularized as a practice and point of research inquiry over the last several years (Kowalski, 2014; Nyman, 2019; McLain, 2014; Poe et al., 2014). Kowalski (2014) studied urban foraging practices in Toronto, Canada through interviews with two land managers, three land managers/foragers, and twelve foragers. Nyman (2019) studied three vignettes in London, U.K. using a mixed-methods framework. Both studies revealed that eating “weeds” and distinctions between native and introduced species heavily influenced foraging practices (Kowalski, 2014; Nyman, 2019). Participants referred to some plants as “weeds” and viewed them as expendable; revealing that subjective value is placed towards certain species (Kowalski, 2014). *Species status* was also a central concept that guided urban green space management and interactions between people and plants in a case study of 58 foragers and 18 land managers and conservation leaders in Seattle (Poe et al., 2014). It was also discovered that foraging created a sense of “wilderness” that blurred the boundaries of urban spaces and nature for many people. Different notions of the role of nature and public spaces in cities grounded decisions to transgress bylaws that would permit urban foraging (Kowalski, 2014; Poe et al., 2014).

Consuming wild food produced by nature builds a strong connection between people and land (Giesting, 2016). Foraging, in particular, encourages values of care and protection [an ecological worldview] which enables humans to move beyond the modern dualistic worldview so common in our individualistic and deracinated society (Giesting, 2016). Research by Giesting (2016) showed two wild food events involving foraging activities were impactful at encouraging an ecological worldview amongst a general population. Data from 95 surveys and 15 interviews of foragers showed the “typical” forager is engaged in a white-collar profession, lives in a rural area, and exhibits a strong environmental identity (Giesting, 2016). Some of the main reasons

for foraging were a desire to facilitate a deeper connection to nature, and the health benefits, particularly for nutrition and increased dietary diversity (Giething, 2016). This reveals both an external and internal affinity to ecological values surrounding the environment and biology. The benefits of foraging were both tangible and intangible, ranging from free, nutritious food to heightened physical health to increased feelings of security in the ability to be self-reliant and obtain food for oneself (Giething, 2016). Ninety-four percent of foragers self-identified as being environmentally aware; but only 85.1% believed that friends/family would describe them that way (Giething, 2016). A form of dependence upon the environment was revealed amongst foragers in that 75.5% indicated that their local natural environment was “extremely important” for their daily life; and 67% of interviewees and 22% of survey participants mentioned that food is a key part of this connection (Giething, 2016). This may have been due to a reliance on WEP for their diet as 48.4% of foragers consumed wild foraged food items once per week or more. As the author notes, the mainstream environmental movement has been unable or unwilling to engage with spirituality and non-rational drivers for behaviour (Giething, 2016). The relationships between environmental issues and excessive material consumption among foragers was also explored by examining consumer spending habits and satisfaction with material possessions. A preference for luxury items was believed to adhere to a consumer cultural worldview which is attached to environmentally negative consumption patterns (Giething, 2016). Such a preference for material items was not found amongst foragers; however, 42.2% of participants indicated that they would like to travel. Foragers tended to use extra money for experiences, saving or investing, charitable donations, education, growing a business, or purchasing a home. This wide range of economic exchange preferences made it difficult to infer whether foragers’ values were more or less materialistic than the average (Giething, 2016). Another interesting and relevant finding was that 28.9% of the foragers placed a high value on landownership (Giething, 2016). A possible reason for this included the norm of owning land in rural and homesteading communities (50% of foragers lived in rural areas). Eighty percent of foragers commented on the importance of learning and sharing knowledge with others. Recommendations made from these promising results were that promotion of this activity on a larger scale, and in a sustainable manner, could contribute to a positive shift

toward a collective ecological conscience as a new form of environmental message (Giesting, 2016).

The “foraging” identity described in the study by Giesting (2016) was mirrored in interviews with foraging course leaders who explained their frustration with the notion that foraging has become something for fine-dining and middle-class hobbies (de Jong and Varley, 2018b). To them, foraging can serve as a pragmatic response to contemporary issues of consumption. Attendees were also troubled by foraging being an upper-class leisure pursuit; and that foraged cuisine sounded pretentious. This notion acted as a deterrent to participating in foraging activities (de Jong & Varley, 2018b). It was understandings of the potential that enabled attendees to move past ideas of classism (de Jong & Varley, 2018b).

Wild Edible Plants as an Attraction for Tourism

Closing the food gap and connecting to nature is also a way of making sense of vastly abstract environmental issues and creates an understanding that is personally meaningful and motivates action. Material reconnection is fundamentally based on consumption; therefore, advocacy could include local restaurants serving local food, infrastructure built using locally sourced timber, community gardens, shortened food chains, or enhanced food traceability linking consumers to producers (Ives et al., 2018).

The increasing presence of wild food products is appearing in food tourism as a part of the local traditional heritage offered by them (Łuczaj et al., 2012; Wiersum, 2017; Gordon, 2018; Ives et al., 2018). Food tourism is an area of tourism that combines activities and experiences related to food, nature, agriculture, and local heritage (Derek, 2021; du Rand & Heath, 2006; Rinaldi, 2017; Sidali et al., 2016). Although no standard definition of food tourism exists, the role of food within the tourism industry is increasing in popularity, with new labels and subcategories being applied, including gastronomic tourism, wine tourism, cultural tourism, culinary tourism, cuisine tourism, indigenous tourism, agri-tourism, ecotourism, adventure tourism (Mnguni & Giampiccoli, 2015; du Rand & Heath, 2006; Rinaldi, 2017). Food tourism is receiving growing

attention for many reasons, including changing consumer needs, increasing environmental awareness, enhancing cultural identity and place branding, and economic and social sustainability (du Rand & Heath, 2006; Rinaldi, 2017; Gordon 2018). Many food tourism initiatives exist, including food tourism networks and regional development strategies, marketing activities and local product promotion, culinary heritage identification, and food related activities such as gourmet cooking holidays, food events and festivals, food and wine tours, and dedicated food routes (Wiersum, 2017; du Rand & Heath, 2006; Mnguni & Giampiccoli, 2015). Food tourism incorporates unique natural features, culture, services, infrastructure, access, and attitudes (du Rand & Heath, 2006). Movements such as Slow Food, wild edible foraging, and Indigenous culinary experiences that offer new ingredients can play an important role in boosting the social importance of WEP resources (Pardo de Santayana et al., 2007; Mnguni & Giampiccoli, 2015). Most importantly, the way people perceive and use their local resources plays a crucial role in their conservation and can lead to unpredictable consequences to sustainable development (Wiersum, 2017; Giesting, 2016; Pardo de Santayana et al., 2007).

Why Study Food Tourism in Relation to Wild Edible Plants?

Tourism provides an outlet from the everyday, highly routinized, social practices. The recreational sector is growing, and individuals are motivated by reasons of culture, science, leisure/recreation, subsistence/self-sufficiency, economics, nutrition, community building, spiritual wellness, connection to nature, a desire for hyper-local foods, alongside serving as a political statement

involving WEP from a visited place offers the introduction of unique tastes, both known and unknown, familiar and unfamiliar, and engagement with the environment by sampling the “terroir” of the land (Garza, 2019). Food tourism involving foraging activities take this ingestion of nature to the next level through an embodied experience of gathering and harvesting food. Experiencing such practices can broaden the conceptual boundaries between nature and culture relating to the normative constructions of contemporary tastes and modes of consumption (de Jong & Varley, 2018b).

de Jong and Varley (2018b) analyzed over 200 media articles that included both “foraging” and “tourism” terms since 2013. This was indicative of a merge between the tourism industry and WEP as alternative consumption practices in recent years (de Jong & Varley, 2018b). Content analysis revealed that tasting foraged foods evoked a transformative embodied encounter with the environment for several foraging tourism attendees (de Jong & Varley, 2018b). Tourism involving WEP allowed a space for tour guides to inform individuals about sustainable management of species and the surrounding environment (de Jong & Varley, 2018b). An ethical debate surrounds the encouragement of amateurs to forage, particularly when it risks large scale harvesting of scarce flora (de Jong & Varley, 2018b). Undeniably, this requires tour guides to possess a comprehensive working knowledge of wild plants within their region of work and sustainable harvesting practices. Recent research indicates that foraging expeditions and food gathering practices in tourism deserve more attention in scholarly literature (Shelef et al., 2017).

Food Tourism and Cultural Identity

Individuals’ food preferences are not only determined by the taste and familiarity of certain foods. “Gustatory qualities of food” are formed by cultural representations that distinguish foods as “good” and “bad” (de Jong & Varley, 2017). Such distinctions arise through sociocultural ideals signifying education, discipline, conformity, and success; and become reproduced unconsciously by individuals (de Jong & Varley, 2017). This description of food as a cultural symbol has been studied by multiple scholars using Bourdieu’s sociological theory of

culture and taste (Stringfellow et al., 2013; de Jong & Varley, 2017; Dougherty et al., 2013). The term *geography of taste* has been suggested as an indicator for developing a deeper understanding of a relationship between food and place for tourism (Ellis et al., 2018). As an indicator for studying WEP food tourism, links between food choice, cultural identity, social status, nationality, and location could be examined. A geographical approach to food tourism can unravel the influence of tourism on the local community and their ability to maintain traditional heritage, skills, and a way of life (Ellis et al., 2018). In a book on gastronomic tourism, Scarpato and Daniele (2003, p. 299) borrowed the term *eatimologies* to refer “to the analysis of the origin and development of specific products, their spreading through commerce, cultural expansion, colonization, tourism, and their hybridization.” Eatimologies describe how communities can evolve socially and economically, while attending to an eco-nutritional commitment to environmental sustainability and community’s members’ optimal health (Scarpato & Daniele, 2003).

Two literature reviews conducted discourse analyses of information portrayed in the media: one on foraging from 2001-2015 (Sachdeva et al., 2018), and one on food tourism from 1995-2016 (de Jong & Varley, 2017). Both analyses were attentive to the way information is shaped by political pressure and culture. The way food tourism was presented in the media pointed to problems in perceiving food tourism as merely a means for economic development (de Jong & Varley, 2017). Value placed on national cuisine was portrayed to increase tourist spend, rather than as an entry point to shaping cultural foodscapes through the facilitation of a holistic and sensorial experience (de Jong & Varley, 2017). This positioning of food tourism was also shown to privilege the cultural symbols of the middle class (e.g., high-end, healthy food), and devalue, marginalize, and ridicule the consumption practices of others (de Jong & Varley, 2017). Marketing tactics appealing to an affluent, middle class consumer as a means of generating revenue seems counterproductive to recent tourism statistics. According to the Travel Activities and Motivations Survey (Statistics Canada, 2006) and Ontario Four-year Culinary Tourism Strategy and Action Plan, the majority of tourists are of low or modest income, yet, seek authentic experiences involving local food and culture (Statistics Canada, 2006; ICON, 2015).

Nova Scotia Tourism ICON report (2015) indicated that these travelers desire experiences that engage their senses as they learn about a place (ICON, 2015; Wells-Hopey, 2017). Public discourse surrounding WEP, such as the taste of a few privileged elites or as a self-provisioning service could impact managers' acceptance of these practices (Sachdeva et al., 2018). On the contrary, the local cuisines of many regions have often been viewed as not being sophisticated enough to serve as a tourist attraction (du Rand et al., 2003). Boosting the pizzazz of local cuisine by marketing tactics that promote local food as high-end, specialty, and quality ingredients/products can augment elements of culture, identity, and local food knowledge while enhancing destination attractiveness for regional development (Sidali et al., 2015; Dougherty et al., 2013).

The discourse analysis of information and communication about foraging examined trends in Canada and the United States (Sachdeva et al., 2018). It was hypothesized that information during the Great Recession (2007-2009) would reveal a distinct direction towards the use of foraging to offset food insecurity during tough financial times, however, this was not particularly the case. Self-provisioning was the most frequently mentioned topic and focused on practical information related to finding wild foods and preparing them at home. Contrast to this, luxury commodity topics were also frequently reported, and focused on high-end cuisines. This raised a number of important questions to consider: Was the content about sumptuous food intended to appeal to readers as a means of escape during stressful times? Or was the "lipstick effect" theory in effect by increasing attention to luxury food because of consumers' desire to splurge on small treats when their spending is restricted? (Sachdeva et al., 2018). The foraging trend is moving away from its association with low socio-economic status in the United Kingdom, United States, Australia and New Zealand (de Jong & Varley, 2018b). In an article about "foodies" and "foodie-ism", print media played a critical role in the evolution of food interest, and broadcast media has begun to slowly smudge the lines of class distinctions (Collins, 2015). Food tourism experiences are also becoming extolled for reshaping identity and cultural class by intimately and hedonistically informing consumers in the liberated pursuit of becoming socially and environmentally responsive actors (Yeoman & McMahon-Beatte, 2016).

Authenticity and regional pride are other aspects of food tourism precariously situated in the literature. Globalization has been criticized for creating homogenized cuisines and “fusion” foods (e.g., ramen burger). Rather than promoting culturally appropriate food, scholars have argued that globalization of food threatens cultural diversity and cultural identity (Scarpato & Daniele, 2003). This also takes the *je ne sais quoi* out of culinary tourism which relies on authentic, traditional, and unique food experiences. Other scholars have reproached such anti-globalization sentiment and believe that gastronomic tourism can adapt to cultural shifts and assimilation (Scarpato & Daniele, 2003). Tourism entrepreneurs can offer meaningful types of food distinctiveness by focusing on their own personality-traits and the regional/local context in which they are embedded (Sims, 2009; Sidali et al., 2015). In these regards, authenticity and sense of place are still vital components of tourism activities but can come from a worldwide openness and ecological worldview (Scarpato & Daniele, 2003). As cited and written by Sidali et al. (2015, p. 1191), “The differentiation dimensions derived here should not be considered mutually exclusive, but rather should be seen as sets of success factors that can converge into a “unique combination of local resources, individual actions and institutional activities” (Kneafsey, 2000, p. 48).” It is here that WEP may be the perfect component to create both a permanently authentic attraction within the changing cultural products and information through a very distinct land-based regional heritage.

Food Tourism and the Facets of “Capital”

The strategies of food tourism operators to focus on affluent and exclusive target markets is comprehensibly linked to sustaining a small business. Many small and medium sized enterprises (SME) find it difficult to achieve sustainability due to a number of barriers, including lack of funding and financial restraints, lack of appropriate infrastructure, limited product variety, and ability to take risk investment (Dodds & Holmes, 2011; Beeby, 2018). The majority of tourism literature has endorsed business development as a means to grow demand (Whitford & Ruhanen, 2014). That said, criticisms within the research have often overlooked the perspectives of small business owners, and therefore, the small and medium size business end

of the tourism industry warrants attention. The concept of an SME is defined differently by different agencies (Smith, 2006). For instance, Statistics Canada defines an SME as fewer than 500 employees, whereas the Atlantic Canada Opportunity Agency defines as SME as fewer than 50 employees (Smith, 2006). To some tourism businesses, such as family businesses, these numbers may seem large. Even though SME may struggle to compete with large companies that facilitate mass tourism, they are better positioned to differentiate goods and services by offering authentic and unique products and experiences. Compared to other SME, tourism SME are more likely to introduce product innovation and are more likely to benefit from increased sales and reduced costs as a result of their innovations (Andersson et al., 2002).

Yeoman and McMahon-Beattie (2016) outlined five drivers of the future of food tourism in Figure 2: 1) political capital, 2) visionary state, 3) foodie identities, 4) affluence and exclusivity, and 5) fluid experiences in a post-modern world.

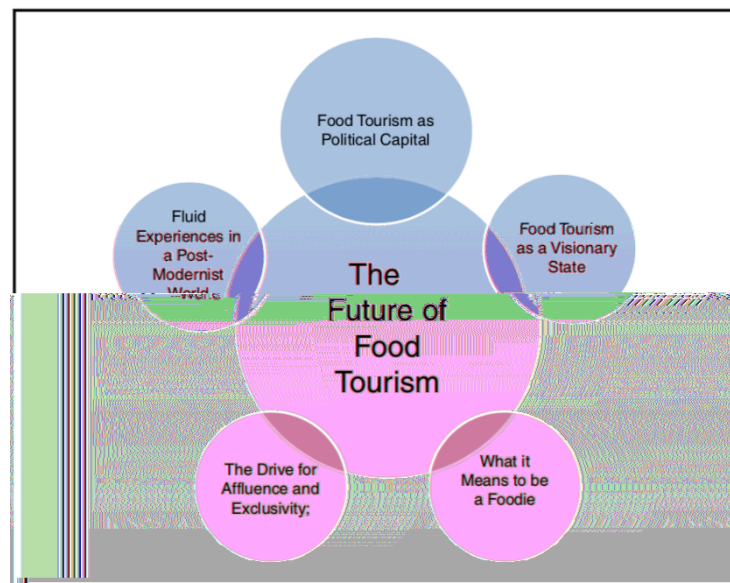


Figure 2. Drivers Shaping the Future of Food Tourism (Yeoman & McMahon-Beattie, 2016)

The connection between food, tourism, and capital is both objectified and embodied, and capital can be the economic, social, cultural, and political (Yeoman & McMahon-Beattie, 2016). These forms of capital are intimately bound and linked to a nation's culture and identity. Destination strategies have a political imperative to bring in wealth and economic propensity,

and therefore, tourism operators often chase high-yielding tourists (Yeoman & McMahon-Beatte, 2016). Natural capital delivers a flow of ecosystem goods and services; social capital in the form of relations of trust, norms, obligations and institutions fundamental for collective actions; human capital in the form of knowledge, skills, and capabilities to produce the technologies for well-being; and physical and financial capital that provide infrastructure and financial resources (Pretty, 2011). System resilience is dependent on all of these components. Entrepreneurs that inscribe their products with ecological credentials may do so to carve out niches for specialty food enterprises in demanding business environments, but also to complement their personal value system based on offering alternative political discourses and economic relationships within food networks (Holloway et al., 2007). Dougherty et al. (2013) provided seven discrete types of capital – social, financial, cultural, human, natural, political, and built capitals – which form the basis for community vitality. Applying these forms of capital in a community capitals framework, Dougherty et al. (2013) showed that the strong link between cuisine and place within local culinary tourism positively contributes social capital and human capital for rural community economic development by expanding markets; however, in doing so may strip natural capital and cultural capital (cultural values and artifacts of culture that inform our values) of host communities when businesses within food tourism networks hold uneven power relations in respect to political capital (the ability to both determine the availability of resources and influence the distribution of these resources within a locality). Similar to this, Sidali et al. (2015) explore

activities, boat tours, and guided tours. As expected by the authors, similarities between the businesses' culture and economic development were evident. Business development was

et al., 2013). It was reported that responsible tourism was viewed as a business opportunity but the key to successfully implement sustainable practices were driven by altruistic values and willingness to invest in costlier and long-term measures. When external drivers were more apparent, the main motivations were legitimacy (relating to improved relationships with different stakeholders, e.g., businesses partners and customers) and competitiveness values (referring to motivation of increasing profitability via greater efficiency or new market opportunities) (Carasuk et al., 2013). In a questionnaire that compared 1100 small tourism businesses of western and eastern Canada (British Columbia and Maritime provinces), decisions to implement environmental practices were highly dependent on external barriers surrounding finances and government tax rebates, but lack of resources/human capital was less of a concern (Dodds & Holmes, 2011). It was also noted that data on tourism's contribution to the Canadian economy (GDP, number of jobs, etc.) often does not reflect the indirect economic benefits that the products and services offer to producers and consumers (Dodds & Holmes, 2011). These findings support the TBL concept and how economic, social, and environmental capital go together and influence the practices and innovations of SME.

A study that mirrors the dilemmas facing NS was conducted in Cornwall, United Kingdom to boost rural regeneration, agricultural diversification, and relationships between production and consumption through food tourism (Everett & Aitchison, 2008). A policy analysis, including in-depth interviews with 12 local restaurateurs revealed that food tourism serves a key role in both preserving and developing a strong regional identity and enhancing environmental awareness which were showed to be linked with sustainability, and social and cultural welfare (Everett & Aitchison, 2008). The authors contested that food tourism has a role in securing the 'triple bottom line' of economic, social, and environmental sustainability. Not only does the TBL benefit tourism operators financially, but reconnecting tourists to the land via local food production helped to reduce the negative connotations associated with tourism and environmental impact (Everett & Aitchison, 2008).

Ecotourism businesses are another silo of tourism that can involve food which have been reported to contribute to the employment of local residents, gender equity, social cohesion, preservation of cultural traditions, and protection of wildlife and forests (Rodríguez-Piñeros & Mayett-Moreno, 2015). The economic benefits of forests and ecotourism are especially important in developing regions and low-income families (Rodríguez-Piñeros & Mayett-Moreno, 2015). Evaluations of small ecotourism businesses in four islands of the Caribbean revealed that owners were devoted to investing in environmental causes that preserve the land, even though their businesses generated modest income (Allport & Epperson, 2003). Another study on forest owner's perceptions of ecotourism was positive as tourism business activities worked to preserve the rural area and contributed to community well-being by increasing employment of local women (Rodríguez-Piñeros & Mayett-Moreno, 2015). These findings align with other research which indicated that preserving biodiversity also preserves the resources needed to sustain ecotourism businesses (Tomba, 1996; Rodríguez-Piñeros & Mayett-Moreno, 2015). From the standpoint of economic sustainability, small tourism businesses present alternative means of employment for residents of rural communities which have a history of becoming vulnerable and reliant on large companies that develop or expand in rural regions.

The concept of *social capital* was utilized to examine the planning and facilitation of a *Taste the Wild* food festival in a rural community of Scotland between 2015-2016 (de Jong & Varley, 2018a). Foucauldian discourse analysis revealed that the food festival was positioned as a "foodie" destination as a means of adding value to the local economy, rather than as an alternative local food system (de Jong & Varley, 2018a). The concept of social economy was used in a case study to examine four blueberry foraging initiatives in Northwestern Ontario (Stolz et al., 2017). All four initiatives were shown to have a low environmental impact, social benefits for all members of the local community, embodied an Indigenous worldview through reciprocity, experiential learning and sustainable practices for future generations of foragers (Stolz et al., 2017). Tourism activities for both local residents and visitors were also a part of these initiatives that enhanced their objectives to share knowledge, connect with nature,

promote sustainability, and support community well-being and social networks (Stolz et al., 2017).

Literature specific to ecotourism sustainability indicated the importance of shifting the value chain from a linear progression based on demand and financial capital, to a cohesive web based on value added to engaged community members who benefit from the values of local nature and culture (Gupta & Rout, 2016). Literature has been published on the worth of building networks of tourism business as a means of collectively promoting other regional development initiatives, particularly in rural areas (Ndou & Passiante, 2005; Tinsley & Lynch, 2001; Andersson et al., 2002). In this regard, many authors have applied actor network theory (ANT) in the context of both humans and non-human species to distinguish how the practices, innovations, and motivations of tourism operators and entrepreneurs are intertwined in societal relations (Murdoch et al., 2009; Holloway et al., 2007; Paget et al., 2010; Jóhannesson, 2012). The various typologies defining networks are congruent in the literature, describing a network as “a specific type of relation linking a set of persons, objects or events,” and related to one’s identity and human agency in sociocultural contexts (Tinsley & Lynch, 2001). Small tourism businesses working together can form a type of “coopetition” that assists with exchange, communication, and social networks to contribute to destination development (Tinsley & Lynch, 2007). There is a dearth of literature assessing the applicability of small tourism business networks. To fill this gap, Tinsley and Lynch (2007) conducted qualitative research with 24 small tourism business operators and discovered the potential for networks to exist is a relational cultural phenomenon associated with the destination, social networking, cultural differences, and size of the businesses. While research provides a philosophically basis for the idea of networks or webs of relationships, the pragmatic application for SMEs may be unrealistic. Outcomes from the research are still unclear due to differing viewpoints from tourism settings, business models, and value appropriation, which have resulted in a highly fragmented field of research (Tham et al., 2015). Drawing on previous studies, Tham et al. (2015) proposed a tourism value ecology (TVE) model to understand a business ecosystem and the interacting values that work to create paradigm shifts in sustainable development. Rather than understanding the value

chain as linkages between social networks, businesses, and producers, a value chain could be understood as the co-creation of knowledge and experience that may harness environmental stewardship and citizen well-being. Thus, the value extends to both direct and indirect economic and cultural benefits for sustainable development.

Why Study Nova Scotia?

According to Statistics Canada's quarterly estimates in 2020, NS has an estimated population of 940,600 people, and an estimated population density of 17.4 people per square kilometre (Statistics Canada, 2019). Approximately 65.9% of the population live inside a census metropolitan area or agglomeration, and 34.1% live outside these areas (Statistics Canada, 2019).

The land area of NS is 52,942 square kilometres (or 5.3 million hectares) (Statistics Canada, 2019; Government of Nova Scotia, 2013). The mainland includes 7,933 km of coastline but including all the islands (almost 3,800 small coastal islands) that are part of NS has a total of 11,044 km of coastline (GeoNOVA, 2019). Nearly 90% of the province's landmass is unsuitable for agriculture (Moody & O'Grady, 2019). Most of the peninsula rests upon acidic granite. Approximately 1.53 million hectares (3.8 million acres) or 29% of the province, and most of the submerged land/sea bed is Crown land (land under the administration and control of the Minister of Natural Resources) (Government of Nova Scotia, 2018). Other land areas, including wilderness areas, protected areas, highways, roads, and provincial buildings are owned by the province and are managed by other departments.

Nova Scotia is situated nearly halfway between the North Pole and the Equator in the Atlantic region of Canada (Statistics Canada, 2021). This region has also been referred to as the Maritimes, the Atlantic region, the Eastern seaboard, the Northeastern United States, and Southeastern or Eastern Canada (McManis, 2008). The terminology used depends on the geographical or cultural boundaries being described.

Four forest regions cover Eastern Canada, as drawn in Figure 3 (Deciduous, Great Lakes – St. Lawrence, Boreal, and Acadian) (Arnason et al., 1981). The vegetation generally changes from deciduous forests dominated by broadleaved species of high diversity in southern Ontario through mixed conifer-hardwood forests of central Ontario, Quebec, and Maritimes (New Brunswick) to low diversity conifer forests and parklands of northern Ontario, Quebec, and Newfoundland (Arnason et al., 1981). The Boreal forest, home to coniferous forest, extends a wide band across Canada and Alaska, and some maps include Newfoundland and Labrador. The Maritime ecology is quite different from that of the Boreal forest (Walker, 2008). While much of Canada has a Boreal forest, NS has an Acadian forest (Forest Nova Scotia, n.d.).

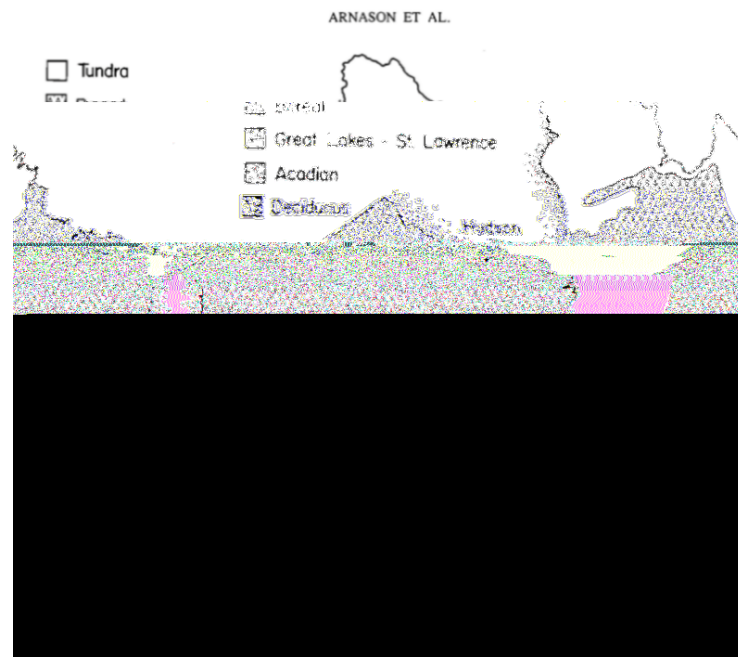


Figure 3. Forest Regions of Eastern Canada, showing the Huron-Ontario and Upper St. Lawrence sections of the Great Lakes (Arnason et al., 1981)

Forests are a diverse, dynamic, and productive resource that provide environmental, economic, social and cultural benefits (Forest Nova Scotia, n.d.). Nova Scotia’s forests cover over four million hectares, or 75% of the province (Moody & O’Grady, 2019; Forest Nova Scotia, n.d.). Thirty-five percent of forests are federal and provincial Crown lands, 10% industrial private woodlands, and 55% small private woodlots (Forest Nova Scotia, n.d.). What makes this region even more spectacular is its vast range of ecosystems and vegetation. The Nova Scotia

Department of Natural Resources has classified 14 different regional forest groups (similar species composition, site conditions, and successional pathways) with 88 vegetation types (plant communities that reflect differences in site conditions, disturbance regimes and/or successional stage) and 22 variants (Nova Scotia Department of Natural Resources, 2011). The forest groups classifications are listed in Table 1 and Figure 4 shows the provincial map of where they occur. This is meant to more figuratively highlight the diversity of NS, and the range of potential the subtropical rainforest climate enables through its evolution of WEP and other coastal wildlife.

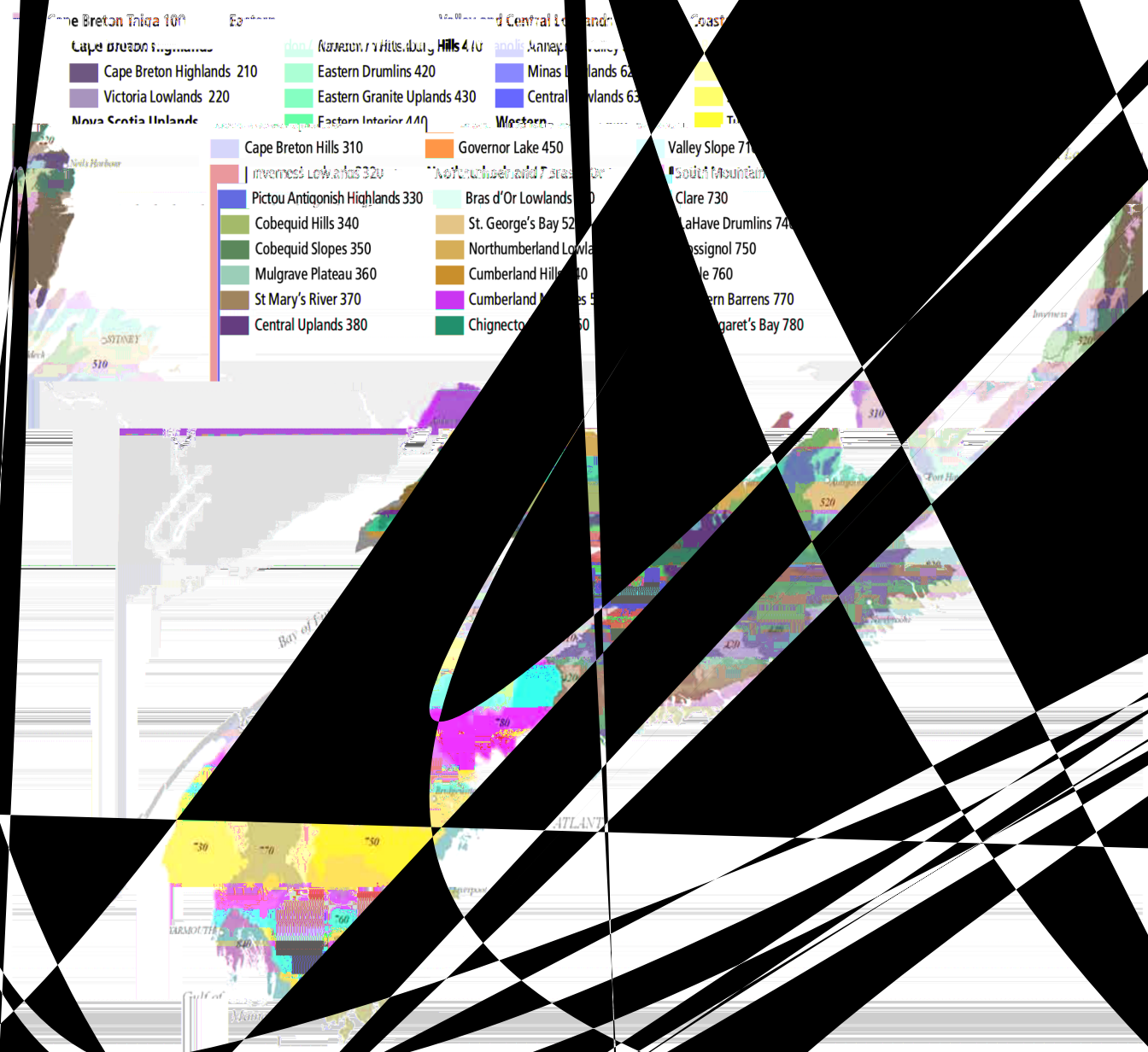
Table 1.

Fourteen Different Regional Forest Groups Present in Nova Scotia

Regional Forest Groups in Nova Scotia*
Cedar Forest Group
Coastal Forest Group
Flood Plain Forest Group
Highland Forest Group
Intolerant Hardwood Forest Group
Karst Forest Group
Mixedwood Forest Group
Old Field Forest Group
Openwoodland Forest Group
Spruce Hemlock Forest Group
Spruce Pine Forest Group
Tolerant Hardwood Forest Group
Wet Coniferous Forest Group
Wet Deciduous Forest Group

Note. *Within the regional forest groups in NS, there are 88 Vegetation Types (VT)/Plant Communities, and 22 variants.

Data from the Nova Scotia Department of Natural Resources (2011).



Notes.

Figure 4. Ecoregions and Ecodistricts of NS (NS Department of Natural Resources, 2011, p. 262)

Nova Scotia has a history of managing forests for logs and pulpwood (Sutherland, 2008). These traditional timber products have been extensively inventoried and researched as harvested resources (Sutherland, 2008). Approximately 50% of the province's forested land area is owned by small private woodlot owners, which contribute nearly 65% of the provincial wood supply to the forestry industry each year (Sutherland, 2008).

Nova Scotia Forests as More-than-timber

Foraging for forest foods occurs largely on Crown land and is perceived to compete with the dominant forestry industry, which focuses on extracting timber resources (Stolz et al., 2017). This has also aroused concerns of the safety of foraging in NS due to aerial glyphosate herbicide spraying permitted by the government to support large-scale forestry companies. Forestry companies that harvest timber are required by law to regenerate the trees to a predetermined height and quantity; therefore, the use of herbicides allows them to more easily achieve these targets by inhibiting the growth of other forest plants that would compete with coniferous trees (Wood, 2019; Stolz et al., 2017). Scientists and environmental activists have reported concerns of glyphosate residuals in edible and/or medicinal wild plants as these species tend to have broad leaves and fruits that absorb herbicides more readily (Wood, 2019). Analyses conducted in British Columbia showed unprecedented concentrations of glyphosate in the roots, shoot tissues, and fruit of native plant species; and doses persisted years following forestry spraying (Wood, 2019). Health Canada stands behind their decision of approving the use and safety of glyphosate. Evidence countering this claim is vast but remains inconclusive.

Ecotourism can contribute to the development of regional economies by increasing GDP by shifting livelihood options from agriculture and forestry to the tourism sector and release pre-existing pressure on natural resources, alongside bringing a notable change in employment structure (Gupta & Rout, 2016). In the case study of blueberry foraging in the Northwestern Ontario, community groups were able to showcase the benefits of their initiatives to the Ministry of Natural Resources and Forestry which led to reduced glyphosate spraying in the area during key harvest times (Stolz et al., 2017).

The diverse seasons and ecosystem of Eastern Canada nurtures a profusion of plants (Walker, 2008). These plants serve a crucial role in nature, as well as offer culinary and medicinal value for humans (Walker, 2008). Many land plants are adapted to salty conditions. The “Atlantic coastal plain” has been defined as the flat land along the Atlantic Coast from Florida to NS and describes Atlantic Coastal Plain Flora (ACPF) as a unique group of unrelated plants that are mainly restricted to the region (ACPF Group, n.d.). Over 90 ACPF species are located in the southwest of NS, of which, more than one third of these plants occur nowhere else in Canada. Twelve of these species are at risk and protected under federal and provincial legislation (ACPF Group, n.d.).

Clean Nova Scotia is a non-profit, non-governmental environment organization created in 1988 through an Act of the Legislature in Nova Scotia (Clean Foundation, 2019a). One of their webpages contains a list of native plants as a means of promoting vegetation that is adapted to local climate conditions and to help prevent the introduction of invasive species (Clean Foundation, 2019b). Some of the species listed are WEP, including partridge-berry, sweet cicely, bunchberry, sarsaparilla, indian cucumber root, beach pea, smooth gooseberry, bristly black currant, chokeberry, choke cherry, pin cherry, black cherry, wild raisin, inkberry, common juniper, sweet fern, clover, highbush blueberry, bayberry, black cherry, highbush cranberry, beaked hazelnut, serviceberry/Indian pear, and sumac (Clean Foundation, 2019b).

When researching WEP, it is difficult to give definitive geographical or cultural boundaries to a region; and it is important to get a sense of the cultural, ecological, and historical diversity of a region (McManis, 2008). A particular region can be defined by its provincial borders, but also its geographical and cultural boundaries. In attempting to provide a common definition of Eastern Canada, Walker (2008, p. 9) describes it as, "... a sense of cultural, ecological, and historical diversity of a region that, to the people who live here, feels like home."

Nova Scotia's Gastronomic Identity?

Food is often an intrinsic element of national identity and pride (Jacobs, 2009). That said, articulating what constitutes a Canadian cuisine has proven elusive (Jacobs, 2009). As Jacobs (2009) writes, "Canadian cuisine finds expression in the country's public and private institutions, in the way that recipes originating elsewhere have been interpreted, and in the use of native ingredients and practices." The tourism portal of the Nova Scotia Government Website posted a blog article called *10 Foods to try while visiting Nova Scotia* (Giffin, 2018). Listed were Digby scallops, wild blueberries, donair, dulse, oatcakes, apples, oysters, Acadian rappie pie, lobster and seafood, and Tidal Bay wine (Giffin, 2018).

Comprehensive reports have been made publicly available on WEP of NS (Kuhnlein & Turner, 1991). The Nova Scotian Institute of Science has made Walter Prest's *Edible Wild Plants of Nova Scotia* (1908) publicly available which presents a concise but detailed description of 77 WEP. A number of botanical references focused on WEP in NS and Eastern Canada have been published as paperback books, some of which include *Wild Plants of Eastern Canada* by Marilyn Walker (2008), *Eating Wild in Eastern Canada* by Jamie Simpson (2018), *Roland's Flora of Nova Scotia* (revised by Marian Zinck in 1998), *Edible Wild Plants of Nova Scotia* by Heather MacLeod (1988), *Edible Plants of Atlantic Canada* by Peter Scott (1948), *A Peterson Field Guide to Edible Wild Plants* by Roger Peterson and Lee Peterson (1978), and *Urban Foraging* by David Craft (2011). These books are intended to serve as field guides for amateur naturalists and experienced gardeners. The internet also contains a plethora of webpages with information on WEP in various regions. The website with top optimization on Google search engine is

NorthernBushcraft.com which is an online foraging guide on WEP and mushrooms in the Pacific Northwest and across Canada. Their guide on wild edibles in NS contains information on 25 berries, 77 plants, and 28 mushrooms (Northern Bushcraft, 2019).

Of the WEP in NS, lowbush wild blueberries are undeniably the most popular and widely known. Not only are wild blueberries the official symbol for NS's provincial berry, but government officials deem wild blueberries as NS's top fruit crop in terms of total value to the provincial economy by accounting for more than half of the value of all fruit production in the province (Government of Nova Scotia Agriculture News Release, 2015; McIsaac, 1997). Commercial development of wild blueberries in NS began in the late forties and early fifties and has steadily expanded to produce over 40 million pounds each year from over 40,000 acres in the province, and generates an annual income of more than 70 million dollars in export sales (Giffin, 2018; Wild Blueberry Producers Association of Nova Scotia, 2019; McIsaac, 1997). With numbers like these, one may wonder how 'wild' blueberries can be produced to this extent. Unlike other cultivated crops that are planted, wild lowbush blueberries are developed from native existing strands that occur naturally through the spread of rhizomes (Wild Blueberry Producers Association of Nova Scotia, 2019; McIsaac, 1997). The forest woodlands, fields, or abandoned farmland in which they occur become managed productive fields that are maintained through modern agricultural practices involving pruning, weed and pest control (McIsaac, 1997).

The "value" of wild blueberries described above in reports by the government and affiliated associations highly focuses on the economic value of wild blueberries in terms of quantity produced and monetary equivalent. Other mentionable statistics pointed to revenue gained through number of jobs and along the supply chain through direct and indirect transactions in processing, marketing, etc. These promotional tactics mirrors those of another important industry in the province, and of which greatly affects WEP: forestry. Compared to other resource sectors, the forest industry represents a smaller percentage of Canada's economy;

however, the dollar value added contributes more to the balance of trade than other major resources (Forest Nova Scotia, n.d.).

Research on the role of wild berries for the tourism industry of Newfoundland and Labrador emphasized the importance of valuing WEP as an “outdoor nature product” that contributes to health, wilderness, and resourcefulness (Everett, 2007). Other Canadian literature cited by Kolwalski (2014) indicated that the socioeconomic value of berry patches was deeply embedded in rural communities beyond economic resources. Given the close ties of NS residents within communities and to the East coast, it is likely that WEP hold great potential at instilling personal and cultural identity tied to the region.

Food tourism also holds vast potential for offering regions economic value, while countering arguments supporting the need for unsustainable forestry practices to keep economics afloat. Numerous studies cited by Rodríguez-Piñeros and Mayett-Moreno (2015) showed that ecotourism can provide a competitive income return compared with timber production and forest clearing for agriculture. Furthermore, the search for alternative, more sustainable, food networks remains a focal point in discussions around climate change. The precise nature of the links between local food and tourism, and how combining these sectors may create new worldviews and values as all forms of capital remains relatively unexplored (Sims, 2009).

Chapter 3

Framework and Theoretical Model

Ecosystem Services

Discussed previously in the introduction, the concept ES became popularized in the early 21st century and has remained a widely used framework for environmental management strategies (Kull et al., 2015). The four main categories of ES are: *Provisioning services*: Direct products obtained from ecosystems (e.g., food, medicine, fibre, fuel, water), *Cultural services*: Non-material benefits (e.g., education, spiritual values, recreation). *Regulating services*: Benefits gained from ecosystems processes (e.g., air quality, climate, water, erosion, pests, diseases, pollination, hazard mitigation), and *Supporting services*: Indirect or long-term processes that are necessary to produce provisioning, cultural, and regulating services. The categories of the ES definition centres on four main elements: something out there (ecosystems, nature, forests, watersheds, etc.), provides things (resources, goods, products, services, etc.), useful to people and/or nature (health, livelihood, fundamental life-support systems, species, etc.), and this should be valued (often in monetary terms) (Kull et al., 2015).

The proliferation of ES discourses has motivated investigation into how ecological principles are applied in market-like settings (Bassett & Peimer, 2015; Gordon, 2018; Derek, 2021). The market-based economy has increasingly appraised natural resources in terms of their financial value. This had led to a very human-centric worldview of the human-nature relationship. The tourism industry has also been criticized under this scope, with new streams of ecotourism and sustainable tourism being applied. Entrepreneurship and innovation in tourism and natural resource use have especially garnered attention in policy and academic discourse as main drivers of economic growth (Jóhannesson, 2012; Rodríguez-Díaz & Espino-Rodríguez, 2008). Nova Scotia is no exception from these trends, especially in the case of boosting small and weak economies by driving novel industries offering destination competitiveness and regional development. Jóhannesson (2012) contended that it is necessary to trace the practices through which motivations of entrepreneurship and drives for action emerge; and that these insights

can be captured through a relational approach that politicizes the way practices shape culture and the economy (Jóhannesson, 2012). The intersections within diverse relations are what enact economic development, innovation, fellowship, and professional identity of practices (Jóhannesson, 2012). Finding a way to intercompare the diverse services from nature, well-being, and cultural importance, in addition to economic development is important to decision-making and policy (Skubel et al., 2019; Gordon, 2018). To this end, a relational approach aims to capture the social and cultural roles of WEP, in addition to the economic and environmental values. This approach enables the researcher to rethink complex people-nature relationships and networks between the more-than-human actors inhabiting places.

Clark and York (2005) diplomatically discussed the environmental political arguments, one in which places high importance on government regulation, the other which believes in more *laissez-faire* market applications. From the economist perspective, as the affluence within societies rises, the value the public places on the environment (wilderness areas, clean water, etc.) will increase. This, in turn, will place pressure on governments and businesses to invest in eco-friendly commodities and environmental initiatives. What seems to almost romanticize philosophical underpinnings of Adam Smith, it has been professed that “they will be able to afford due to the wealth generated by economic expansion” (Clark &

intentional, aligns with the two streams in which ecology as a concept has been developed. One is through civil society as the ecology social movement, the other is through academia as a scientific discipline (Little, 2007). The ecological paradigms in which the concept of ecology has been applied are important to understand the scope of application and represents ecological science's response to new political and environmental realities faced by contemporary societies (Little, 2007). Studies of human-nature interactions tend to congregate within four main ontological doctrines: environmental determinism (environments determine human behaviour and culture), cultural determinism (culture determines human behaviour), possibilism (culture determines human behaviour but environments limit what humans can do), and political ecology (attempts to answer why human cultures interact with environments the way they do) (Bruce, 2009; Hinchliffe, 2008). Each sub-field of ecology produces its own body of knowledge and offers its own insights, which can be used to understand different dimensions of socioenvironmental realities (Little, 2007). Ecological research works on both sides of the divide between the biophysical world ("nature") and the social world ("culture") (Little, 2007). Ecosystem services "directly or indirectly contribute towards meeting a human need or want" and are, therefore, placed at the interface between the ecological and the social system (Fischer & Eastwood, 2016). The ontology of ES can be analyzed through its two component metaphors: ecosystems and services (Kull, de Sartre, & Castro-Larrañaga, 2015).

"Ecosystems"

Scientific discourse frames ecosystems within biophysical realms of nature like forests, lakes, deserts, and other "natural" areas. Under this perspective, humans play a minor role in nature contexts (Kull et al., 2015). When ecosystems have an obvious human imprint, there is an inclination to specify places with additional qualifiers like "urban" or "agro-" (Kull et al., 2015). Ecosystems refer to assemblages of species and their environment and the processes by which they interact (Kull et al., 2015). Ecosystems can be understood as fitting in between conceptions of *external* nature separated from human influence and *universal* nature, the all-encompassing nature of which humans are a part (Kull et al., 2015). Kull et al. (2015, p. 128) wrote, "if the concept represents undercurrents of diverse discourses, it has finished by taking

on its own life, its own autonomy, its own agency. It participates in the social construction of nature in both senses – as an ontological construction of nature and as a materialization of this construction.” The universal nature entanglements that reify social difference and hierarchy is what political ecologists have particularly focused on; however, these critiques have, once again, conceptualized nature as an inanimate substrate of human affairs (Poe et al., 2014). Most landscapes (including those deemed “wild” or “wilderness” areas) have been modified by people and hold cultural resonance (Gordon, 2018). *Socionature* is a concept introduced to counter the framing of nature as something distinct from human society (Noll, 2019). Understanding the world to be inherently social and natural at the same time, socionature emphasizes the continuous and mutual production of people and their natural environments (Ahlborg & Nightingale, 2018).

“Services”

Cultural landscapes are at the interface between nature and culture and include tangible and intangible place-specific values (Gordon, 2018). Services are the realized flows of capacity and potential from ecosystems that provide benefits to people (Fischer & Eastwood, 2016). The *services* concept was created from the marrying of ideas within economics and ecology, to externalize pleasures gained from production and consumption (Kull et al., 2015). Cultural benefits refer to dimensions of human well-being that can be associated with interactions between environmental spaces and cultural practices (Fish et al., 2016, p. 216).

It is also important to differentiate between a cultural good and a cultural benefit. Cultural goods describe the interactions between values, services, and benefits that will sometimes be amendable to market transactions (Fish et al., 2016). The “goods” of *goods and services* were dropped from ES for simplicity but are still considered part of the *services* definition (Kull et al., 2015). Together, cultural practices describe expressive, symbolic, and interpretive interactions between people and the natural environments (Fish et al., 2016, p. 216). The “services” of WEP food tourism were understood through the internally (cultural benefit) and externally (cultural good) recognized ways. As a cultural good, WEP were described in the economic sense as an

activity or condition that one pays for, but also as a cultural benefit, such as an altruistic action or contribution to place-making (Kull et al., 2015).

Ecosystems were understood in the biological sense such as the outdoor spaces of practice, as well as the cultural settings of practices that transform or create engagements with the environment (e.g., restaurants). It was my hope to relinquish nature from material confines and refute humans' passivity in the cultural equation by applying a relational framework that could better illuminate its "liveliness" (or agency) as it transforms immaterial and material cultural and place-based practices.

Theoretical Model and Conceptual Framework

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) added relational and intrinsic valuations of nature to the ES framework to make it more relevant to multiple knowledge systems (western science, Indigenous and locals, and practitioners) (Stålhammar & Pedersen, 2017). Novel frameworks have been developed from the IPBES approach, including the relational Cultural Ecosystem Services (CES) framework by Fish et al. (2016) which has received empirical support from other scholarship (Tandarić et al., 2020; Stålhammar & Pedersen, 2017; Gordon, 2018; Derek, 2021).

Benefits that arise from ecological phenomena cannot be reduced to one ES or ES category, but rather sets of ES ("ES bundles") that occur together across time or space (La Rosa et al., 2016). For example, categorizing an edible crop under *provisioning services* for its food benefits takes meaning away from its other benefits, such as income for farmers, cultural significance of preparing and serving it, etc. Many times, *cultural services* benefits are not emphasized likely due to being elusive and difficult to quantify (Tandarić et al., 2020; Gordon, 2018). Unclear disambiguation between elements within ES bundles can also lead to misinterpretations by developers and planners (Tandarić et al., 2020). To reject the linear and unidirectional constructions of nature that ES discourse rests upon, the conceptual CES framework by Fish et al. (2016) emphasizes the relationality between non-humans and humans, and produces

knowledge and language equipped for policy developers and decision-makers. To do so, the framework focuses on cultural ES but instead of the conventional subject-object ontology where cultural services are the *a priori* products of nature that people utilize for benefits, cultural services are understood as the relational *processes and entities that people actively create and express through interactions with ecosystems* (Fish et al., 2016). Conventional ES epistemologies have considered cultural services to entail non-material benefits, such as sense of place and well-being, but seldom are they described beyond simplified one-way outcomes (e.g., aesthetical pleasing, stress relief, etc.) (Gordon, 2018). The material and non-material benefits of ecosystems are to be recognized in their entirety and the relational processes that make people-plant relationships possible – and, ultimately, sustainable. The “cultural” dimension in this framework is co-determined and co-produced through human-non-human relationships (Fish et al., 2016). Exploring WEP in food tourism from this epistemological approach describes cultural services from neither a strictly materialistic or idealistic ideology. Society’s organization and development is determined by the cultural values and meanings ascribed by human consciousness (as in the case idealism) and the material conditions and modes of production (as in the case of cultural materialism). As Fish et al. (2016, p. 213) writes, “cultural dimensions of human well-being are as much visceral, embodied and ‘felt’ as they are constructed in thought, reason, and cognitive processing of the environment.” Cultural goods and benefits associated with ecosystems arise from a series of cultural practices and the related cognitive, non-cognitive, and embodied interactions occurring between people and a range of (culturally constructed) environmental spaces (places, localities, landscapes or seascapes) (Fish et al., 2016). The framework by Fish et al. (2016, p. 212) defines cultural ecosystem benefits as “the contributions ecosystems make to human well-being in terms of the identities they help frame, the experiences they help enable and the capabilities they help equip.” To understand the value of WEP constituted in food tourism, significance and meanings attached to WEP are revealed through the cultural practices and processes that shaped food tourism business owners/operators’ identities, experiences, and capabilities. Processes of cultural production in WEP food tourism can be revealed through discussions with food tourism business owners/operators and by characterizing values, beliefs, and behaviours. In distinguishing these

qualities, culture is not to be reduced to a representation of ethnicity, genetic characteristics, or geographical origin or descent classified by political and national borders. Again, culture is both an individual and collective phenomenon “instituted” by societal interactions (Fish et al., 2016; Gordon, 2018). The relational benefits of WEP (identities, experiences, capabilities) that tourism activities give rise to can, therefore, be set in a relational framework in which people interact with nature (through the cultural landscape) rather than a deterministic one (Gordon, 2018).

The key tenets of the conceptual model are described in Table A1 and summarized graphically in Figure 5.

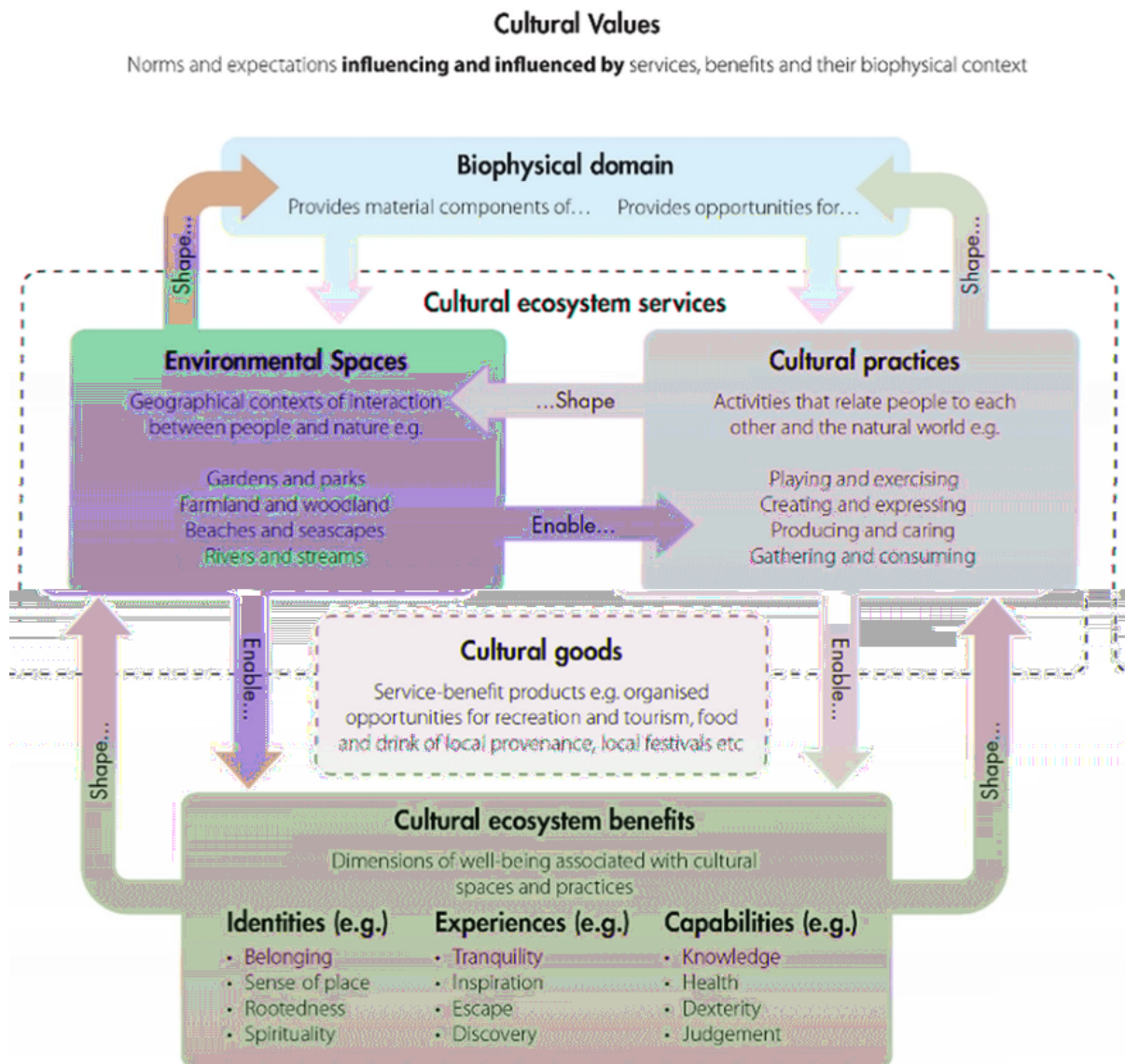


Figure 5. Graphical Summary of CES Conceptual Framework (Fish et al., 2016)

Relationships with Nature Explored through the Relational Ecologies of Belonging

Explorations that use the CES framework are strengthened with additional theory to closer examine specific themes within the data (Fish et al., 2016). For nature-based tourism studies, integration of existing theory, conceptual analysis, and practices from the social sciences can support investigations (Gordon, 2018). The analysis was strongly informed by political ecology (PE) theory, specifically the analytical themes of the “relational ecologies of belonging framework” put forth by Poe et al. (2014) that focused on cultural belonging and identity, belonging and place, and belonging and more-than-human agency. This assisted greatly with maintaining ontological plurality between nature-culture debates (Fish et al., 2016). Adopting a relational framework enabled a rich description of WEP in food tourism beyond the products and services involved in market exchanges but as the entities within those interactions.

Adapted from an examination of relational urban spaces (Poe et al., 2014), people-nature relationships are layered and contingent processes, practices, and projects of inhabitation and belonging in spaces. “Culturenature” practices and values are all those culturally-inflected norms and actions that shape specific human relationships with more-than-human others (Sullivan, 2016). By adopting the theoretical basis of relational ecologies of belonging, “relationships with nature” were understood as “relational nature” (Poe et al., 2014) through relationships between people, places, and more-than-human nature.

Additional Theoretical Terminology and Descriptors

The notions of the PE (identity, place, agency, and mobility) and the three constituent analytical and empirical themes of the relational ecologies of belonging framework developed by Poe et al. (2014) helped to classify and organize codes and typologies embedded within the theoretical model. The descriptions and indicators for each tenet are outlined below and summarized in Table A2 and graphically depicted in Figure 6.

Figure 6. Graphical Depiction of Analytical Tenets of Relational Ecologies of Belonging

Cultural Belonging and Identity

Cultural belonging captures the many perceptive aspects that underpin an identity and place. Using the definition applied by Fish et al. (2016), identity describes the cultural meanings through which people understand themselves and their relationship to the world around them. Belonging is a cultural dimension of well-being constructed in thought, reason, and cognitive processing of the environment. Qualities of ecological phenomena (and relationships with nature) are enmeshed in processes of identity formation through which ideas of affiliation and attachment develop (Fish et al., 2016).

Within the framework of Poe et al. (2014), cultural belonging focused heavily on ethnic background and migration/country of origin. Culture is not to be reduced to an ethnic community with biologically inherited traits passed on genetically. Rather, culture is acquired and defined as those behaviours or ideas that are acquired historically through interaction with society (McKay, 2009). Research has revealed that people involved in NTFP activities are a

must attend to the relational value of food, and the tangible and intangible role that 'place' plays (Dejardins, 2010; Nyman, 2019).

Belonging to a place is an assemblage of social, material, affective resonances, experiences, and resources (Raffaetà & Duff, 2013). Food from the Earth, as the materiality of a place, holds strong connections to these dimensions and the ability to impact one's sense of belonging. Ethnographic studies that applied theories of place and place-making described sense of belonging as an embodied connection to the social and material manifestations of a place; and not dependent on cultural affiliation, nor psychological response (Bennett, 2014; Raffaetà & Duff, 2013). A person's sense of belonging is highly individual and continuously formed from positive and negative experiences, from meaningful places and perceived gaps (Desjardins, 2010; Benson, 2014). Sense of place was first examined by describing "the characteristics intrinsic to a place as a localized, bounded, and material geographical entity (e.g., landscape)," and then linking "sentiments of attachment and detachment that humans experience and express in relation to specific places" (Desjardins, 2010, p. 127). As an indicator of sense of place, sense of belonging was captured in the ways in which people conceptualize their bonds to the neighbourhoods where they lived, worked, learned and went for recreation (Desjardins, 2010), and how practices played a role in place-making and created particular spatial knowledges that shape concepts of nature. Sense of community was another indicator of sense of place that was revealed through narratives of respondents about the social aspects of place and the features of community that they valued (Desjardins, 2010). Similar to coding by Pappalardo (2019), relationships with nature were seen through participants' strong sense of place and coded when they explained that their existing or emerging relationship with nature, land, or plants help them decide what, when, and where to harvest. Place-based identities/belonging can also fuse a desire to protect the local area (Restall & Conrad, 2015; Bennett, 2014). It is argued that one's moral duty to protect a place and nurture it for future generations is influenced by the historical significance they hold to that place (Poe et al., 2014). Other scholars believe that one's moral way of being is not limited to the amount of time spent in a place (Benson, 2014).

People and other beings are constantly on the move, particularly in cosmopolitan areas (Poe et al., 2014). A relationship between nature and self is becoming increasingly conflicted by people's cognitive dissonance from nature, and the perception of natural areas as independent from human agency (Restall & Conrad, 2015). Urbanization has contributed to the recent surge of human mobility which can further compound a sense of displacement by casting a form of 'placelessness' (Poe et al., 2014). Ethnoecologists believe that local, long-term inhabitation of a particular place is necessary for acquiring meaningful ecological knowledge (Poe et al., 2014). Poe et al. (2014) argues that this mobility does not preclude a deep sense of attachment to place, rooted in local forms of spatial and ecological knowledge. Here, the belief is that attitudes towards nature, belonging, and culture are highly contingent, contradictory, and mutable (Poe et al., 2014).

Belonging and More-than-human Agency

Agency (human and otherwise) is the ability to affect and be affected by others (Poe et al., 2014). Agency is an emergent property of material-semiotic assemblages (processes created and maintained through their enactment) of multiple entities and the diverse spaces-times that constitute them (Poe et al., 2014). The agency and mobility of more-than-human entities can be expressed through acts of giving, receiving, and interacting between participants and more-than-human others that produce a sense of belonging in place regardless of any given species' origin. Environmental stewardship was described through the theme of belonging and more-than-human agency with indicators focused on harvesting practices, actions in the community, and knowledges mobilized through food tourism products and services. A sense of agency is revealed through how agents create meaning about their environment and shape it in minor or major ways (Desjardins, 2010). A greater degree of social involvement is indicative of a particularly strong commitment to a place, sense of place, or as intentional behaviour, such as purchasing decisions and places of exchange that supports a person's business while simultaneously contributing to place (Desjardins, 2010). This also encapsulates forms of social stewardship that extends to people-nature relationships that affect ecosystems. Indicators of

environmental stewardship can involve actively seeking to learn more about what practices are sustainable, mentoring others in sustainable harvesting practices, and treating plants and the environment with respect (McLain et al., 2017).

Given the contrasting meanings behind the word nature, it is no surprise that measuring and describing outcomes of interventions aimed at improving peoples' relationships with nature has been difficult. A systematic review of 105 articles published between 1997 and 2016 examined the link between environmental education and environmental outcomes based on selected terms from a well-cited synthesis, *Rockström et al., 2009a, 2009b planetary boundaries* (Ardoïn et al., 2020). There was little support for a simple, linear or straightforward model that could commensurate a shift in ecosystem quality. Instead, the review illustrated the need for a collaborative path to achieve measurable conservation outcomes, a path requiring the creation of spaces for various stakeholders to share and co-produce knowledge, negotiate, and innovate (Ardoïn et al., 2020). Stakeholders in diverse WEP food tourism practices and within their professional reaches are particularly well-situated for these decisions. The setting in which WEP tourism takes place presents an array of social, ecological, and economic assemblages. These assemblages are replete with a relational entanglement of humans and non-human species (Nyman, 2019). This speaks elegantly to WEP tourism as a material manifestation of nature and place, and acts as an important study point to investigate "which assemblages come to 'matter', how, and why?" (Poe et al., 2014). The relational approach situates the researcher in the thick of these arguments for an open interpretation of how WEP are utilized within the supply of food tourism and the biophysical and cultural contexts in which the greater sustainability and health of humans and non-human species rely upon.

Chapter 4

Research Method

“Let the region be found through the work you’re doing.” – Laura Taylor, 2014

Qualitative Descriptive Method

Researchers have applied quantitative methods to study material features of WEP and their utility, while qualitative methods have been employed to explore the subtlety and complexity of behaviours related to their use (mainly by foraging hobbyists and communities for personal use). Qualitative research has predominately applied ethnographic methods to explore people-WEP interactions (Pierce, 2014; Landor-Yamagata, et al., 2018; Poe, et al., 2014; McLain et al., 2014; Jones, 2002; Giesting, 2016). A qualitative descriptive methodology was selected for this study as the aim was to describe, in detail, how WEP are utilized and valued in for-profit streams through an open exploration of the people who operate food tourism ventures and their WEP practices. Descriptive methodology is appropriate when there is little known about the phenomenon in question (Bradshaw et al., 2017; Fawcett & Downs, 1986). Qualitative methodology was employed to fill an existing research gap on the extensive use of WEP in for-profit streams whereby nuanced and detailed data on business owners’ values and WEP utility could be attained. This was necessary to elucidate the experiences and perspectives of individual participants from a wide-range of WEP food tourism practices. It also assisted in the identification of key conceptual issues to be considered in relation to contemporary social landscapes and business practices.

Descriptive methodology aims to describe the variables the researcher is measuring. Research on WEP using descriptive methodology has utilized the Cultural Important Index (CI) to study ethnobotanical information and value of certain plant species in different locations (Pardo-de-Santayana et al., 2007; Hinnawi, 2010). Descriptive questions in the research have focused on the plant name, knowledge of the use of plants in the past and present, consumption way, how to get plants, the most important threats facing these plants, knowledge on the growing season, production and conservation (Berihun & Molla, 2017; Hinnawi, 2010; Ojelel et al.,

2019). Other descriptive research specific to ecological knowledge and food as ES has focused on aspects of nutrition, spatial-temporal distribution, and population dynamics (Garavito-Bermúdez, 2016). Few studies have interviewed people who use WEP to explore responses to law and policy (Pierce, 2014), nor have in-depth interviews been conducted with people who use WEP in commercial contexts in NS. By describing the WEP practices and perspectives of food tourism operators, ecological knowledge was investigated from the source in which it is generated, and the complex relationships between individuals and the natural environments that they live and work in.

Using qualitative descriptive methodology, a process of philosophic inquiry was used to describe and classify phenomena (Fawcett & Downs, 1986). Philosophic inquiry, as a descriptive research process, attends to worldviews and metaphysical viewpoints with the goal of discovering epistemic and ontologic knowledge for practice (Leininger, 1990). Meaning may be articulated in the form of stories, myths, metaphors, ethical roles, social practices, and ontological frameworks (Tadaki, 2017). The process of philosophic inquiry involves developing typology of various concepts prior to data collection (Tadaki, 2017). Identification of descriptors and components that the data may be coded or classified under, while retaining the meaning-in-context, helps to establish credibility and preserving accuracy of data (Leininger, 1990). Classification theories (also referred to as typologies or taxonomies) of descriptive research states that the dimensions and characteristics of a given phenomenon are structurally interrelated, and can be mutually exclusive, overlapping, hierarchical, or sequential (Fawcett & Downs, 1986). During the analysis, the tenets, descriptors, characteristics, and inherent assumptions are used to label, organize, and connect the data to understand the phenomena under study (Leininger, 1990). Creating and indexing codes according to *a priori* themes of a framework helps to find similarities and dissimilarities and new or vaguely known knowledge identified previously (Leininger, 1990). In the case of this research, the typology of the intersecting notions of CES framework served as a guide to identify and describe how WEP (as nonhuman agents) are mobilized as products and services (cultural goods – service-benefit

products) across the food tourism practices (biophysical/cultural contexts) of individuals (identities, experiences, capabilities).

Data Collection

Data Recruitment

Studying the Context of Nova Scotia

Studying the phenomenon of nature through the ontology of NS as a “boundary object” is similar to that of ES. As mentioned, the ontology of ES entails two component metaphors: ecosystems and services (Kull et al., 2015). Likewise, nature conceptualized within the region of NS entails provincial political boundaries, geographical topology, and cultural activities and identities, and discursively moves across local and global contexts. The *boundary objects* have to translate between different actors but be robust enough to maintain a common identity across sites – a reason why buzzwords like “sustainable development” and “biological diversity” are common, albeit, very broad (Kull et al., 2015). The recruitment strategy focused on attaining a sample that represented diverse WEP practices that social norms and cultures are a part of, such as those of institutions (e.g., higher education), professional organizations (e.g., certifications and associations), industries (e.g., culinary), and settings (e.g., hiking trails). This could better speak to the impacts and opportunities that filter through and across scales of institutions and actors (Kull et al., 2015). Power is manifested when specific configurations between human, non-human, material, and symbolic elements enable or constrain particular realities (Munro 2009). [Continuous reflection and reading allowed me to step outside the confines of provincial boundaries, in order to study the region of NS as a place where food tourism influences and is influenced by cultural values throughout the world (“global assemblages”). This also helped me to better conceptualize nature as a fluid biophysical landscape with an equally significant sociocultural backdrop.]

Maximum Variation Sampling Strategy

Maximum variation sampling (MVS) was used for participant recruitment to gain a fuller description of food tourism practices and values as a whole. The settings in which WEP are (or

can be) collected and transformed into products and services are copious and wide-ranging. To make sense of food tourism and the myriad of practices and the spaces in which they occur, the method had to unveil the main features and core values of practitioners in a range of cultural and place-based activities. MVS is a purposeful sampling strategy in which researchers aim to study very different individuals as a means of capturing common patterns that emerge from great variation, and thus, represent core or central experiences (Goodson & Grzymala-Kazlowska, 2017). Selecting a small number of cases that maximizes the diversity relevant to the research question helps to understand how different people, in different settings, and at different times make sense of the phenomenon in question (Palinkas et al., 2015; Robert Wood Johnson Foundation, 2008). This technique was appropriate for the research objectives of the study. The research goal to explore and describe food tourism involving WEP required an open exploration and interpretation of the many practices taking place. The cultural landscape of NS's food tourism industry involving WEP could not be gained if inclusion criteria was limited to one specific practice or professional discipline. Attaining experiences from a wide range of different people (heterogeneous sample) within the study context reduces the tendency to generalize based on preconceived notions of specific group characteristics and demographics like ethnicity, age, gender, etc. (Goodson & Grzymala-Kazlowska, 2017). This feature of MVS to minimize bias is particularly useful for exploring the culture of contemporary complex societies (Goodson & Grzymala-Kazlowska, 2017). Studying a range of cultural experiences was also necessary for making sense of the constructs of nature. In nature-based tourism, nature can only be understood as an ideological marker influenced by geopolitical and cultural factors, social constructions, and historical meanings (Zhang, 2013). To describe how food tourism influences relationships with nature, the research needed to understand how perceptions of nature may relate to people's positions of inhabitation in cross-cultural settings (Zhang, 2013). MVS also aligned with the research objective to make recommendations for policy and practice. A sample with greater difference across participants better represents diverse populations in real-world settings. When greater differences exist, the more significant are the commonalities identified for building a solid foundation for the policy development that caters to collective diplomacy (Goodson & Grzymala-Kazlowska, 2017).

Inclusion Criteria

Inclusion criteria of this study included any owner, operator, or manager involved in food tourism businesses that utilize WEP in NS. Operators included entrepreneurs or employees who were in charge of facilitating WEP activities (e.g., foragers, foraging guides, chefs/cooks). Participants were adults (18 years of age or older), and either born residents, migrated, or newly moved residents to the province of NS. Exclusion criteria was anyone who was not of legal age to be employed for work in the province of NS (less than 14 years of age) or not eligible to own, operate, or manage a registered business (less than 18 years of age).

The list of potential participants was drafted prior to recruitment using Google search engine and social media platforms. The initial search yielded ten businesses that marketed WEP products and services as a main feature of their business. The goal was to attain interviews with participants from five of these businesses. This list later expanded with the addition of following tags and hashtags, events, and snowball recruitment. The WEP focus of these businesses was food and educational tours and workshops and restaurant and culinary experiences, however, most of them offered many other products and services, such as formal courses and programs, retreats, overnight accommodations (hotels, inns, resorts), food product development and research, and food provisioning services. Businesses ranged in size; some offered services to groups of ten or less at a time while others sold products through retail (including restaurants) or online with an undetermined customer base and volume. Businesses were found in all regions of the province (spanning the north, south, west, and east quadrants of NS). Potential participants were contacted directly via email with a formal invitation to the study (see Appendix B). When a response was not received within two weeks, a second email was sent with a follow-up message accompanied by the formal invitation. Responses were received for all invitations except for one in which no further contact was made. A snowball strategy accompanied MVS recruitment. Snowball sampling is a purposeful qualitative method of data collection applied when samples with the target characteristics are not easily accessible (Naderifar et al., 2017) – such as in the case of this research where small ventures using WEP

were less advertised and many were known through word-of-mouth. Following the interviews, a discussion regarding other potential contacts took place. This entailed asking participants if they attain WEP from anyone else or know of other food tourism businesses that use WEP, and seeking their contact to invite them to participate in the study. Most suggestions reiterated the same businesses from the initial search but six new ventures were also illuminated.

Interviews

Semi-structured in-depth interviews, either face-to-face or by phone were the primary sources of data. Interviews were audio-recorded, with permission, and transcribed for thematic analysis. In-depth semi-structured interviews are appropriate when the goal is to generate a detailed description and understanding of a social environment, and to use the data to test concepts of an established theory or to develop a conceptual framework for subsequent research (Silva, 2021). Semi-structured interviews consist of a basic interview plan with a set of questions that are positioned as the interview evolves (Pachero et al., 2018). Seven open-ended questions guided the interviews, and a final question about recommendations for snowball recruitment (see Appendix C).

The interviews were open-ended and conversational in tone to facilitate participant-led dialogue about business products and services, and how and why environments matter to people. This does not narrowly specify which social–environmental relationships are legitimate or meaningful for a given context; instead, it seeks to paint a rich picture of environmental meanings and ethical roles (Tadaki, 2017). This open-ended and epistemological approach to data collection allowed participants to bring up their own issues and values related to WEP and food tourism. Active listening and self-awareness on my part was key to avoid filler comments or additional questions that could sway the direction of the conversation or bias responses.

The interviews began with an open-ended question about what led participants to their field of work and practices involving WEP. This helped participants recall past experiences, and express perceptions about those experiences and the motives behind their WEP endeavours. To explore inherent values of past and current practices, questions probed for descriptions, stories and

histories, and reasons why participants do what they do. The second question asked about their products and services and related activities in order to understand how WEP are situated as cultural goods and the various streams of their utility. The third question directly sought participants' perceived benefits of WEP and cross-examined responses with dialogue throughout the interview, as well as logistical details for a richer description of business practices involving WEP. Drawing emergent themes from self-reported and individually-identified meanings is much more powerful than interpreting data from specific questions on price, proximity, environment, local food, nutrition, health, culture, etc. (Desjardins, 2010). The next questions helped to further unveil participants place attachments and attributes of the biophysical and cultural contexts that define their work, followed by discussions about participants' hopes for the future helped to elicit fundamental values and desires. Additional questions were asked throughout the interviews to explore certain topic areas in greater depth. Additional questions that arose in the interviews asked participants the "whys" and "how's" of their experiences and practices to openly interpret meaning in their realities (e.g., "why do you think that is?", "can you tell me more about ___?", "what do you mean when you say ___?"). Participants were also asked more direct questions about issues emphasized in the literature and implications related to their practice (e.g., "what needs to be done?", "what are your thoughts about ___?"). Asking participants if one outcome is preferred over another can ignore the multiple meanings and outcomes of social and environmental change, and effectively privilege a narrow way of relating to the environment (Tadaki, 2017). The final question was meant for snowball sampling and asked if participants could recommend people or businesses for the study. Recommendations illuminated the tight-knit community of people working with WEP within a broad industry of food tourism, and while there is a relatively small sample of people who work with WEP, recommendations from participants were not only people with similar occupations (e.g., chefs mentioning chefs) but those in different types of business initiatives. Overall, the data gathered from the interviews rendered insight into how the WEP food tourism activities are positioned as related to ecological practice, sustainable development, and discourse.

Data Analysis

Transcription

Interviews were transcribed verbatim using Microsoft Word and coded using MAXQDA Plus 2020 data analysis software. Transcriptions were completed within 24 hours of each interview and my hand-written notes taken during or after each interview were typed and immediately shredded. Transcriptions were reread while listening to the audio recordings to ensure that the transcripts were accurate and words, phrases, names, and nonverbal communication (laughter, sighing, pauses and inflections within speech) were not missed, misspelled or misinterpreted. Nonverbal communication was marked with brackets, and ellipses were used when participants “tailed off” or paused while speaking, when the beginning of a statement continued from a previous thought, or when two segments of a narrative were conjoined to shorten the excerpt reported. Relistening to each interview in its entirety also helped to grasp meanings and discover aspects of the data that may have been overlooked during the actual data collection.

Coding for Themes

Qualitative description research seeks to discover and understand a phenomenon, a process, or the perspectives and worldviews of participants and provide a rich description of the experience as close to the viewpoint of the participants (Bradshaw et al., 2017). Thematic content analysis used a descriptive approach to better report a “straight description” of the data (Bradshaw et al., 2017; Llausàs et al., 2019). This involved indexing both short and long meaningful passages of each transcript, followed by a line-by-line open coding method to comb through and identify emerging findings from the data (Khandkar, 2009; Bradshaw et al., 2017). Codes were derived using the pre-selected framework (deductive) and open interpretations of the raw data to discover unexpected aspects of participants’ experiences and further refine themes (inductive) (Gale et al., 2013; Thomas, 2003). Using both inductive and deductive approaches together strengthened the analysis by using previously defined theoretical concepts but remaining open to new concepts and themes that emerged (Pierce, 2014; Gale et al., 2013). MAXQDA memos helped to organize the data electronically and make notes about my thought processes and further areas to explore. Handwritten mind maps to draw links

between codes and the concepts of the theoretical model were useful for seeing patterns and pinpointing the most prominent codes and the cogency of findings. First-person narratives [in square brackets] were written throughout this thesis to reveal my beliefs, epistemological transformations, and the occurrence of “a-ha” moments. At each stage of data analysis, coding was guided by the research purpose, question, and objectives (Gale et al., 2013; Thomas, 2003).

Deductive Approach

The deductive approach involved a theoretical thematic analysis using the *a priori* themes of the pre-selected framework to identify and categorize codes. The analytical application of deductive coding using the themes of a theoretical model helped to index and explain phenomena from an existing theory and literature. Organizing data under meaning-oriented themes contributes to qualitative robustness (Sundler et al., 2019). *A priori* codes were created from the empirical themes of the relational framework were used to categorize preliminary findings (cultural values, cultural practices, environmental spaces, cultural goods, and cultural ecosystem benefits.). In the deductive phase, not every piece of text was coded. Deduction involved coding segments of text that captured something of interest and were relevant to the research question and objectives. Additional codes were generated for findings that initially stood out but could not be categorized under the theoretical themes. Data specific to institutional factors and decision-making (e.g., government and industry) were also coded and served as the basis in developing recommendations from the ensued analysis.

During this phase of analysis, it became clear that the majority of codes could not be grouped into one subject heading, but rather spanned all aspects of the analytical and empirical themes. For example, narratives that captured participants’ descriptions of NS entailed geographical features, aspects about the people and culture, and specific WEP experiences, therefore, the same segment of text contained codes for sense of place and social relationships were categorized under multiple theoretical themes. In most cases, the codes within a narrative had to be considered together to understand the meaning and capture how the constituent themes embedded in the theoretical model were, in fact, relationally linked. This led to a second

analysis that focused on explaining the apparent overlap in codes that could not be categorized under only one of the *a priori* themes of the framework.

Inductive Approach

Inductive approach was used to further explore themes and discover patterns in the interviews. There are several inductive approaches of qualitative data analysis, some of which are described explicitly as “inductive” while others are less explicit (Thomas, 2003). The five core features of inductive analysis are: 1) label for category, 2) description of category, its meaning, key characteristics, scope, and limitations, 3) text or data associated with category that illustrate meanings, associations, and perspectives associated with the category, 4) links or relationships with other categories, and 5) type of model in which category is embedded (Thomas, 2003). The outcome of inductive analysis is the development of categories into a model or framework that summarizes the data and conveys key themes and processes (Thomas, 2003). Line-by-line coding of the transcripts allowed for a detailed breakdown of the many areas and points of discussion in the interviews and so that nuanced points would not be overlooked. It also helped to establish the relevance of the theoretical model. This accompanied the deductive approach in which findings were grouped into the framework to comb through and establish themes and meanings that helped to answer the research question. Coding and categorization centred on the meanings, knowledges, and assumptions produced through selective text to ensure that the narratives extracted from the interviews fully reflected the meanings of each participants. Theoretical pieces from the literature review informed the data analysis and labelling of codes.

Reviewing and re-reading the data facilitated the identification of patterns, collusions, and links between codes in the same or different sub-categories (Llausàs et al., 2019). Codes with similar labels were collapsed or re-labelled into categories that best described the data as a whole. For example, the codes “shared norms and values”, “business collaboration and networking”, “social cohesion”, “relationships with others”, and “group memberships and affiliations” were grouped together and labelled as “sense of community.” Reviewing, grouping, and re-labelling

codes helped to illuminate key findings explained by the theoretical framework and additional themes.

Themes were compared and refined, paying particular attention to reasons for conflicting narratives within each interview, as well as similarities and differences between participants. Attention was given to categories that contained many codes but only from one or two interviews so that findings were not solely based on one or few participants. When the reoccurrence of findings was from one or two interviews, they were considered for the selected results if they appeared to be particularly meaningful to the participants (e.g., discussed with a lot of emotion, insistent matter within their dialogue); if included in the results, the number of participants was reported with the finding. Findings that were deemed as central themes were pronounced in three or more interviews. Selected narratives were reread from the full transcripts to ensure data was not missed and interpretations were not mislabeled. Repeated reviewing, reading, and refining helped to increase the quality and rigor of assessment (Bradshaw et al., 2017).

Applying a relational framework to the analysis became a true testament to the literal definition of insanity. What may have felt like madness to me was part of the inductive qualitative process, or what Creswell (2014) calls “The Data Analysis Spiral” (Bradshaw, Atkinson, & Doody, 2017). Codes were reorganized and relabelled several times, and each time revealed the same outcome: the themes were relationally inseparable. There was not one theme that could be categorized independently under one of the framework themes; all were inextricably connected to belonging to identity, place, and cultural practices. For this reason, themes and subthemes described under one theoretical concept intersected with one or more of the other themes and vice-versa. For instance, cultural factors of belonging and place like the people and lifestyles that influenced a sense of home in NS could have also been coded and described within cultural belonging and identity. This overlap was evident in the study by Poe et al. (2014) which the adapted framework was selected from. To highlight the main findings from this relational web, results are organized under the theme heading that it most applies to but relationally overlaps with the others.

The combination of deductive and inductive approaches allowed inferences to be drawn with a focus on the purpose of the study, revealing the key themes and sub-themes that stood out and captured the experience.

Table 2.

Descriptive Analysis Coding Process

Analytical Approach	Coding Process
<i>First Phase:</i> <i>Deduction</i>	•
<i>Identifying the "What"</i>	• <i>a priori</i> • • • • <i>a priori</i> •
<i>Second Phase:</i> <i>Induction</i>	• •
<i>Exploring the "How"</i>	• • • •

	•
<i>Third Phase:</i>	•
<i>Abduction</i>	•
	•
<i>Interpreting the</i>	•
<i>“Why”</i>	

Ethical Considerations

The study received ethical approval from Mount Saint Vincent University Research Ethics Board (UREB). This study was not funded by any internal or external agency. The researcher (myself), members of the thesis committee, and all study participants did not receive any personal benefits related to this study. This research did not endorse any businesses and business objectives of the participants.

The open-ended nature of data collection used in qualitative descriptive design presents a danger of evoking unexpected dialogue, feelings and emotions (Bradshaw et al., 2017). Prior to data collection, preparation was taken to keep conversations relevant. The set of open-ended questions were tested with 3-4 subjects prior to commencing the interviews with participants to gather feedback on any potential bias relayed through facial expressions, body language, and other mannerisms of the researcher. This involved practicing the interview with two peers in the graduate program and gaining feedback on possible topic areas where bias could occur and sway the conversation.

The letter of informed consent (see Appendix D) was provided to each participant via email a week or more in advance of the interview. The letter was read aloud to each participant and a signed copy was received before beginning each of the interviews. Study participants were viewed as autonomous agents and given the right to voluntarily accept or decline to participate in the study, not answer questions, and cease participation at any stage without prejudice. No

participants choose to withdraw from the study. Participant confidentiality and anonymity was maintained. Neither the search for potential participants, nor snowball recruitment, revealed any businesses or activities operated by vulnerable persons, or Indigenous or First Nations.

Subjective interpretation of the data raises issues of who owns the data, how the data will be used, and how much control the participants have over the findings (Bradshaw et al., 2017). Integrity of the research was maintained by carefully adhering to the principles of thematic analysis, and keeping the degree of interpretation consistent with the research question and framework. During the process of reporting the data, emphasis was placed on deliberating the content as near to the participants' meaning as possible by using their own words and narratives verbatim as direct quotes.

Data Storage

The interviews were audio-recorded, uploaded, and stored on my (the researcher's) password-protected laptop. Once the recordings were transcribed, coded, and analyzed for overarching tone of voice or particular forms of speech/relay of communication, the audio-recordings were destroyed. All proceeding data from the interview transcriptions, MAXQDA coding files, and manuscript drafts were encrypted and stored on the researcher's laptop. Research data was only accessible by myself and thesis committee members until the final submission of manuscript was made publicly available through Mount Saint Vincent University and Library and Archives Canada.

Data Quality and Integrity

Ironically that the fundamental principles of validity and rigour for the research method applied in this study are the very "essence" of what leads humans to develop open and caring relationships with nature. The entire research process, from data collecting, analysis, and reporting of the findings must be guided by methodological principles that emphasize openness, question pre-understanding, and adopt a reflective attitude (Sundler et al., 2019). Emphasizing openness requires having curiosity, an open-mind, and being observant, attentive,

and sensitive (Sundler et al., 2019). This mirrors the interplay of sensory experiences of WEP and how more exposure leads to more capacity.

Reflexivity, credibility, and transferability engender scientific rigour and validity (Sundler et al., 2019). The use of bracketing in descriptive methods helps researchers recognize and acknowledge their personal beliefs, theories, and pre-understandings (Sundler et al., 2019). Bracketing was like the traits in which a person self-identifies with and of which becomes their personal identity. Prior experiences that construct their identities are like pre-understandings. Philosophical and emotional meaning gained by audiences is an indication that the study is reflexive and credible; yet, transferability requires usefulness and relevance to real-life and in other contexts (Sundler et al., 2019). To achieve transferability, the recommendations offer pragmatic and tangible actions for daily practices and policy. It is also achieved by applying a nonconventional and transdisciplinary approach to the field of dietetics in which I incorporated disciplinary work from geography, political sciences, and environmental studies. Lastly, the researcher needs to organize themes into a meaningful wholeness (Sundler et al., 2019). The act of reflecting, critically questioning, and being sensitive to new ways of thinking follows the same philosophical necessity for transforming “the self” into an ecological worldview (DeSesto, 2020).

Researcher Positionality: Epistemology and Ontology

Non-empirical research is marked by the researchers’ approach to knowledge gain (i.e., epistemology) in which methods consider the value in reflection, personal observation, and authority/experience (Dan, 2017). Self-reflection and acknowledgement of my positionality and philosophical underpinnings were carried out throughout the entire research process. Reflexivity of the intersubjective dynamics between myself, as the researcher, and the participants were also critically appraised. Factors of social background, assumptions, positioning, and behaviour affect the research process (Bradshaw et al., 2017). In order to safeguard the integrity of the study, I kept a detailed journal written in first-person that reflected on each encounter in order to recognize and be responsive to these factors.

Journaling also served as an additional ethnographic tool to compare personal assumptions and experiences with the data and meanings attached to the findings. An example journal entry can be found in Appendix E.

Transparency of Inherent Values and Assumptions

My education and training in the dietetics profession undeniably influenced the way I reflected upon and shared selected information. It was evident that my interest in this topic was undivided from the discourses of the mainstream environmentalist movement. As such, I must first engage with my own privilege as a white settler and second-generation Canadian – a positionality on which the continuation of settler-colonialism and the white feminist movement are prefaced. While I did not grow up in a household that laid Christian morals shaped by Neoplatonism and Aristotelian ideals, I do consider myself a spiritual critic and admit to being captivated by some of the ecological principles from deep ecology of which informed the selection of this analysis as a way to establish a more acceptable and serious undertaking that would not be interpreted as some form of new-age Buddhism or as an attempt to understand Indigenous Traditional Ecological Knowledge.

To explore food tourism practices involving WEP required narrowing the exploration to a specific geographical region. Nova Scotia was selected for this reason, but also because of my own place attachment as a migrated resident. Political ecology, therefore, was conceptualized as a form of post-structural “regional PE” with extending global interactions, rather than its historical application of studying globalization and geographical power (Leff, 2017). While exploring the nuances of a particular locale allowed me to explore place and practices in more detail, it limited interpretations of power and knowledge to a culture described through the social conditions and ontological lens of NS residents. Moreover, PE is rooted in the environmental and social sciences rationalized through Western worldviews which is flooded with Anglophone guilt of modernity and environmental and cultural degradation.

Unabashedly charmed by rather “left wing” academic influences, I naïvely sought out to unmask the underlying neocolonialism stemming from the material *production of the nature thesis* paradigm within PE. The production of nature thesis argues that representations of reality are inextricably linked to the physical world, and that dominate power structures dictate how problems associated with nature, society, and the environment are both conceptualized and dealt with (Douglas, 2014). This environmentalism discourse entangles human rights issues and injustices with the consequences of environmental deterioration (Zhang, 2013). By wanting to play the diplomat, I wanted to point fingers from a political perspective (perhaps white fragility on my part).

My passion for ecological justice was sparked by this convergence. Graduate courses, esteemed colleagues, and heavy-hearted conversations with friends illuminated new ideas and progressive directions in dietetics. I could finally merge environmental studies with the discipline that I invested in but did not quite feel belonging in. Framing the study of WEP within ES scholarship was a consequence of an essentialist worldview whereby plants are studied for their value for humans. I had to continuously revisit my bias towards humans, likely due to my training in applied *human* nutrition which rarely (or ever) attends to nonhuman agents in the food web. This rhetoric was new to me in the form of scientific study, but not to my own interest and topical reading. Immersed in a white-collared health field, I caught myself in the colonial mindset focused on human well-being. Self-checking throughout this work was necessary to switch a focus back on nonhumans; hiking through the forest definitely assisted with re-illuminating nonhuman agency. Lastly, I admit that conservationist discourse is carried throughout this manuscript, furthering the nature-society conundrum by supporting the preservation of nature from the human interference.

Chapter 5

Results and Discussion

Overview

This chapter begins with the results of data recruitment that were used to explore and describe WEP food tourism in NS. Characteristics of the study sample (participants, regional context and practice settings, main activities, and a snapshot of the WEP utilized in practice) are outlined in a more materially structural fashion to give a general backbone to the heterogeneous features of food tourism with many products and services and practice settings. The results in this section present only *a priori* of the value derived from WEP in food tourism practices (the research purpose). The full picture of the tangible and intangible benefits of WEP are captured in the results of the thematic analysis which centred relationships with nature on the relational meanings attached to WEP in the formation of identities, experiences, and capabilities.

Recruitment Results

Interviews

Nine in-depth semi-structured interviews with ten participants were conducted (two participants were interviewed together), with informed consent, in the summer and fall of 2019. All interviews were audio-recorded, with permission. Four face-to-face interviews and five telephone interviews were completed and lasted between 55 and 138 minutes. The interviews took place in a mutually convenient, safe location. Two of the in-person interviews were conducted in the participants' places of work. These interviews provided meaningful data beyond the audio files by situating me, as the primary researcher, in the settings that food tourism practices take place. While I did not conduct ethnographic fieldwork by experiencing the activities being facilitated live, I witnessed some of the settings that depicted the places of practice and entailed many sensory characteristics like smells and sightings, such as the aromas of food being prepared in the kitchen, flowers being dried or processed, the scenery of surrounding landscapes, lighting and layout of communal spaces, and getting to sample a variety of products. I was also invited and attended one of the foraging tours by one

participant, ate at three of the participants' restaurants, and purchased and tried a selection of herbal products made by two participants. The other in-person interview was conducted in an office space.

Description of Participants

Given the relatively small number of stakeholders, locations (places lived or places of business) were generalized to provincial region (northern, eastern, southern, western), regional centre (rural, peri-urban, and urban), and prior residence (local, national, or international). To maintain participants' anonymity, I selected and used a gender-neutral pseudonym for each participant to quote and refer to them. Omission of specific demographic data and the use of gender-neutral and non-binary pronouns (such as "they", "themselves", etc.) helped to mask participants' identities. It was also a tactic used to avoid bias among readers who may infer certain findings to specific demographic characteristics. General descriptions of participants (family, education, work) and their practices (business models, products and services, foraging locations, people they do business with) were reported so that unique features did not distinguish participants. Products and services that were novel to a business and could have identified the participant(s) were labelled into a similar but broader product or service category that represented the activities of multiple participants or possibly other existing businesses.

Characteristics of the study sample are summarized in Table 3. Participants were grouped into three main occupational categories: chefs, tour guides, and herbalists; however, practice activities within these vocations overlapped. For example, herbalists and chefs provided foraging tours and workshops, and tour guides provided wild culinary experiences. A more detailed list of participants' practices is provided and described further on in the manuscript.

Congruent with past research that reported foragers crossed social identity boundaries (Hurley et al., 2015; Poe et al., 2013; McLain et al., 2017; McLain et al., 2014), participants did not fall within a concentrated demographic grouping characterized by age, gender, or nationality. The only distinguishable demographic descriptor was participants' past citizenship experiences

which were grouped into three broad categories: four participants migrated to Canada (international migrant), two were born in other Canadian provinces and moved to NS (domestic migrant), and four were born in NS but moved nationally or internationally before moving back and beginning their businesses (Nova Scotian born).

Five participants had previously led similar practices or businesses that they adapted to NS when moving here; two participants created their businesses once moving to NS; and three participants moved away to gain experiences with the intention of moving back and beginning a business in NS. Reasons for starting a business in NS included cultural, political, and geographical factors of place-making. Participants had been in business operation from five to over 15 years.

Table 3.

Summary of Participants' Characteristics, Practices, and Experiences

Occupational Category				
<i>n</i>	<i>n</i>	<i>n</i>		
Main Practice Activities involving Wild Edible Plants				
<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>
Citizenship Experiences*				
<i>n</i>	<i>n</i>	<i>n</i>		
Business Experiences				

Learning Experiences and Exposure to Practices involving Wild Edible Plants

Places of Food Tourism WEP Practices

Descriptors of the places where participants interact with WEP or facilitate food tourism practices were coded verbatim and biophysical and cultural characteristics were labelled. Given that places are defined by cultural and biophysical contexts simultaneously, coding the data into two separate categories lost much of the meaning from behind the narratives. Interpretations remained relational, as per the framework, however, for the purpose of outlining the sample, descriptors of practice settings, locations, and environments were relabelled into researcher-defined categories summarized in Table 4.

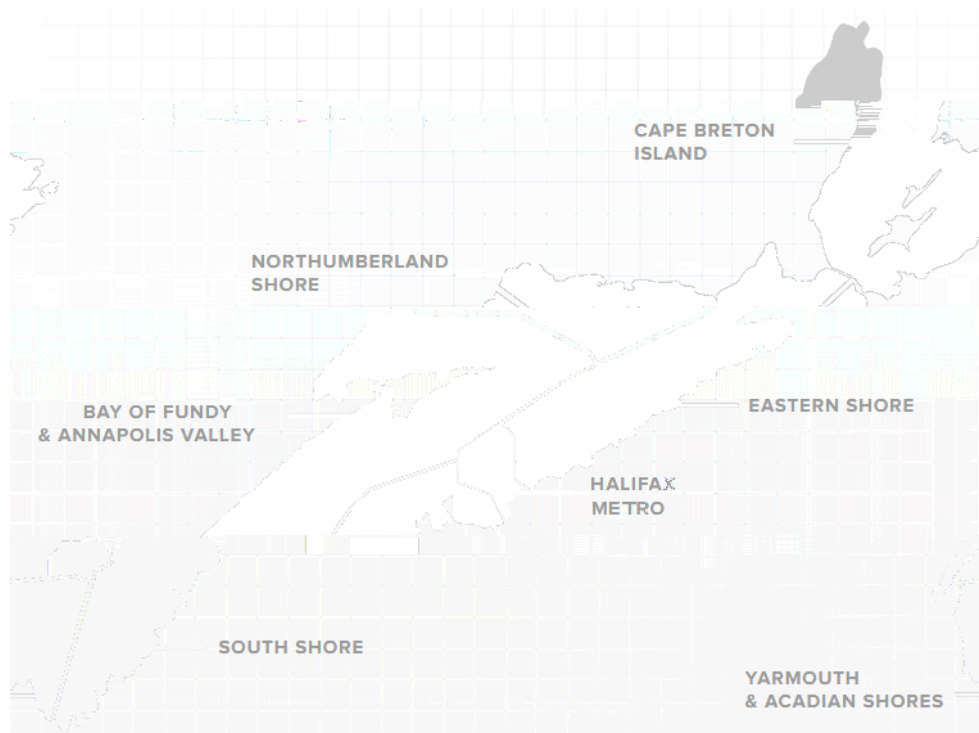


Figure 7. Nova Scotia's 7 Unique Regions (Tourism Nova Scotia, 2020).

Table 4.

Places of Participants' Wild Edible Plant Food Tourism Practices in NS*

[illegible]

Biophysical Contexts

Political Contexts

Places of Engagement and Distribution of Wild Edible Plant Products and Services

Business Contexts

Note.

Products and Services

Participants offered a wide range of products and services using WEP, including edible and non-edible products. They also mentioned several products and services that did not involve WEP but worked in conjunction with WEP activities. For example, selling farmed or cultivated

ingredients that complement the flavours of WEP. Table 5 lists the products and services that were described in the interviews. Products and services were described as constantly evolving and many descriptions of their products and services were generalized to what participants could think of off-hand. A more comprehensive and detailed list of products and services could have resulted from additional data collection methods like online questionnaires and survey tools. However, this still would have only provided a snapshot of current or past products and services.

Table 5.

Wild Edible Plants Products and Services of Food Tourism Practices

Wild Edible Plant Products
<u>Edible/Culinary Products</u>

Non-Edible Products

Species of WEP

Food tourism practices used under ten to over 200 different species of WEP. Four participants gave more figurative estimates of the number of WEP they used (20, >20, >100, >200 species) which did not differ across vocation (e.g., chef vs. herbalist), nor the type of practice activity (e.g., WEP made into consumable products vs. WEP used for experiential services). The number of WEP species used by participants did not determine the number of products they made and sold. For instance, the flower, leaves, roots, seeds, or the whole plant of one species could have specific attributes and be made into many different products. Wild edible plants were also made into many variable products like dishes, seasonings, teas, etc., that had no limit in the number of product formulations that participants created.

Table 6.

WEP Parts and Variations of Species used for NS Food Tourism Practices

Note.

Many of the plant parts used were comparable to those available in contemporary markets, such as green vegetables (leaves or whole plant), fruits (berries, pomes), mushrooms (whole), seeds and nuts. There were also some parts used that the average consumer would perceive as exotic, such as twigs and branches, conifer tips, and flowers. Beyond the species that fall within

a genus of a widely cultivated crop (e.g., cranberries), it is plausible that many of the wild edible species used in food tourism practices would be foreign to the average consumer, such as edible lichens.

While data collection did not seek specific information about the species of WEP used in food tourism practices, participants mentioned numerous species, as well as edible species from multiple taxon (plant, fungi, algae). A number of animal and insect species also appeared in the narratives but they were not specifically coded for during the analysis. Some WEP species were described in more detail if they influenced a particular experience (e.g., healing a health ailment) or were a specific component of a product or service. Attention given to native plants was not specified (only 4 codes for specifically mentioning “native plants” appeared and were not meaningful enough to be a focal point of discussion; however, the list of coded WEP could be combed through and species native to NS could be marked). Most of the species were referred to by their common/colloquial names, and a couple by their scientific/Latin names. Participants also referred to WEP as a general classification (e.g., “berries” or “mushrooms”) or by a name that contains multiple families and species (e.g., “sorrel” could refer to sheep sorrel or woodsorrel or any species within either genus). Appendix F lists the wild edible species that were mentioned in the interviews (common/colloquial names and scientific/Latin names of geneses appearing in NS). Species are grouped according to kingdom classification and listed alphabetically by taxonomic family. It is important to note that the species listed in Appendix F are only those coded from the interviews and this list does not reflect all of the species that are utilized by participants. The edibility of these species should also be understood as being specific to one or more parts, its growth/maturity, the way it is harvested and processed, and that consumption may cause adverse reactions depending on the individual or drug-nutrient interactions. For example, most lichens are difficult for humans to digest because of their complex polysaccharides but can build a tolerance if consumed regularly; lichens also contain acidic compounds, such as vulpinic and usnic acids that can be toxic or irritate the digestive tract if harvests are not rinsed thoroughly (Kuhnlein & Turner, 1991).

The range of WEP that were mentioned in the interviews was indicative of the diverse ecosystems that participants retrieved plants from. The snapshot of WEP also revealed that participants are well positioned as stakeholders with knowledge of forest species responsible for maintaining ecological synergy. For example, participants collected species that form the tree layer (e.g., birch and spruce), the shrub layer (e.g., sarsaparilla and wood-sorrel), and herb and lichen layers which work together to form Coastal Forest Vegetation (Nova Scotia Department of Natural Resources, 2011, p. 19).

The subsequent section of this chapter describes the emergent themes from the interviews with food tourism business owners/operators and values attached to the places and WEP practices profiled above.

Results and Discussion from the Thematic Analysis

Thematic analysis provided insight into how food tourism practices involving WEP influenced participants' relationships with nature (biophysical and sociocultural); values driving actions of stewardship; and how activities are affected by and may contribute to local regional development. Food tourism practices influenced relationships with nature through the same discursive structures that relationships with nature influenced food tourism practices. The themes unveiled underpinning values and meanings behind current practices, how they were shaped by past experiences, and how they may inform future practices. Beyond the confines of nature defined in conservational and environmental research, nature was characterized through participants' physical environments, and materialized through systems-embedded relationships with intersecting "assemblages" of human and nonhuman "actants" (Fletcher, 2017). The interrelatedness of people-place-plant interactions revealed that WEP practices were characterized equally by "bio-cultural features" (Wiersum, 2017) involving biophysical/environmental, cultural, and related institutional forms of nature.

Relevant Themes

Four main themes and seven subthemes emerged from the in-depth interviews as participants talked about their practices, how they became involved in their line of work, how they attain, transform, and sell WEP products and services, how they themselves use WEP, business benefits and challenges, and their hopes for the future. Each theme told a story of a connective web where WEP in diverse ecosystems (past and present) influenced the values and knowledge within food tourism practices, and practices influenced WEP. For example, participants' fond memories of when their lives intersected with WEP (childhood, education, and place encounters) laid the foundation of values that informed why and how they mobilized WEP products and services in their practice.

Congruent with the PE approach focused on why and how humans interact with nature, the findings are presented in an order that describes how relationships were formed, mobilized, enacted, and disrupted (Poe et al., 2014). The themes are discussed in an order that showcased the provenance of WEP and of values 'rooted' in identities and places – how they 'grew' into food tourism practices, how they 'disperse' across localities as products and services (physically and discursively), and how the survival of species (humans, WEP, and all entities) are positioned in nature as an inseparable state of culture and ecosystems. Emergent themes related to the contribution of practices to local regional development, namely systems of governance, are described separately. Practice recommendations for local regional development were both participant and researcher identified.

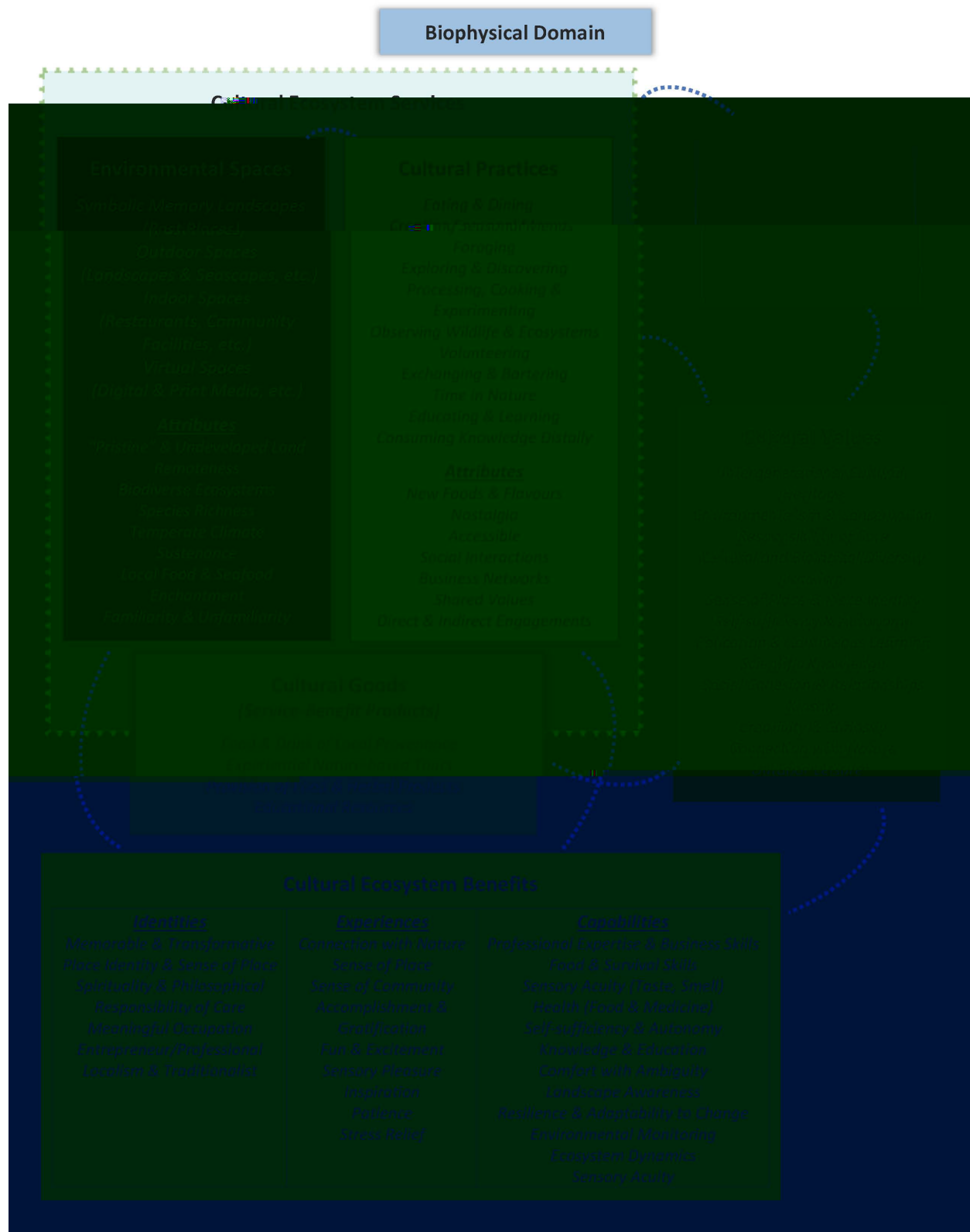


Figure 8. Summary of Deductive and Inductive Codes Categorized within CES Framework

Table 3.

S a f F a C ded T e e

<u>Theme</u>	<u>Subthemes</u>	<u>Explanation for Inquiry</u>
<i>S c a a</i> <i>Na e</i>	• <i>C d d U b</i> • <i>Ed ca T a</i>	<i>F a f Re a Na e H a e</i> <i>c ce ed a c a ed a e a ac ce de</i> <i>f a</i>
<i>P fe a a</i> <i>f Na e Ba ed</i> <i>P ac ce</i>	• <i>Se e f Pace a d Pace a</i> <i>NS</i> • <i>P a Re a Ide</i> <i>F d He a e</i>	<i>M b a f Re a Na e H a e</i> <i>a e ded b a f a e ac ce</i>
<i>C e a f</i> <i>Na e</i>	• <i>Ec ca K ed e</i> <i>A a e e</i> • <i>S a WEP B e</i>	<i>S a Re a Na e H a e</i> <i>a a ed ac ce f e a d</i>
<i>I a a</i> <i>f Na e</i>	• <i>Re d S ce N</i> • <i>S e f G e a ce</i>	<i>G e Re a Na e H a e e ac ed</i> <i>d ed ac ce f e a ce</i>

Theme: Formation of Relationships with Nature: Socialization in Nature

Subtheme: Values, Benefits, and Practices in Childhood Upbringing

re-introduced

*“When I was living [abroad], it was kind of like an activity that people would do, like go mushroom picking on the weekends, and I thought that was super cool, and I would go with friends and we would go and pick mushrooms, and from there it just kind of spun or snowballed into what it is today ... Yeah, it just really sparked my interests. And then I moved back home and realized like, ‘oh hey, there’s a lot of ingredients that you could harvest here in Nova Scotia from the wild that maybe chefs would be interested in.’”
[Avery]*

*“...my mom giving me echinacea as a kid or showing me around the garden and being like ‘this is lemon balm,’ and we’d sniff it and eat it ... I’ve always loved being out in nature and my parents took me out camping and hiking ... the roots of it are way back from childhood in terms of nature and loving being outside and learning about plants.”
[Riley]*

“... we were always picking blueberries or picking raspberries and picking blackberries with [my grandmother] or we’d go to like abandoned farms and pick like all overgrown rhubarb and things like that ... these were the kinds of adventures she would take us on kind of thing. It was always, ‘alright we’re going to pick blueberries, it’s blueberry season and we’re going to pick blueberries.’ These are the kind of things that she would do with us.” [Alex]

"... from a young age, like always being outdoors, and always just being curious, being outdoors and stuff ... I think it was just natural for me to be outdoors." [Avery]

wild

"[We] both grew up in rural areas and from a young age we were both out on the land. And I mean, I grew up on a farm with my cousins who were my age, and my gosh, our parents were just like ... we would be building with rocks and exploring, and making forts, and eating all kinds of shit [sic] throughout the day that we had no idea what it was, but also with very little supervision so you had to be careful ... we had this really wonderful wild childhood ..." [Robin]

"I had always been a little bit drawn to plants because I had a mother and a grandmother and a great grandmother who were all kind of plant people ..." [Alex]

"We were so poor ... We grew a lot of our own vegetables. That's when I started foraging, my mother had gone into the country, and as far back as I can remember she was teaching me to identify wild onions and passion fruit and things. And we had to ... so I started fishing and hacking, and broadening my knowledge of what I could harvest from the land. And we were poor, but we were happy." [Blake]

... growing up on a farm raising chickens, killing chickens, plucking and gutting chickens, and then cooking and cooking up chickens, it's you have an appreciation because you fed them for six months, you have an appreciation because you had to catch them, you have an appreciation because you processed it all, and yes it's gory and it's horrific ... but this is something that I have had." [Dylan]

Childhood Play Hypothesis

*"One of the interesting things about human beings is we don't have five senses like we, we have at least sixteen senses and possibly a few others. And these audio-visual based worlds we create for ourselves really, you know, we're giving everything to vision and hearing and, to a lesser degree, touch and taste, we just don't create a world that's deeply in tune ... we're flattening the development of children by taking them out of the highly aversive world of nature ... they aren't out, they aren't getting muddy, they're not out running around, they aren't, you know, making mud pies and wading in ponds."
[Blake]*

"... people have become averse to adversity." [Dylan]

*"... it's just kind of this paralysis that I think also it comes out of lack of connection."
[Robin]*

"... You can never have access to big forests [where I grew up], that's finished now, that's closed. All these smaller communities, the small villages, the small product, the good product, it's finished ... the dandelion, the roots, the trees, all this kind of product ... and

now the new generation is totally, they have no worries about that, they have no question about the food, about the culture of the grandparents, about the small villages ... that's a bad situation. But that the lives of the people are in the computer, in the game, they lose the connection with the world, with nature ... But I don't know if the next generation, if they can think about the food, the culture ... I'm passionate about that because that was a section of my life." [Terry]

Subtheme: Values, Benefits, and Practices in Education and Training

"Oh, it's just hard as it was, it's such an integral part of my life. I kind of accidentally stumbled upon it and it changed exactly what I was going to do or what I thought I would do in my life. I haven't talked about it in a while, anyway so. So, his restaurant was dedicated a hundred percent to local ingredients and local everything using local foraged ingredients. Hundred percent seasonal." And "... there's no school in the world that can teach that." [Charlie]

"... I think it's just a reconnection of like these deep realities for humans and nature ... this is not really something I talk about with a lot of people ... because I was also brought up in a very scientific sort of background ... But ... I was open to other things that maybe unexplainable ... I call it communication. It's communication with plants, spirits, plants, plants ... Just like sit here and feel it, like feel it from my heart, and look at this plant like this amazing plant that's in front of me ..." [Riley]

"I moved [across the country] ... 20 years old ... And I just said if I'm going to cook, I'm going to learn to cook. So ... I was by myself and just went from place to place ... I had no idea what I was like, what I was doing, or who I was going to work for or applying at."
[Charlie]

"[City in another province] was wonderful at the time. It was a very, very fast paced life and I loved it in my early to mid 20s, but eventually like I just wanted, I wanted to be home all the time ... I was always drawn to [one area of Nova Scotia] ... [where] my grandparents live ... I was always drawn to [it], it was always ... How do I do it, how do I get to the country, how do I get back into the wilderness, back out into the woods? That's where I was always trying to be." [Alex]

"I started working at the [a hospitality business], so the lady that owns it was always into foraging ... I kind of got a few books and got interested in other plants that were edible, and there's quite a lot actually once you find out what they actually are, and once you have batches and stuff, and so yeah ... It was just moving out here to Nova Scotia ..."
[Dale]

"It all began, gosh ... when I was about 20, yeah, 20 years, when I was an actual biology major at the time ... it was all focused on molecular biology, and I was more interested in the behaviour of ecosystems ... So, I not only revised the direction I was taking in my education, but I also gave a lot of thought to the kind of things that I wanted to do with my education, the kind of books that I wanted to write ... And really the direction that I wanted to go because the beauty of biology is how everything fits together and works"

together as an ecosystem appeals to me ... I wanted to find an approach to provide information, good solid information, to people but also to inspire them to care.” [Blake]

“I spent most of my 20s living in [a metropolis region of another province] and I wasn’t ... I wasn’t really sure what I was going to do with my life. I just knew that I wanted to do something a little bit more self-sustainable ... so, I studied plant science ... I actually had a student advisor that got me more interested in my wild plants. At the time, I was really stressed and I was experiencing a lot of eczema on my hands and my feet, and she had suggested to me that I’d make myself salve. She was like, ‘you should go get yourself some plantain and make yourself a plantain salve.’ And so I did and I was so just incredibly thrilled with it! I couldn’t believe how well it worked! How this one little plant that grows along foot paths would be so healing to your skin! It was just, I just found it so amazing how much restorative properties that it had. And so, I got more and more interested in.” [Alex]

“... all these little things started happening around the same time. My daughter had a little book ... and one of the stories was about her getting poison ivy and her neighbour making her a Jewelweed salve to stop the itch from the poison ivy ... And then we had

[illegible]

mentor that can actually show you in the field or forest what it is you're looking for what it is you're looking at." [Avery]

"But that would be good [to have a] course like CEGEP in Quebec or probably more courses about the food culture ... and all the flavour [that] comes from with the land where you are ... the food culture because if you tour in Spain, Italia, Belgium, French, etc., and you move 100 kilometres, 40 kilometres, all the vegetables are totally different from each area, and you can see all the product in the cultures is totally different." [Terry]

"... what chefs can do on our side of the industry, is in all comes with the training. So, the more chefs like us that take the time out to teach, take cooks on a farm tour, meeting with suppliers, meeting with vendors, meeting with growers, meeting with foragers ... and even going out and foraging with them ... But the more knowledge that's on our side ... these cooks who are going to open restaurants someday, you know, they're going to know who to call, and what to look for, and what to use, and when it's in season ... more of that and inspiring more of that." [Charlie]

"... education is hugely important and must matter ... some form of cultural group that at this point, I'm not sure how it can possibly be made. And beyond that, in the long term we need to start looking at actual ways to preserve biodiversity ..." [Blake]

Theme Summary (Processes of Socialization in Nature and Place-making):

Theme: Mobilizing Relationships with Nature: Cultural Values through Food Tourism Practices

Subtheme: Sense of Place and Place-making in NS

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"I'm actually still, I'm amazed, like every summer I'm like, 'What? I didn't know we had that here!' Like I'll discover something new amazing more diverse than I ever thought."
[Riley]

"You know, Boreal forests have a mystic to them, but they're also biologically very flat. There's not a wide range of species within those forests, so the richness of the species is really impressive here ... And we've been here almost fifteen years now, and there's more that I don't know than I do know about various species around here, and that requires an ecosystem not just the flora here but the fauna, too, and variety of fungi, there's a richness to that. It's really an amazing ecosystem." [Blake]

"...I'm just more familiar with the Acadian forest, it's something that I grew up with. I know the species here better ... I think it's just familiarity for me." [Alex]

"I love the aspect of foraging and then sort of exploring new areas, and, yeah sure, I'll go back to the same patch year after year, but it's also an excuse to explore new areas ... we have the coast and we have forests, we have fields, and we have just so much abundance here and so many different habitats and ecosystems so that makes it really interesting as a forager." [Avery]

"... the fact that we're able to do it here where, you know, the reason for coming here is because we could get such amazing seafood, and the growing season is phenomenal here, like you can grow almost anything in Nova Scotia, like the seasons are really great, the products are great, it is affordable." [Robin]

"Aw, it's definitely the culture, and the water, and the culture. I know that B.C. has water, but it's not the same culture on the water, you know what I mean? It's not the same people, and I grew up [here], though the sort of suburban [Haha]. But I grew up on the water ... so I just had a connection to that." [Charlie]

"I lived in [another province] for a while, and you can't really go out foraging in the city, well, a little bit but nothing too crazy. But moving out here, I just kind of get away ... We're like ten minutes from [the town] ... but there's not many people which is nice ... we're still kind of accessible for everyone." [Dale]

"... we are on a look out on this bit of land that kind of sticks out into the [ocean], and this whole area in behind the restaurant ... it's all basically mountain range in and behind it ... there's nobody really living up in there, which is kind of to our benefit." [Robin]

"It's one of the highest points in Nova Scotia, so the air is very pure, we can't flood ... It's all surrounded by woodlands as well, hundreds of square miles of woods which is only interrupted by tiny villages or homesteads but that's about it. It's definitely one of the more wild and prettier regions of Nova Scotia." [Blake]

"... there's so much beauty in Nova Scotia and so much beauty in this area, and that is out there, you know, part of me says it is yet to be discovered, and the other part of me tries to leave it to be discovered because people have a tendency to destroy what they touch." [Blake]

"... I thought that I could try to make a go of it up there and then while I was up there, I was like there's no way ... there's just not enough people in the area that I wanted to be in." [Riley]

"I looked at a place in New Brunswick, but I liked the ocean, and when I came to [this location], it was really nice, and the people were nice, like there were a lot of creative people ... all kinds of creative people, like table makers, like glass makers, like just a bunch of really interesting people. And I find that now a lot of younger people actually, kind of doing the same thing, like moving here now and doing that, like owning small businesses. And I think it's just a good place for that kind of ... to be creative and make some money out of it ... Like if you have a skill, and even being into carpentry, you can easily start your business here because there's not enough of them. If anyone does a good job at anything, I think it'd be a good place for small business." [Dale]

"postcard"

"... I said when we were house hunting, we just want to live! And we looked all around and we were like, 'we don't want to live in suburbia, we want to live' – this is before we had a business and kids ... and like 'we want to live in the postcard, we want to be able to live in a postcard area, and you know, we're happy that says Nova Scotia, we can walk around and be like we live in Nova Scotia.' So, we ended up in [area]. It was like perfect. It's a defunct fishing village now, there's still lobster fishermen down there quite a bit." [Charlie]

"... and then [supplier] ... was our neighbour and the business we bought most of our seafood so we grew a really close relationship with [them] ... they're right around the corner from us." [Charlie]

"... working in the industry ... like making connections that way and talking to people ... like even Nova Scotia is pretty small so word travels really quickly ... I think it adds a whole other level to it, right ... they're supporting me so I'm going to support them ... I think it creates more of that community, too ... it's like they appreciate what I'm doing so I'm going to appreciate what they're doing." [Avery]

"... They trust me about the [WEP] in Nova Scotia, unlike in [other province] ..." [Terry]

"I would say in the business market, there's a lot more competition ... I think competition is healthy ... it doesn't bother me even a little bit ... I think that people are always worried that this person is coming in and stealing my, stealing my thunder kind of thing ... I've always had the mindset that it's community not competition, and that we all support each other more than we can help each other grow ... there's certainly a lot more people working with wild plants now than there were like a few years ago when I started ... And I think it's fantastic ... I'd actually love to see more. I really, I really, really want to walk into a market and walk up to that market table and go wow look at all these incredible things like. And that's something that I'm not ... I'm not quite seeing all the time." [Alex]

"... it is really special, like if you can find someone who shares a similar opinion in that these mushrooms that you've turned up with aren't just, you know, something we found on the side of the road that has no value, I think that's a really special thing to share." [Dylan]

moral ecology

"There's a lot of exchange in terms of the value that I'm getting from the interaction with people. So, building a community, you can't put a price tag on that. I had someone, or I had a bunch of people show up ... five or six months ago ... I was in a real pinch, I was really behind ... and I couldn't get products made in time for a big show ... I was like if anybody is able to come and help me, I have food out like snacks for the day ... And I had like six different people show up and I had all my products made by the end of the day, labeled, packaged, ready to go. And so, for me there's a value in that. And you can't put money on that." [Morgan]

Subtheme: Wild Edible Plants as 'Sensory Windows' to Past, Present & Future Food

Heritage

"And one of the nicest things I feel in the dining room is when people have like these food memories, you know, and they may have not had sapphire greens since they were a kid, and they have them again and, yeah, it's lovely, like people have been moved to tears because something tastes like something they had from twenty years ago." [Dylan]

"... people would be like, 'I didn't know you could eat that, like oh my!' And like yeah you can eat it. So like cheering people on in a totally new thing that's been made right into front of your face, and brought to life. It's pretty amazing to maybe inspire people." [Avery]

"These are new flavours that we're experiencing as adults and kind of walking away and appreciating it as adults, and I think that that's a really wonderful, a wonderful thing. I think that it's something that foraging adds to our restaurant and it adds to the dining experience ... all the forageables are new and exciting to lots of people, especially the dining community." [Dylan]

"And people are interested in it, they kind of ask, 'oh what's this? what's that?' ... We have this snow crab dish with like beach plants where there's five different plants on it, each with their own kind of taste. I find that people are really interested in it ... They're always curious ... and it also matters how we serve it, too ... like the sea rocket, it's spicy, so you wouldn't put much of it on a plate." [Dale]

"I really, really like spicy food and those flavours ... But, Nova Scotians like food, by comparison, that's really bland. Not to be insulting, but just food that is very bland. So, they tend to like the things with the much more neutral flavours, such as oxeye daisy leaves when they are in rosehead form, that's always a favourite. They tend to like the sorrels, sorrels can have a strong flavour but it's lemony, and so then when they try that, and they realize they can mix that into salads, they enjoy that one. They like those things, but they can steer away from the really strongly flavoured other stuff." [Blake]

"Oh yes.

That's totally, that's for all the wild foods."

"Nova Scotia is getting more attention on the food front ... I think it's booming, like

"I think it is one of those, those really great expressions ... like we can offer a true dining experience that is authentic, geographically and historically, like we're going to get a chowder and we're going to use what's here ... get little hints as to what the 85 year old man down the road who makes the dressing for his Thanksgiving dinner always puts finely grated apples in his potato dressing, and I'm like, that sounds like mashed potatoes with grated apple in it and onions, and it's a bit weird, but it doesn't really fly as far as [their country of origin] food is concerned, but okay, let's have a crack at it! And you know, it's actually pretty tasty!" [Dylan]

"Cause we chose to open a restaurant in a town in rural Nova Scotia ... we wanted to be approachable, and we didn't want to come into somebody else's space and be like, to not be a part of the community." [Robin]

"We try to throw a few interesting things on [the menu] ... all those things we can't change because if we did then people would be like unaccepting ... we try to change up ... and we will often throw in foraged foods ... we kind of try to sneak it in, and we've always kind of done this ... But it's a really fun way to get people to approach foraged food." [Robin]

"When I get back to the source of why I became a herbalist, it's because I want people to be engaged with plants. I saw it as a way to help us, as a species, reconnect with nature in a very tangible way; to reconnect with like our ancestry or just our biological beginnings of what we're made of, and how we are part of nature and nature's part of us, we are intricately intertwined but we seem to have been losing that knowledge." [Riley]

"I have living experience of this all the time, in the foraging classes, I do other classes, too ... but foraging I do a lot more of that because people get out and they get to learn about the land and you can even motivate people to realize there's some practical value in it, too, they become more inclined to care about it. But one of the things I have to go over with in foraging all the time with people is use your other senses. You carry field

guides well that's just your eyes, you have to use all of your other senses to identify, especially your nose. We actually have, as human beings, we have pretty good noses, we can detect as little as 2 molecules, 2 volatile molecules making contact with the sensory nerves in our nose. It's just we are so used to disregarding that sense, we don't pay attention to it. But using your nose, using your tactile senses, your tongue, these are all important elements in the identification of plants and our diet. In my last talk in the woods we got really into that." [Blake]

"I think that people want that biomedical sort of care because that's what we do in general in our society right now ... And we need to have science to prove that it actually works ... So I feel like ... I'm explaining biomedical reasons for things happening ... different ways that plants can help us, and that's just that's not just on my biomedical-physiological level. It's also on an energetic spiritual level. And that's the best part about plants. It's so much more complex than just our reductionist, mechanical body. It also houses a spirit and a soul and feelings and emotions ... So what I wanted to do, and still do want to do, is to ... take them out into nature and actually engage with them out in the natural setting, as well as in the clinic ... That's the ideal." [Riley]

"... we're going to make do with what we have, which is a very strong thing ... we filleted the herring, we salted them and pickled them in vinegar that we flavoured with spruce tips that we picked, and then layered it up after pickling in oil and then put moss, more spruce tips, and some scotch lovage ... And it's really delicious. It's one of those things that it's like this is both old Nova Scotian cuisine and it's new Nova Scotian cuisine, and it is, it is something that, that the world could be really, Nova Scotia could be really proud of, and that the world could find." [Dylan]

"... the only way to build a regional cuisine is to have everybody on board ... Because we're not meat and potatoes and we haven't been for a long time ... in the market of building food culture, [restaurateurs] in the market for profit that have been dumbing it down for the clients for so long now because just looking at it as a purely marketing symbol of money-driven entity and building these restaurants like 'people want Caesar salad, people want meat and potatoes', and it's like that's not what they want, you're dictating for them what they want." [Charlie]

"I just think we are in very interesting times, and if anything, we might be very lucky if we can maintain our knowledge of wild edibles. But they certainly might help shelter us through potential, like in absolutely doomsday case scenario ... Whereas one shitty season and you lose an entire crop of romaine in southern California and then Ontario can't have its Caesar salads." [Dylan]

"... How can they run restaurants where they can feed thousands of people a week ... and they don't know what the mushroom that they're serving on a dish looks like ... It's like a new wave of shopping through Sysco or GFS ... when this produce become available to everyone, it's a little bit like chicken breasts being available at the superstore in a polystyrene tray ... I just think that it's a little sad when it lacks, it lacks the true image." [Dylan]

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But if it pushes in really quickly, like an often trend, it ends up, it kind of leans towards going out when BBQ is the new black or kombucha is the new black or whatever. It stands as, if it comes in too quickly, and everyone ticks all their boxes, what's the point of it." [Dylan]

"... just for the sake of like serving ... you got to have a focus. And it needs to have a purpose ... if it's there but doesn't really do anything, then there's not much purpose for it." [Dale]

"... it's just creating opportunities to find your tribes ... and if it's not your tribe, it's finding someone who you can still trade with, and you don't have to be completely like-

mindful in order to get along and I think that's really good, too, because it appreciates the fact that maybe we don't see eye-to-eye see eye to eye on things, but you're a farmer and you produce these great things and I think that's awesome ... in these [events], you're seeing people coming from all over the place that have different mindsets ... information sharing and the only way that you do that organically is by being together.” [Morgan]

Theme Summary (Mobilizing Relationships with Nature)

Theme: Conservation of Relationships with Nature

Subtheme: Ecological Knowledge & Awareness through Outdoor Pursuits

"... it connects us to the seasons and what's going on around us, and then we can use that and figure out how to service people is really fun." [Dylan]

"the nature"

"Oh, I've been in the wild since a young guy ... when I wake up in the morning, I check the weather, the wind, the sun, the breeze, and I can say if I have chance to have a trout or not, and I can say that's better to go in this area or this area, or another area, and that's the situation for all the product. In the wild, for the mushroom that's the same. I can find mushroom everywhere because if you understand the connection of the mushroom with the tree ... If you understand all, you're the nature, the connection with the tree, the mushrooms, the boletes, the vegetables ... and you have a connection with all the culture, and the foods." [Terry]

"it's a fun way to offer [services] and it just gets us outside" [Robin]

"... being outdoors and being curious and ... wanting to learn more about what you can eat from the wild ... Sometimes I'll look at maps and maybe guess, an estimated guess, like depending on the coast, or the type of forest that I'm in like, 'maybe I'll find something in there so I'm going to head out there.' ... Some of my best spots I've found just by being like, 'hey I wonder what's around that corner, or what's on the other side of that beach, I'm going to go check that out.' And ... keeping your eyes open ... exploring, and keeping eyes open." [Avery]

"And it is the more you do it, the more you know ... if you go out in your yard every day in the summer and you pick yourself a green salad, you're going to learn something new every day that you can add to your salad ..." [Alex]

"... and like no one's out there with a microscope of anything. It's like, I don't know, you just know. It's kind of like riding a bike, once you know what a morel mushroom is, or a chanterelle mushroom is, you just know." [Avery]

"We have a sixth sense around here, we do have a lot of information about the area and what grows here, and when it grow." [Robin]

"Over the years, I know when they're going to be in season ... So it's kind of fun to kind of see it happen, like now it's raining, which it hasn't in days, and it's going to get warm so the chanterelles are probably going to start to pop up in a couple weeks so that's exciting." [Dale]

"I've been in Nova Scotia for ten years ... I check ... how they can grow, if they stay good, if they're still good one year, two years, three years ... sometimes you can see a big difference ... For example, the chanterelle, I found the chanterelle around June 15th, and five years ago that was the 8th of June, and this year that was more in July." [Terry]

"Seasons. Yes. 100%. This was a super late year. We picked fiddleheads almost, almost into July, like it's ridiculous. The red elders should have flowered really early, they were super late ... so, we're constantly like, we build a repertoire of what we can pick and when we should be able to expect to pick it." [Robin]

"... I think very much there has to be a certain allowance for, I mean, I don't want to be an alarmist and scream climate change, I think it's fairly undeniable, but the fact that the beach is going to move every year is dependent on the weather cycle ... And most of the time we know where to go to find things ..." [Dylan]

"I'm frustrated about the vegetables along the coast that's because of more and more pollution ... year after year ... Sometimes, all the land from St. Margaret's Bay, from Mahone Bay, all this section was totally dead, that was 2 or 3 metres in the water, totally yellow, that was pollution and this pollution goes into the rock into the land and into the vegetables. That's a bad situation." [Terry]

forces of nature

"... we're not foraging and then wondering what we do with it ... I mean, there are occasions when that happens or, you find like ... 60 pounds of mushrooms, I'd be like, 'now what am I going to do with that.' Whereas, we're going to go, 'it's that time of year the product is going to be available, I would like to include it on the menu this way, let's go and get it.' And if it's picked in the harbour or in the tidal zone, we're going to have to work out when we can go and get in ... like is it going to be under water or are we going to have to go 5 in the morning, are we going to go 8 in the morning, or 3 in the afternoon in order to obtain this product? Are we going to pick to get enough? Maybe we would aim to get enough for the week, so we're going to have to go out again because then the tides going to change by an hour each, each day. If we're going to get caught up with the other day to day running of our business." [Dylan]

"... the landscape feels to me ... like ... I just walk around and listen to what needs to happen." [Morgan]

"In the scientific world, we recognize very well that you can't observe something without changing it, no matter how cautious it is ... it takes a fair amount of skill to learn not to interrupt some of the more sensitive things." [Blake]

"... If anything, we're trying to encourage them ... and I think that each plant has its own specific sort of guidelines." [Dylan]

"... the mushroom, the bolete, or other, because the processes is how you can cut them, the quality ..." [Terry]

"... especially the wild foraging you have to be careful about how many and who is coming." [Morgan]

"Often, we aren't picking on our own land either, like it's often like marshes, or beaches, or ditches, you know like, like places we can go. And we're not looking to jeopardize that, or create poor relationships with people." [Avery]

"When picking elderflowers off the tree, it kind of, it works well 'cause there's some that you can't get to that are higher high so I always feel good that, I'll pick the ones that are lower down but I can't reach the ones that are higher up. And that way, it will still kind of run its cycle with what's left." [Robin]

"But it's one of those things where this is an area where people have picked mainly dulse but we picked dulse and sea lettuce there sustainably for 10 or 12 years and then it just disappeared which is, which is really amazing, I mean, it really shows you maybe a little bit how finite some of these resources can be." [Dylan]

"it's not them, it's our society."

"I took people in a workshop last summer to a spot and introduced them to ghost pipe, and spoke very passionately about this plant and said, 'you know, yes it has incredible medicinal virtue and value, but it has also become a like in_vogue plant right now because of that and it's being over harvested ... and it really is a magical plant like a plant that doesn't photosynthesize, that's pretty cool'. People get really in like it has this draw and this enamor, and it's very glamorous in its own way. And I highlighted the importance of only harvesting from like really populated areas, strongly populated areas ... and I was like so I would suggest finding another spot. And then I went back ... and the ground looked a little tossed up in that area and there was none to be seen ... I'm going to stop telling people about it, and I don't want to do that but ..." [Riley]

"The other thing that I struggle with the most is internally; it's like a moral thing. As much as I want people to connect with nature and get outside and learn about plants that are harvestable, and as much as I am very happy to see a lot of people being turned on to like wild foraging and eating wild foods ... but at the same time, we as a society ... have a tendency to maybe take more than we should ... the other thing, it's like unfortunately our wild spaces are already so depleted. er

“need to

think about Nova Scotia”

“You can do a lot of money, if you want to think money with the wild foods, you need to think about Nova Scotia, about the potential of each product, and after that you find a good market for some product.” [Terry]

“These group or organizations reach out to me and they’re like, ‘hey we want to learn about wild edibles on our land or in this area,’ and I see that as an opportunity to also explore something new! I don’t know what I’m going to find, so it’s kind of like tossing a coin, but there’s always something to find ... I don’t know what I’m going to find but I know that we’re going to find something because I think I have a pretty good repertoire of wild foods, and so I can be comfortable in different environments. Maybe I’m going to get stumped on a few plants or berries, but at least I can provide some information to the group.” [Avery]

"Mostly just for fun and do something different ... create an experience and, yeah just something different because I'll have to close the restaurant if we do those events ... I wouldn't be making more money guarantee. But I think that would be fun. And that would be through Destination Cape Breton and Tourism Nova Scotia because they want, they want experiences like that." [Dale]

"... if there were less people, I'd have more capacity to be able to actually facilitate everybody getting a chance to really connect with this plant." [Riley]

"Every year we've been able to find, locate, prepare, and make something tasty and interesting for people that we haven't done the year before ... I think that's it's been really interesting for us to be able to set our sights in finding new flavours, new textures, next directions, new preparations." [Dylan]

"I think it's all about balancing, you know, the wild with the cultivated." [Riley]

"If I can expand on that [online sales] and then just start growing more medicinal herbs that way I can expand my tea business as well which is kind of the direction that I think I'm going to go in is more tea. Just as a focus ... I find that it's very in demand." [Alex]

"I move a lot of my wild foods with [premium] foods ... I prefer to keep 100 grams of [WEP] product and to work a lot of [other ingredients into a] product with that." [Terry]

"I do some wholesaling ... I just had to manage that because my product line is limited to what I harvest and make. So, when someone asks whether I would expand into more production, it's like, if I do that I end up having to order my herbs, and then if I'm ordering my herbs, I'm no longer harvesting and walking in my gardens and picking them, and that's actually my medicine. So, then I'm taking away my medicine, and then it becomes just about the business and making the product and the money. And if I'm ordering my herbs, I have to make sure I get the money back on that ... And for me it would take away all of the healing benefits for me." [Morgan]

"I'm just like one person doing this like this whole business so it's a lot of work to be out there picking, and be out there like marketing and advertising, doing deliveries and everything, taking orders, so it's just like a lot of work, and I was kind of seeing that I was losing, I don't know, the love of it, where it was just picking like okay, I got to fill these orders for like however many pounds of whatever, and it was, it was almost getting to like even the point of being like stressful. So I was like, okay hold on, I got to refocus here, and like why do I like doing this, and what do I like about it ... I like being outdoors, I'm a social person I like engaging people, I love seeing that spark in someone's eyes when I can show them a new plant or berry or mushroom, they're excited about it, and that gets me excited. So, really in the last year and a half, I've kind of taken more of an educational approach to the business." [Avery]

"I think that the world has a funny way of telling you what you need, so maybe it was like kind of like a sign or symbol to just kind of like slow down and step back and re-evaluate." [Avery]

"I think that people get, unfortunately more often than not, they get so excited by it, as the concept of a commodity ... for years now ... articles about the mushrooms that were picked in Nova Scotia being sent to Europe and the money that staff were being paid ... like in times of plenty and when there was a more reliable system, and I can really appreciate that that was a really great thing ... But when it's such a finite resource, it seems disappointing that it's the financial value is what is really motivating people." [Dylan]

"But you can trust me, the mentality with this kind of food and the money, that's a bad relation. Nature and money, that's two things totally different. And if you think money when you go in the wild, that's totally wrong ... this kind of life for the wild foods, I win approximately per year 20, 25 thousand, and I work, I don't know how many hours per week ... but for ten years now, I am good with my lifestyle, but for the money that's another situation." [Terry]

“all food

was wild once”

“... I say that’s nature. I take the care, I care in this area ... [customers had to] understand that ... product from the farmers they have control over the quantity and quality every week, and you have with the wild foods that’s a small section and you have no access.”
[Terry]

Table 9.

*Summary of Practices to Overcome Business and Land Management Challenges**

C a			P a			Pa a		
I a Ma	• P		a	a	a	a	a	a
D a			a	a	a			a
	• C a		a					
	• Va a				a	a	a	
	• O a				a			a a
	a		a					
L Ma	• S a					a	a	a
D a	a							
	• I a	a	a	a		a		a
	• A a			a				
	• I a				a	a		

		• M	a	WEP	a
			a		
F	R	• C	a	a	a
			a	a	a
		• E	a	a	a
			a	a	a
		• T	a	a	a
			a	a	a
		• D	a	a	
		• S	WEP	a	a
			a		P
A	Sa	• B	a	a	a
L	a La	• S	a	a	a
			a	a	a
		• A	DNR	a	C
		• Pa	a	a	a
S	a	• P	WEP		
U	a				
		• E	a	a	a
			a		
		• C	a	a	a
			a	a	a
			a	a	a
Q	a	• C	WEP		a
I		• E	a	a	
		• U	a		a
I		• C	a	a	a
			a	WEP	a
		• I	a	a	WEP
		• Pa	a	a	a

Note Challenge a e bioph icall and c l all elational Ba ie of one of en c ea e ba ie o ano he

Theme: Institutional Challenges and Opportunities: Connection or Conservation?

Subtheme: Rewilding Societal Norms

"... it's the knowledge that they've been handed which is to trim and prune for maximum production or whatever it is or maximum flowers or you know instead of whatever it is that the plant is supposed to do." [Morgan]

"So, moved here and this beautiful property which was pristinely capped, everything was mulched. Like you don't see the weeds that I have here, they did not exist here. So, but I wasn't able to keep the property, it was like six hours to mow this thing ... I was embarrassed about my property. I had a lot of guilt about what the property looked like because I wasn't able to maintain what it looked like when I bought it. And I had people that were gardeners, I wasn't a gardener, I just like to be outside, and so when I was having people coming over and then they telling me, 'oh you need to do this, and this is a weed pull that out and clean up this garden', and I just got overwhelmed, and I was like I actually can't, I can't." [Morgan]

presence presents

"And then about six years ago there was an invasive weed that was coming up in the gardens and I thought I was going to lose everything. And then the root system is a source of food in times of famine. So, they have like these little root tubers and you can like eat them like. I was like, I can't kill you, like I was trying to kill this weed because I thought it's going to take over everything and I was going to lose the place, I thought I was just going to kill all the gardens. So, took me a while to look up what the plant was when I discovered that it was medicinal and edible, I was like are you kidding me?! This might save me one day like this is great. So that for me just really opened up my eyes to what else is growing in my grass that could be useful or helpful." [Morgan]

"... if you just let it come, it's amazing how much is here like since I been here there's at least four new plants that come every year. And the amount that has happened since I stopped moving has been insane. There's now seventy, last count there was over 70 medicinals growing here ... So really letting the landscape do its thing, and me letting go of expectations of what something needs to look like, and then embracing what the gifts are of each thing that's coming ... So, the landscape for me has just been changing by what's showing up." [Morgan]

"... if we stop growing grass on lawns and start letting are lawns eventually go wild that, we can find more and more things that are edible to grow right there on our front side or right there in our backyard. And those things don't have to be things that are cultivated for picking, they can just exist there. They are in the soil already; those seeds are already there dormant

"I find mushroom hunting is always pretty exciting ... It's funny because before I started picking mushrooms, I didn't even like mushrooms, like the mushrooms you get in the supermarket. I don't know, they didn't really do anything for me, but ... the wild mushrooms, the whole process that's involved in seeking them out it just really has deepened my appreciation for them." [Avery]

Subtheme: Governance and Land Management

"Yeah, and it's usually the case too, it's someone's backyard." [Charlie]

"I'm not usually harvesting from clear cut or recently clear-cut areas ... I have woodlot owner friends and acquaintances that if I'm looking for like forest plants, I'm usually on their property." [Riley]

"You certainly have to have your own space that you're allowed to forage for sure and that, that you're allowed to forage. It's not necessarily accessible to everyone right ... another issue where it's safe to forage." [Alex]

"Unfortunately, it also falls down to the jurisdiction and individual inspector ... Because they can't control you, because in order to legislate a person from picking chives in their yard to knowing what, you know, sweet woodruff or wood sorrel or any of the sea grasses ... like the level of education that would be required, they just, couldn't keep up with it. Yeah, so they kind of have to leave it wide open." [Dylan]

"There is no doubt in my mind whatsoever that it is a combination of industrial forestry and irresponsible private forestry ... But all around there's literally hundreds of square miles of forest ... the local folk they see that basically as a firewood bank ... Nova Scotians have a philosophy that if it's private land or private forest, you should be able to do whatever the hell you want on it ... intentional turning a blind eye toward what's going on in private land. But there's also ... the massacre of ecosystems on Crown land in Nova Scotia, and that's going on, too." [Blake]

"Like sometimes I think it's just an old boy's club. And they're just stuck in their ways ... It's such a small province. I think that has a lot to do with it ... a lack of ability to be creative." [Riley]

"If you go to a private land and the owner says 'no this year, you don't go to my land', you have no access to this product ... if you have access to a lot of land, if the market was totally good, the collection was totally good with private owner land owner, natural resources and foragers ... if all the situation was totally good, yes you could yield a lot of

product ... If I need to find all this quantity in Nova Scotia, I would have to ask the Department of Natural Resources can we have access to a lot of land, I would have to ask to some private land [owner], can I have access to your private land.” [Terry]

We have so much prospect, we ... we are, or were, it's getting to be more an issue of were, a biologically rich province, we had a tremendous opportunity to develop things like ecotourism and numerous forest farming. We even had lots of shitake mushrooms here in abundance once ... We had an abundance of wild truffles here back when we had Acadian forest. But to destroy the Acadian forest it's decades, generations it takes 50-100 years to even to begin to re-establish an Acadian forest, really it takes 500 years for that development to mature. It takes an incredibly long time to start getting things back like truffles, and yet truffles are worth 100 bucks a pound." [Blake]

Saccharina latissima (L.) Lane, Mayes, Druehl et Saunders, *S. groenlandica*
(Rosenvinge) Lane, Mayes, Druehl et Saunders, and *Laminaria digitata* (Hudson) J.V. Lamour
Chondrus crispus Stackh. *Ascophyllum nodosum* (L.) Le Jolis

"We had someone here from health inspection the other day ... somebody called the health inspector wondering how it's possible for a restaurant to serve wild food. For most of it, it was really good. She got here and said, 'well anybody can have a garden in their backyard, and serve food in their restaurant, and it is up to the restaurant and their liability as to how they proceed, basically.' ... A friend messaged me ... their health inspector said that they can't legally purchase food from a farmer's market and serve it at their restaurant." [Robin]

"One time, the CFIA or Bureau of Canada said we can't use [foraged ingredients] ... one thing or another, you kill all this kind of food ... if you kill this connection to the wild, thirty, forty years or longer, you will probably only eat medication." [Terry]

"... there's been talk of regulating the industry, like in the province of Quebec, a wild harvesting license to be able to pick and then sell any kind of wild edible commercially. And I think that could be a really good idea, just to have some sort of oversight on this like growing industry because there are some plants or mushrooms that can make you sick, that can even have fatal consequences and you know, there's like synergistic effects of different plants and mushrooms so, you do really need to be aware of like what you are doing ... like a restaurant who is then going to be selling that to the public, they're putting a lot of trust in you that that product is what you say it is, and it can be used how you say it can be used. So, I think that it could be good if there was like ... central kind of organization or membership or something that you could be a part of ... even for sharing knowledge and having gatherings and get togethers ..." [Avery]

"I just hope that there's more infrastructure for it [supporting local], more resources ... if things get deregulated more, there'd be more of a wild game industry, I think there's got to be a lot of deregulation ... or maybe not so much deregulation but better regulation ... every kind of meat has to go to PEI to get butchered. You have to take it all the way to PEI and bring it back. Why don't we do that here ... There's plenty of butchers and people that are able to do it more, and are willing to do it ... So, like I wouldn't say deregulation because I still believe that there's a huge amount of safety that has to be put in place but like just making more available ..." [Charlie]

"... They [the government] always think about big industry and the money, and if you take the big money for the one industry with 1000 people that's not a lot of money for each people. But if you think, 'I need to help this company that's only 4 people but they do an amazing product,' that's a lot of value for 4 people, more money for 4 people." [Terry]

"... I've been doing this for 25 years. When I don't do my job properly I know the consequences of it. You know, it's just, it's a sad thing. I can see the only way forward in all of this is education. It's altering, you know, whether it's educating people about what forageable foods are good for dietarily and medicinally, and a lot of them can be bugs. And I think how much better it would be for our cheffing industry ..." [Dylan]

"It's also the health inspectors saying you can't serve wild food in your restaurant. I hope that there is an awareness, kind of across the board for people like, for fucks [sic] sake, all food was wild food at one point." [Robin]

"I guess it wouldn't be red tape when it comes to that stuff because it's the red tape that holds up all that stuff ... which it going to make it more available ... because there's I know there's people who want to use it but then it gets, the worst part is that it gets touted as a tagline, it's like 'yeah, we're local ingredients and wild foraged ingredients.' It's like yeah, you've used it once or you use one or two things and you're branding yourself as this. It's a buzzword ..." [Charlie]

Table 10.

Participant Recommendations and Hopes for the Future

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“So maybe that’s what really has to happen for long term change; we have to know how to rectify and change people's hearts.” [Blake]

Chapter 6

Growing Forward

Recommendations for Future Research

Significance

Limitations of Inquiry

"It's more that there are scientific reports that are generated and then the parts they want to cherry pick, and when there are no parts in there to cherry pick, they'll just hire someone to do the next report that's going to tell them what they want to hear." [Blake]

Concluding Remarks

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McKa I Quest of the Folk: Antimodernism and Cultural Selection in Twentieth-Century
Nova Scotia M ea McG Q ee U e P e

McLa R J H e P T E e M R P e M R Ga e d f d ec
e e e ff a ba ec e a a d a a e e Local
Environment 19 d

McLa R J P e M R U e e L S Ba a D J B L P U ba be
f e d c e a d ac ce a f a e Sea e Wa USA Urban
Forestry & Urban Greening 28
d d f

McMa C R Biodiversity and the Law: Intellectual Property, Biotechnology and Traditional
Knowledge. Ga e ead UK TJI e a a L d

Me D Ca C G Re a a D e f e H a Be I Human Foundations
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Management 33 d X

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Be a The Yale Journal of Biology and Medicine 91 Re e ed f
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C de a e C e f e F d Sec Economic Geography 76
d b

M O T T e d N R e H F e C A Ob e a a S d Hea
S e f E a d Da a Health & Place 18
d ea ace

Nade fa M G H G a a e F S ba Sa A P ef Me d fSa
Q a a eRe ea c *Strides in Development of Medical Education, 14* e DOI
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Nd V Pa a e G Va eC ea T Ne S e I *Information and*
Communication Technologies in Tourism 2005 Ve a S e Ve a
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E Ec ca Re e ce *Environmental Ethics 40*

N e B c af F a e Pac f c N e a dF a Ca ada d Re e ed
Ma c f e b c af c

N aSc aDe a e fNa a Re ce *Forest Ecosystem Classification of Nova*
Scotia (Part I: Vegetation Types, pp. 1-263 Re e ed f
a c aca a f e e e df c e df

N a M F d ea a a d ca ce a E ba f a
a d d c e a d ca e L d *Geoforum 99*
d J GEOFORUM

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A e ba e Re e ce a dEa S e a d eA ce e *Frontiers in Ecology and*
the Environment 11 d d

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Re U a da *Journal of Ethnobiology and Ethnomedicine, 15*
d

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a fac SME f e e a e S e a c ea e e e a dca e e
Journal of Engineering and Technology Management 48
d e ec a

Pa e E D a c e F M e J P A a ca e A Ac Ne
A ac *Annals of Tourism Research 37*
d J ANNALS

Pa S Ha a F R bd M A T eC fL ca F dP c e e T N e
I d e C e Ca ada *Food and Foodways*

Pa a L A H S M G ee C A W d J P D a N H a d K
P ef a f a a eDa aC ec a dA a M ed Me d
e e a e ea c *Administration and Policy in Mental Health* 42
d

Pa e C C e J B P C e Ide a d Be e C a
U de be *International Journal of Culture, Tourk and HospkkResearch* 4
d

Pa a e D Bebe P J Pa a M Sc C L ca ed e ab a ab e
a e a da a ab f d ed c a a ece Le a d G eece *Journal of
Ethnobkogy and Ethnomedkne* 3
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Ethnomedkne* 3 d

Pa e a L K a A Z d EAM H e D lc A P e Z W d F d
Pa a dTe d T e U e F K ed ea dPe ce D e fC a e We
S a a l d e a *Foods*, 9 f d

Pe e L A *A Field Guide to Edible Wild Plants: Eastern and central North America* T e
Pe e U edS a e L b a fC e Ca a P b ca Da a

P e ce A R *The Distance from Necessity: A Bourdieusian Analysis of Gathering Practices in
Vermont* A c U e Ne E a d

P e M R LeC e J McLa R H e P U ba f a a d e ea a ec e
f be df *Sock & Cultural Geography* 15
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P e M R McLa R J E e M H e P T U ba F e J ce a d e R
W d F d Med c e a dMa e a eC JSTOR *Human Ecology* 41
Re e ed f abe e e ada a f ab c e

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P e W H Sce ce N S l f Ed be d a fN aSc a Re e ed f
da ace ba da ca a de

P e J l ed c a e a ac e add e ca ec ca a d
ec c a e *Environmental Conservation* 38
d S

Raffae R D ff C P Be Pace Pace E e e ce a d Se e f
Be a Ec ad a M a a l a a A e Re *City & Society* 25
d c

Red S U e f d a d e d e d b e a a d a f e e
da f e e f Sa a e d e a B a a d He e a *Collegium*
Antropologicum 34 Re e ed f
cb b ed

Re a B C ad E A e a e e e f c e c e d e a e a d e a f
e e a a a e e *Journal of Environmental Management* 159
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Re e Ga c a V Me e de Bace a G Ace Ma a L Ac a Na a R Ca e M L
D e P Pa d de Sa a a a M F fa e f d de ca e e
I e e e d e e f d e d b e a c a ec e e ce
Ecological Economics 120 d ec ec

R d e M *Nature via Nurture: Genes, Experiences, and What Makes us Human* U ed
K d Ha e C P b e

R ad C F d a d Ga f S a ab e Pace De e e A M d c a
A a f D f f e T e e ca A ac e *Sustainability* 9
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R be W d J F da Ma Va a Sa Re e ed f
a e H e Ma

R d e P e S Ma e M e Y F e e e ce f ec
I e a c a e a d f e c e a *AMBIO* 44
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R e E J *Heirloom Seeds Our Cultural Past Natural Resources Conservation Service*
Louisiana Many Field Office District Conservationist Re e ed f
c da I e e FSE DOCUMENTS c df

R ea H Be e D Na e Pa De e e P a *Acta Horticulturae*
d Ac a H c

R e A C Be L T a da Fe P c f Re a *NWSA Journal* 17
Re e ed f ab e

Sac de a S E e M R H e P T De c f W d F d F a P ac ce e
Med a I ac f e G ea Rece *Society & Natural Resources* 31
d

Sca a R Da e e R F d T A d T e W d I M C Ha L S a e R
M c e N Mac B Ca b e Ed *Food Tourism Around the World: Development,
Management and Markets* Ne Y R ed e Re e ed f
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a e NQS RKQB AAYBQI G EH f J e a e f d
a e f fa e

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ca a e ca be e f d a ea ca ed d ce
a a

S a ee S A ad M Ha N Ed be W d Pa AS O ec e F d
I ec I *Edible Wild Plants: An alternative approach to food security* C a
S e l e a a P b d

S e ef O We be P J P e a F D T e Va e f Na e Pa a d L ca P d c
a Ea f G ba A c e *Frontiers in Plant Science 8*
d f

S A N T A N P a a a O N Ma a V G He c M T ad a
a d C e F d U e f W d Pa L ed e R a P a ac ea *Frontiers in
Pharmacology 8* d f a

S da K L Ka e E Ba c R F d c e a e a d d c a
c b e ac de a d ee e e ce ec a a a de e e
a e *Journal of Sustainable Tourism 23*
d

S da K L M c P Y Ga d P e E I F d T I d e Se a a
S a e f S a abe De e e T e Ca e fle a a L e l e Ec ad a
A a *Sustainability 8* d d

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l e e P ca Sce ce Re e ed f
e ea c a e e b ca F e a a A d
c e c ed d d a e e ca ce ce

S R F d Pace a d A e c L ca F da d e S a abe T E e e ce
Journal of Sustainable Tourism 17 d

S be R A S e R ce M Ma a G M I d c Rea a Va e a a T f
S a C e a Sce ce a d Ma a e e *Frontiers in Marine Science 6*
d f a

S B d Ed be a d Med c a F f We e N a Sc a N a Sc a M c ca
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S S L J H B H Ma E e e S e D b T a d O e
I d e Journal of Travel Research 45
d

S a c Ca ada Population Estimates, Quarterly Tab e La d fed
DOI d e

S a c Ca ada Focus on Geography Series, 2016 Census S a c Ca ada Ca a e
X O a a O a Da a d c Ce Re e ed f
a ca c ca ce ece e e a a f Fac
e cf La E GK PR GC TOPIC

S a c Ca ada Surveys and statistical programs - Travel Activities and Motivation Survey
(TAMS) Re e ed f
a ca c ca db SV F c e S e SDDS

S W Le e C Z Ne C B ebe F a a a S ca Ec N e
O a A Ca e S d f A a d F Na A S e W d F d N B ebe
Ba Fe a a d e A a H a d W d B ebe Fa a d W e Ce e Centre for
Sustainable Food Systems, Wilfrid Laurier University A

S fe L MacLa e A Mace a M O G a K C ce a a e F d
c ea d ce eb e Tourism Management 37
d J TOURMAN

S e a d D Non Timber Forest Products: Growing Opportunities N a Sc a De a e
f Na a Re ce Re e ed f
a c a ca a Ed ca d d e d e df d e df

S add C T a d a C ca P ca Ec f H a F e l e ac C ec
He b a d M a B a a L ca Transactions of the Institute of British
Geographers 34 d d

S d e A J L dbe E N C Pa L Q a a e T e a c A a Ba ed
De c e P e e Nursing Open 6
d d

Tada M S e J C a K M A Ma e e f e e a a e *Ecology and Society* 22 d ES

Ta da N I e CD Wa C Ca e a f ba c a ec e e ce *Journal of Urban Ecology*, 6 aa d e aa

T a D R A Ge e a I d c e A ac f Q a a e Da a A a *American Journal of Evaluation* 27 Re e ed f f a e c PDF P c I d c e C e A a df

T a L H dde Hab a W a a a e a Re e ed Feb a f dde ab a ca a a a e a

T e R L c P S a b e e a d de a de e e *International Journal of Hospitality Management* 20 d S X

T e R L c P A S a B e Ne a d T De a De e e *The International Journal of Entrepreneurship and Innovation* 8 d

T a J E *Linking tourism and conservation: Exploring the ecotourism industry in Atlantic Canada and its potential for national parks.* Da e U e Re e ed f c ec ca ada ca b f d f df

U ed Na S B d e I *General Assembly of the United Nations, President of the 74th session* Ne Y U ed Na Re e ed f a ed a b d e

U e Y A e H D a a A J e N Tad a e f ed c a a e *Journal of Ethnobiology and Ethnomedicine* 8 b ea f e f Ca ada Re e a d e ec e d

U a W We b B *Marketing Specialty Fruit.* C e U e Re e ed f b ca d c e ed d c a Ma e df a df

a de Va A G O a d De e e f Ec *Philosophy of Ecology* d B

Wa e M *Wild Plants of Eastern Canada: Identifying, Harvesting and Using. (in Atlantic Books Today, Spring (No. 57).* Ha fa NS N b P b L d

We H e D A N NS T e d e d a a ee f *The Chronicle Herald* Re e ed f a e ce e e ce be d ee ec ce e ad ca c e a e d e d a a e e f a e ce e

W f d M R a e L I d e T B e e A E a S d f
B e O e Pe ce f D e a d l b *Tourism Recreation Research* 39
d

W d B ebe P d ce A ca f N a Sc a W d B ebe P d ce A ca
f N a Sc a W d B ebe P d ce A ca f N a Sc a Re e ed A
f db ebe e c

W d ad A Kebe e Y L Y C a T a a D e f Re a Ec c
De e e a d S c C a Re a a E de ce f A a a Na a Re a
S a e E a *Journal of Destination Marketing & Management*, 19
d d

W d B E Bac R S a a Rea a a d Affec e U de a d f C e a d
Be f Y Pe e T da T a d a Ne c ce a Fa e I *Interrogating*
Belonging for Young People in Schools S e l e a a P b
d

W d L J T e e e ce f a e f e a d ffe e fe a e e e ea
af e a ca *Canadian Journal of Forest Research* c f
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W de E C e E De de P c J Ca e A C a l d ca f l d e
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W d Hea O a a WHO *Urban Green Spaces and Health: A Review of Evidence.*
Copenhagen. WHO Regional Office for Europe C e a e Re e ed f
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ea e e e de ce df a

Z a J P ca ec f d a a ca e f S a La C S e
C a l J Sa e E B He e Ed *Tourism in the global south: heritages identities*
and development L b Ce de E d Ge f c U e ade de
L b a Re e ed f b e e e b e d a

Appendix A

Table 1.

Theoretical Terminology of Conceptual Framework

Figure 1 displays a 3x3 grid of plots showing the effect of the number of trials (n) on the probability of a correct decision (P_c) for different values of the number of trials (n). The plots are arranged in a 3x3 grid. The top row shows P_c vs. n for $n=1, 2, 3$. The middle row shows P_c vs. n for $n=4, 5, 6$. The bottom row shows P_c vs. n for $n=7, 8, 9$. The x-axis for all plots is ' n ' (number of trials) ranging from 0 to 10. The y-axis for all plots is ' P_c ' (probability of a correct decision) ranging from 0 to 1.0. The plots show that P_c increases with n , and the rate of increase is higher for smaller n . The plots are labeled with 'P' and 'A' at the top left and bottom right of each plot, respectively. The plots are also labeled with 'C' and 'A' at the top left and bottom right of each plot, respectively.

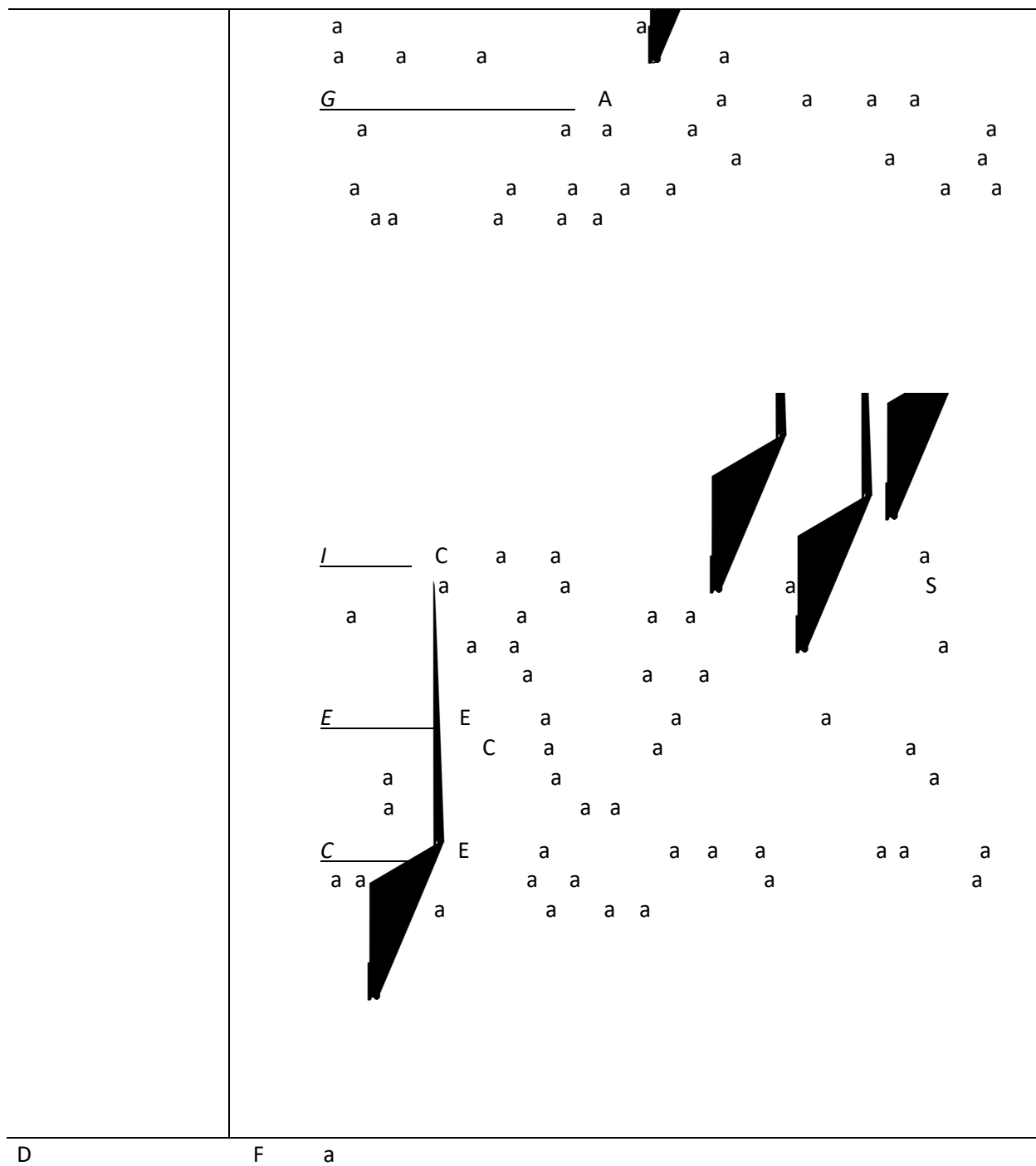


Table 2.

Descriptions and Tenets of Relational Ecologies of Belonging used to understand Relationships with Nature

T a		C D a l a	
T			
C a	U	a	F C a W
B	a a		a a a
a l	a	Q a	a a
	a F	a	
I a			
• C	a a	a	a a a
• P a	a a		a a a
• E	a	a	a a a
• M a	a	a a a	a a a
• T a		a a a	a a a
• P	a a	a a a	a a a
• C	a a	a a a	a a a
• H a	a	a	
• A			
B	B	a a a a a	a a a a a
a P a	a	Ra a D A	a a
	a a		a a
	a a	a D a	
I a			
• D	a	a a a	a a a
• A a	a a	a a a	a a a
• C	a a	a a a	a a a
• C	a	a a a	a a a
• M a		a a a	a a a
• H	a a	a a a	a a a

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B T a a a a A a
a M a a a a a a a a
a a a a a P a
A

A black and white photograph of a whiteboard. The whiteboard is divided into a grid of 100 squares, arranged in 10 rows and 10 columns. Most of the squares contain the lowercase letter 'a'. The bottom-left square (row 10, column 1) contains the text 'WED 11/11/11'. The whiteboard is mounted on a dark background, and the lighting is somewhat uneven, with the top and right sides appearing brighter.

P

A a

The diagram illustrates the evolution of a population over 10 generations. The population is divided into two main sections: 'N' (Neutral) and 'P' (Positive selection). The 'N' section shows a population of 10 individuals (represented by dots) with a single 'T' allele. The 'P' section shows a population of 10 individuals with a single 'a' allele. The diagram illustrates how a single mutation can spread through a population over time.

Generations are numbered 1 to 10. The 'N' section shows a population of 10 individuals (represented by dots) with a single 'T' allele. The 'P' section shows a population of 10 individuals with a single 'a' allele. The diagram illustrates how a single mutation can spread through a population over time.

Appendix B

Sample Request for Participation in Research Study

“Wild Edible Plants in Nova Scotia: Food Tourism Environmental Scan.”

date

Appendix C

Informed Consent Form

Date

Name of Participant:

Study Name W E P N a S a F T E a S a

Primary Investigator

J a R

Ma S a H a N a a

a a XXX XXX XXXX

Thesis Supervisors:

L a Ma MBA PD A F A H a N

a a a XXX XXX XXXX

Ka B P D P B a T

a XXX XXX XXXX

Purpose of the Research T

a a N a S a a a a a a

a a a a a a F a F a

A O a a FA U Na a W a P a

S WEP a a a a

a a a a a a

a a a a a a

Participant Roles: Pa a

T a a a a S a

a a a a a a

Risks and Discomforts T

a a a a a a a a

a a a a a a a a

a a a a a a a a

a a a a a a a a

Benefits of the Research and Benefits to You T

a a a a a a a a

a a a a a a a a

a a a a a a a a

Voluntary Participation Y a a

a a a a Y a a a

a a a a a a F a a

a a a a a a a a

a a a a M Sa V U

Withdrawal from the Study

Questions About the Research? I

Legal Rights and Signatures

I _____ a a E P
N F E J a R MAHN I a
a a a a a a a a a a
M a a

Signature _____

Date _____

Signature _____
P a l a

Date _____

Open-ended Questions of Semi-structured Interviews

I	Q	P	Da a C
<i>H</i>		T a a a a a D a a a a a a a a a a a a a	a a a a a a a a a a
		T a a a WEP a a a T a a WEP a a a a a a a a a a	
<i>C</i>	<i>P</i> <i>D</i>	T a a a a a WEP a a a a WEP	WEP a a a a a a
	<i>P</i>	T a a a a a a a a a a a a a a a a a a a a a a a a a a a a	a a a a a a a a a a a a a a a a a a a a a a a a a a a a a a
<i>P</i>	<i>C</i>	T a a a a a a a a a a a a a a a a a a a a a a a a a	a a a a a a a a a a a a a a a a a a a a a a a a a
	<i>N</i>	T a a a a a a a a a a a a a a a	a a a a a a a a a a a a a a a

<i>I</i>		T	a	a	a	a	a		a
				a		a	a		
<i>C</i>		S	a	a				a	a
	<i>I</i>								

Sample Journal Entry

"Primrose. Primrose is absolutely lovely ... And that smell, it's just like that jasmine tea of it, it's really amazing." [Robin]

"Primrose is a really beautiful. It's an edible flower ... It's sheer magic that they're pollinating by moths in shitty weather and at night. It's kind of like counterintuitive to everything you'd expect from a really beautiful smelling yellow flower."



Schinia florida

Wild Edibles Species mentioned in the Interviews

Wild Edible Plants (Kingdom Plantae)									
C C a Na				S La Na			Fa		
				G S NS					
B		a							
S	a	a		A			A		
S	a			R			A		
				S	a	R			
				S	a	a R			
W	a	C	a	Pa	a	a a a	A		
S	a	S	a S a	L			A		
a	B	a	S	L					
		W		L					
W	a	a a	a F	A			A		
a	a	a	a						
B				A			A		
				C		A			
				G	a	A			
				W		A			
Ca	a	P	a	C			A		
W	a		P a	M			A		
P	a		D a						
C		C					A		
Da		C	a				A		
E	a	a		E			A		
				P		E			
F							A		
G							A		
				B					
				Ca	a	a			

				D Ea N a	
				Ga G N	
				R	
O a O a D				C L	A
Sa G a a				C a Y a M a a O a P a	A
Ya C a				A	A
J T M N				/	B
				S / S / Pa /	
A				A Ba a A G a A G a S a A R a A	B
B				B G a B Pa B S B Y B	B
W				N C	B
				C	
L S a				M	B
O a O a S a				M	B

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			O		
			A a a	La a	
			L a	M a a	
Ea	a	W	G		E
G			M		E
La a	a Ma	La a a	R		E
L	M	a a			E
R	a				
C					F
			R		
			A		
			H		
			W		
			Ra		
W	a				F
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	Y	O	
	W	O	
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P	P		
	Ea	P	
	Ja	P	
	L		
	R	P	

	A	a	H	
	a	R		
	Ca	a a a	R	
	D	R		
	E	a a		R
	S	a	R	
Q	C			R
W	a	R		R
	D	a a	R	
	R	a	R	
	P		a	R
W	R			R
	R	R		
	C		V a	R
	S		R	
	S	a	R	
R	a	A	a a a	R
	R	a		
W	a	F		R
	V	a a	F	
	W	a	W a	
	F			
A	P			
	C	a		a
	P			
	La	a		a
	P			
A	Fa	a	a	
W	a	A		
	R			
	P	a	R	
	R	a	Ga	a R
	S	a	R	
	W	a	a	R
Ca	a			

S

V

B a a a a C a a

Ca

Na a a a

A a V

Ca a a

Ea

G a V

H B V

Ma

Ma

S

S a a

S B V

W a J

Wild Edible Fungi (Kingdom Fungi)

C C a Na	S La Na	Fa
	G S NS	
F a		
M a	C A	A
P a	C a L	A
	G a L	
B a		B
K N	B	B
P P		
B a B a a	C	C
H	C	
	C	
C a	C	C
	G a C	

	R	a	C	
	T	a	a	Y
	a		C	
M	a	a		<i>D</i>
M				<i>H</i>
	<i>M</i>		<i>M</i>	
	B a			
C a a	<i>I</i>			<i>H</i>
L	<i>H</i>			<i>H</i>
S a	<i>L</i>			<i>M</i>
Ma	<i>G</i>			<i>M</i>
		H		
Ma a		Ra	H a	
O	<i>P</i>			<i>P</i>
C			C	<i>P</i>
	<i>L</i>			
	<i>L</i>			
T a		T	a	<i>P</i>
	T		a	
P	<i>L</i>			<i>R</i>
	C	a		C a
a	<i>L</i>			
	P		a	<i>L</i>
	Sa		a	<i>L</i>
Ma	P		W	a a
a	A	a	a	
	P	a		C

Wild Edible Algae (Seaweeds) (Kingdom Plantae or Kingdom Protista)

<u>C</u>	<u>C</u>	<u>a Na</u>	<u>S</u>	<u>La</u>	<u>Na</u>	<u>Fa</u>
			<u>G</u>	<u>S</u>	<u>NS</u>	
S a	a	a				
			A			A

C	C	a	Na	S	La	Na	Fa
				G	S	NS	
L		a		R		C	C
				G		R	
				Ca		C	
				O	a	a	P
				T			