Permaculture as a driver of social change? A textual analysis of permaculture with perspectives from coastal British Columbia

by

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Abstract

My research aims to develop a deeper academic understanding of how permaculture contributes to alternative sustainability politics, focusing on how permaculture is envisioned and enacted as social change. Drawing on textual analysis, semi-structured interviews with permaculture practitioners, and feminist political ecology and critical food studies literatures I argue that while permaculture design is critical of industrial modes of production it remains rooted in universalized ideals of sustainability found in Western society. The creators of permaculture's focus on apocalyptic narratives of peak oil, resource scarcity, and middle-class, individual-scale transformation positions sustainability as an issue universal to everyone while failing to account for global social, economic, and political inequalities. If permaculture's goal is truly social change, practitioners need to look beyond permaculture towards more radical traditions that centre intersectional social justice. Without these critical interventions, permaculture risks becoming a white middle-class space that reproduces capitalist and colonial social relations.

Keywords: permaculture; social change; alternative food; political ecology

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Chapter 1.

Introduction

In an attempt to address ecological, social, and political issues associated with industrial agriculture paradigms, social movements and associated scholarship have emerged around the globe, including organic agriculture, local food, food security, food justice, and food sovereignty. These movements and critical literatures variously address issues including biodiversity loss and climate change (Weis, 2018), gendered violence (Gillespie, 2014; Hovorka, 2015), genetic technologies (Bernardini, 2017; Didur, 2003) as well as the socio-political inequalities of a globalized, capitalist driven food regime (Alkon & Cadji, 2018; Daigle, 2017; Guthman, 2004; Meyers, 2015; Ramírez, 2015; Wittman, 2009). Permaculture, an ecologically focused design philosophy, is one of these social movements seeking to rethink how people grow food and organize themselves in relation to nature. With its own set of ethics and design principles, permaculture presents itself as an attractive means for exploring real world social change for activists and academics alike (Veteto & Lockyer, 2008).

Permaculture design aims to address environmental and sustainability issues through low inputs, zero waste, ecologically conscious, and grassroots practices in agriculture, sustainable technologies and building design, as well as social, spiritual, and political organization (Holmgren, [2002] 2011; Veteto & Lockyer, 2008). Contractions of both “permanent agriculture” and “permanent culture,” permaculture design is focused foremost on reconnecting humans to local ecologies and creating a more sustainable society. The design methodology is touted by its creators, Bill Mollison and David Holmgren, as an alternative to industrial agriculture and the exploitation of nature due to permaculture’s focus on sustainability and its overall critique of high energy, wasteful living (Holmgren, [2002] 2011). Permaculture shares many similarities with agroecology, a discipline focused on the “social, economic, and ecological factors associated with food systems,” which seeks to address the negative social and ecological impacts associated with industrial agriculture practices (Méndez, 2010, p. 55). The discipline of agroecology has been heavily influenced by natural ecosystems processes and the traditional agroforestry practices of local and Indigenous people around the world in

order to develop ways of practicing agriculture that differ from conventional industrial practices (Ferguson & Lovell, 2014; Hathaway, 2016; Méndez, 2010). While permaculture shares many of the same characteristics and influences as agroecology, it has its own set of ethics, design principles, and practitioners that set it apart from other environmental and sustainability paradigms (Ferguson & Lovell, 2014; Fox, 2013). These ethics and design principles focus on observing and reproducing the self-renewing processes that occur in nonhuman ecologies while being mindful of the interrelationships that exist between people and the environments they live in (Veteto & Lockyer, 2008).

I have focused this thesis on permaculture out of an interest in permaculture's overarching claims of social transformation with regards to relationships with nature, and because academic studies of permaculture have until recently been scarce (as noted in the literature – see Veteto & Lockyer, 2008). Academic research on permaculture has focused on its potential as a space to observe and investigate alternative sustainability practices due to the diverse means of practicing and applying permaculture principles (Puig de la Bellacasa, 2010; Roux-Rosier *et al.*, 2018; Veteto & Lockyer, 2008). There have also been studies showing permaculture to be dominated by white practitioners, who are embedded in capitalist markets, and are primarily in European or settler colonial states (Ferguson & Lovell, 2015; Massicotte & Kelly-Bisson, 2018). These two points together create an important avenue for research, especially given that, as I discuss below, similar food driven sustainability practices have been critiqued for having visions of social transformation that lack meaningful engagements with social justice (Alkon 2008; Guthman, 2008; Slocum, 2007). Does permaculture have some of the same limitations and exclusions that have been identified in other alternative food movements? This is a key question I take up in this thesis.

In a broad sense, my research is a political ecology of permaculture design. Political ecology research addresses "the condition and change of social/environmental systems, with explicit consideration of relations of power…with an understanding that there are better, less coercive, less exploitative, and more sustainable ways of doing things" (Robbins, 2012, p. 20). By taking a political ecology approach to this thesis I am considering human-nature relationships as political. Robbins argues the difference between a political and an apolitical ecology is the "difference between identifying broader systems rather than blaming proximate and local forces; between viewing

ecological systems as power-laden rather than politically inert; and between taking an explicitly normative approach rather than one that claims the objectivity of disinterest" (2012, p. 13). Robbins also argues that whether human/nature relationships are considered political has less to do with the inherent qualities of those relationships and more to do with whether or not power relations are acknowledged and addressed. Consequently, the central focus of this thesis is to analyze permaculture's goals for social change as described by its creators Mollison and Holmgren and the degree to which these goals fully recognize power dynamics in socio-ecological systems.

In setting out to analyze permaculture's goals for social change, it is important to recognize that permaculture exists as more than the writings of its co-creators. While standardized curriculums and certification systems do exist, permaculture and its principles have been adapted differently by practitioners around the world. But permaculture as a whole is still heavily influenced by the work of Mollison and Holmgren. *Permaculture One*, the first formal piece of work on permaculture was published in 1978 by Mollison and Holmgren and is commonly referred to as "a permaculturalist's bible" (Veteeo & Lockyer, 2008, p. 49). Rather than provide an all-encompassing look at how permaculture design can be practiced, this thesis is geared specifically towards the work of Mollison and Holmgren because of the influence they have had within the realm of permaculture design. Books on permaculture are often heavily based on the material written by Mollison and Holmgren (see Bloom & Boehnlein, 2015) and other well-known permaculture authors often tie their expertise to their learning under either Mollison or Holmgren (see Hemenway, 2009). Considering the emphasis put on the work of Mollison and Holmgren in permaculture, understanding how these two authors characterize social change is important and it is a topic that has not been well developed in academic literature on permaculture.

In this research, I look foremost at how permaculture is presented by Mollison and Holmgren in their writings, as well as expert interviews focused on how permaculture design is interpreted by permaculturalists on and around Vancouver Island, British Columbia. Using these two sources I analyze examples of how permaculture design envisions and addresses social change and how those ideas compare to critiques focused on a more intersectional analysis of alternative food politics and sustainability, the main focus of this thesis. Cho *et al.* (2013, p. 788) describe intersectional analysis "as an analytical tool to capture and engage contextual dynamics

of power…for open-ended investigations of the overlapping and conflicting dynamics of race, gender, class, sexuality, nation, and other inequalities." In situating my research within political ecology and centring intersectional analyses of food systems, I ask: What is permaculture's vision of social change? If anything, what sets permaculture apart from other Western sustainability and alternative food practices in relation to social change? Who is permaculture's vision of social change for?

These questions are influenced by my time studying permaculture during my undergraduate degree at the University of Victoria, part of which included participating in a permaculture design course (PDC). During this process I was excited by the promise permaculture seemed to present for sustainable living through ecologically inspired methods (Figure 1.1). Having spent a large portion of my degree learning of the many environmental issues that exist around the world, these methods combined with the permaculture ethics of caring for the Earth and the people presented an attractive means of engaging in practical real-world examples of sustainability. However, the more I became engaged in learning about permaculture, the more interested I became not only in its broad applicability but also the limitations of the practice that were, in the context of my training and learning, not often addressed in a meaningful way. The first aspect that caught my attention was the question of access to land. Many of the primary examples of permaculture I was being exposed to were coming from people with enough economic security to own land and to put in the large amount of time and effort required to set up and maintain a permaculture space. I began to consider how permaculture, as it was being described, might be limited in terms of who could practice it.

Figure 1.1 Example of a permaculture space on Cortes Island, BC demostrating ecologically inspired living.

At the same time, I also began to question my own privileged involvement in these same paradigms as a white settler living in Victoria, British Columbia. Both during and my time after first engaging with permaculture design, I became more aware of and engaged in an understanding of the injustices and inequalities of settler colonialism and capitalism, particularly with regards to living in a city like Victoria. Victoria has many prominent alternative food movements but also ongoing social justice issues related to poverty, addiction, and homelessness. The city has also had a relationship with settler colonialism from its very formation and the signing of the Douglas Treaties in the 1850s. The struggles that minoritized and marginalized people face in particular were issues that I was not seeing strong engagement with in material related to permaculture. I became warier of permaculture's claim of being an overarching alternative to industrial agriculture and a solution to the many social and environmental issues found in capitalist society. However, all the while I was still interested and excited about the potential permaculture has for changing relationships to local environments, food, and nature and what that could mean for sustainable living and social change. Developing a better understanding of the relationships between permaculture, privilege, and the potential for socio-ecological transformation is the major drive and theme of this research.

In this first chapter, I focus primarily on contextualizing permaculture design and setting up my research in relation to it. I begin with a section summarizing what permaculture is, providing a brief history of the practice and how it envisions social change. I then provide a literature review of permaculture focused on how the subject has been characterized in academia in relation to social change. Next, I elaborate my theoretical approach with sections on Western views of nature and environmentalism and alternative food movements. I then explain my methodology and methods. I end the chapter with an outline that elaborates on the remainder of the thesis.

1.1. What is Permaculture Design?

The practice of permaculture is based on the idea of "[consciously] designed landscapes which mimic the patterns and relationships found in nature, while yielding an abundance of food, fibre and energy for provision of local needs" (Holmgren, [2002] 2011, p. xix). The basics of permaculture design were founded in 1974 by Bill Mollison and David Holmgren in Australia and published in the book *Permaculture One* in 1978 (Veteto & Lockyer, 2008). Followed by a similarly focused *Permaculture II*, written by Mollison in 1979, this early work on permaculture design exists as part political manifesto and part technical guide for developing a more sustainable and self-sufficient society. Mollison and Holmgren's initial vision was to create a multidisciplinary design methodology that could be used as a tool to develop rural and urban areas to be less damaging to the environment and more self-sufficient for humanity (Mollison & Holmgren, 1978). Desiring to create a form of low input agriculture, which reduces human impacts on the environment through sustainable practices, their main focus was to address the environmental and energy crises of the 1970s related to industrial agriculture and fears over the potential negative effects of a post peak-oil world (Holmgren, [2002] 2011; Veteto & Lockyer, 2008). They viewed industrial agriculture's reliance on fossil fuels in the form of chemical fertilizers, pesticides, and industrial equipment as an impediment towards transitioning to a sustainable society due to its high energy costs and adverse environmental effects (Holmgren, [2002] 2011; Mollison & Holmgren, 1978). Mollison and Holmgren's early work focused predominantly on cataloguing different useful plant, animals, and agricultural techniques while describing how their use could avoid a societal collapse associated with peak oil. Viewing a low energy future as an inevitability, Mollison and Holmgren positioned permaculture design

as a means towards ‘energy descent’, which they refer to as the transitioning of society towards localized, ecologically friendly, and minimal energy living (Holmgren, [2002] 2011).

While permaculture started as a means of combating the negative ecological impacts of industrial agriculture and the potential bleak future of a post-peak oil world, it has since developed into a global counterculture movement that seeks to change how humans relate to, and live within, nature (Holmgren, [2002] 2011; Lockyer & Veteto, 2013). This can be seen in Mollison’s 1988 book, *Permaculture: A Designers’ Manual*, where he formally lays out in detail for the first time the ethical basis of permaculture design, which focuses on caring for nature and people. This ethical basis was heavily influenced by the work of James Lovelock and Lynn Margulis’s idea of the Gaia hypothesis, which places the Earth as a “self-regulating, self-constructed and reactive system, creating and preserving the conditions that make life possible, and actively adjusting to regulate disturbances” (Mollison, 1988, p. 2). Depending on how nature is cared for, the Earth is seen as either nurturing or deteriorating for humans as the planet seeks to self-regulate its biosphere (Holmgren, [2002] 2011). By incorporating this way of thinking into permaculture design, the practice became more focused on how humans relate to, and are a part of, nature while also having the influence to maintain conditions preferable to humans. As a result, permaculture became more than a sustainability tool and began to have a greater focus on creating a more permanent and stable society. While the specifics of the Gaia hypothesis are not always explicit, the ideal of Earth care is a component that remains prominent with regards to how permaculture design is taught and discussed.

The conventional way of learning permaculture is through a 72-hour permaculture design course that covers theory, examples, and design projects. Many modern courses are focused around the teaching of three ethical principles and twelve design principles (Table 1.1). These principles can differ in number and content, but generally cover the same themes. The ethical principles aim to set the tone for permaculture as focused on ideals of equality and sustainability, while the design principles put these ethics into practice (Veteto & Lockyer, 2008). The first two ethics are consistently “Care for the Earth” and “Care of People” while the third may differ in wording but typically embodies a mindset of limited growth and shared resources (Bloom & Boehnlein, 2015). The design principles are more likely to differ between teachers and

authors but are considered to be “a framework for situating humans in nature” (Veteto & Lockyer, 2008, p. 51) through methods that are focused on creating permaculture spaces that integrate within the dynamics of local environments. The principles emphasize observation, pattern recognition, interrelationships, adaptiveness, and low ecological footprints that mimic the processes occurring in nonhuman ecologies. The principles are applied to more than agricultural and natural systems such as social systems, political economies, and other human activities.

Table 1.1 Permaculture ethical and design principles

Ethical Principles	Design Principles
1. Care for the Earth 2. Care of People 3. Set Limits to Consumption and Reproduction and Redistribute Surplus	1. Observe and Interact 2. Catch and Store Energy 3. Obtain a Yield 4. Apply Self-Regulation and Accept Feedback 5. Use and Value Renewable Resources and Services 6. Produce No Waste 7. Design from Patterns to Details 8. Integrate Rather than Segregate 9. Use Small and Slow Solutions 10. Use and Value Diversity 11. Use Edges and Value the Marginal 12. Creatively Use and Respond to Change

Note: As listed in Holmgren, [2002] 2011

The applications of permaculture vary, including agricultural practices, as well as building techniques, other technical applications, and ethical, spiritual, and political ideology or organization (Holmgren, [2002] 2011; Roux-Rosier *et al.*, 2018). Permaculture is often practiced in sustainable communities referred to as ecovillages where people come together using permaculture design principles with an overall ethos of bioregionalism (Lockyer & Veteto, 2013). Bioregionalism acts as the ideological basis of humans living as integrated parts of the ecosystems and regions in which they live. Permaculture provides the methodology to practice that ideology. Meanwhile, ecovillages represent the real-world locations for permaculture methods and bioregionalism to be applied and tested. These intentional communities attempt to create real-world examples of ecologically sustainable living through the use of permaculture design principles that reinterpret how humans relate to the environments in which they live (Lockyer & Veteto, 2013). Veteto and Lockyer (2008) give the example of Earthaven, an ecovillage in North Carolina where over 60 people are actively experimenting with

alternative living. In British Columbia a prominent ecovillage is O.U.R. Ecovillage. Located near Shawnigan Lake on Vancouver Island, O.U.R. Ecovillage residents engage in many activities related to sustainability such as permaculture design. Beyond this idealized application of the practice, permaculture is also often applied on market farms, homesteads, community spaces, and in private backyard gardens.

1.2. Permaculture in Academia

While permaculture has been practiced for over 40 years, its relationship with academia has been limited, only recently starting to be discussed in the literature. Academic literature on permaculture focuses primarily on describing permaculture projects and communities (Fox, 2013; Haluza-DeLay & Berezan, 2013; Randall, 2013) and analyzing permaculture's potential for transitioning towards a more sustainable society in tune with the limits of nature (Aiken, 2017; Puig de la Bellacasa, 2010; Veteto & Lockyer, 2008). More critical literature on permaculture design exists, but that has been a more recent trend and is not as well represented (see Ferguson & Lovell, 2014; Massicotte & Kelly-Bisson, 2018; Roux-Rosier *et al.*, 2018). As will be outlined in this literature review, one aspect of permaculture in particular that is in need of further investigation is the connection between social and political issues, as well as how power dynamics exist within everyday social interactions. Understanding the power inherent to human-nature relations is a key component of a political ecology approach (Robbins, 2012) and an avenue of research called for in literature on permaculture (Lockyer & Veteto, 2013). Such an approach is overdue: the socio-politics of permaculture was underdeveloped in the co-creators' original theory, which focused on technical design and environmental ethics. Permaculture can benefit in particular from the interventions critical scholars have made in their analyses of Western sustainability and alternative food paradigms that have arisen since permaculture's creation.

Permaculture's absence in the literature has primarily been attributed to a conscious move by its creators and practitioners away from more centralized knowledge and organization (Veteto & Lockyer, 2008). Texts by permaculture's co-creators often include a critique of higher education for lacking holistic and multidisciplinary approaches and being too focused on reductionist thinking (see Holmgren, [2002] 2011), which may contribute to a wariness within the practice towards academia and academic study generally. In its early days, permaculture's mixing of different methodologies, including

applied sciences, philosophy, traditional knowledge systems, and various spiritual practices, was seen as a sacrilegious mixing of disciplines, which acted as a barrier for serious academic study (Veteto & Lockyer, 2008). As a result, while permaculture's early development was heavily influenced by many academic disciplines, the lack of crossover between permaculture and academia since then has dated permaculture theory (Lockyer & Veteto, 2013). More recently permaculture has seen an increase in interest by academics who tend to situate permaculture as a means of observing and experimenting with alternative modes of living with nature outside of capitalist paradigms (see Puig de la Bellacasa, 2010; Roux-Rosier *et al.*, 2018; Veteeo & Lockyer, 2008).

Certainly, the strength of permaculture as a research tool comes from how it can be applied on a case by case basis addressing local needs and contexts allowing for a diverse range of alternative methods of living sustainably to be imagined, experimented with, and practiced, in the real-world (Roux-Rosier *et al.*, 2018; Veteto & Lockyer, 2008). Far from being only a means of practicing sustainable agriculture, permaculture has been described "as a socio-political movement and as a philosophical life transformation" by which people are reimagining human relationships and positions within nature (Roux-Rosier *et al.*, 2018, p. 552). In this sense, permaculture is seen as a demonstration of individual and community engagement with alternative sustainability politics at the grassroots level free from a centralized or standardized definition of what it means to practice permaculture beyond the core set of ethics and design principles (Roux-Rosier *et al.*, 2018; Veteeo & Lockyer, 2008). There is no one way to practice permaculture design, which means that each example of it presents new possibilities for academic study.

The focus on permaculture as a means of experimenting alternative living is visible in Haluza-DeLay and Berezan's (2013) and Randall's (2013) respective analysis of permaculture communities in Edmonton, Alberta and Houston, Texas. Both these studies express the potential permaculture has to develop diffuse networks of similarly minded people looking to address food security and ecological issues in urban areas. These authors highlight the use of permaculture as a framework for situating people in their local environments and to "reclaim their connection to nature within the city" (Haluza-DeLay & Berezan, 2013, p. 131) through direct acts of local sustainability. In both of these studies, permaculture design is used as a framework to rally support and guide the development of food and ecological diversity programs in their respective

cities. Permaculture is seen as a “stimulus for broader socioecological transformation” (Haluza-DeLay & Berezan, 2013, p. 136). In these studies the focus is foremost on how permaculture can provide individuals and communities with the technical means of creating a society that is not dependent on fossil fuels and other resource depleting activities.

Permaculture principles and ethics are also seen as a means of rearticulating humans’ place in relation to nature and reconnecting us to the material constraints of the Earth. Puig de la Bellacasa (2010, p. 159) describes permaculture as “ethical doings that connect ordinary personal living with the collective.” Permaculture ethics provide individuals with a framework that contextualizes their actions and show that they “are embedded in a web of complex relationships in which personal actions have consequences for more than ourselves and our kin” (Puig de la Bellacasa, 2010, p. 160). In her work with permaculturalists in the UK, Fox (2013, p. 174) argues that by practicing permaculture ethics in their daily lives individuals were able to uncouple themselves from modern economic paradigms, “creating different kinds of relationships and practices” with nature. Fox highlights that permaculture in the communities she observed was more about living sustainably than confronting political injustice. The strength of permaculture was that it provides a “pragmatic and dynamic framework” (Fox, 2013, p. 167) for how to live in harmony with nature.

While permaculture’s ability to facilitate imaginative experimentation has made it an accessible means of practicing sustainable living, the lack of clear political drive has led to conflicting interpretations and an uncertainty in how permaculture theory translates into clear social change. Generally, permaculture has been described as seeking to find positive solutions to ecological problems rather than being positioned antagonistically or in protest against the forces creating those problems (Veteto & Lockyer, 2008). In their literature review on permaculture design, Ferguson and Lovell (2014, p. 266) found an emphasis on humans “as ecosystem managers” and the need for “holistic planning and design” as the means by which social change is typically expressed. These authors highlight that permaculture promotes a “model of social change that emphasizes individual personal responsibility and voluntary action and a relative lack of interest in influencing policy or large institutions” (Ferguson & Lovell, 2014, p. 266). Permaculture in this sense is more about applying the practice’s ethical and design principles towards a goal of sustainable living.

The desire for change at the root of permaculture design is complicated by the reality that the majority of those practicing permaculture, at least in an English-speaking context, are white and living in the United Kingdom, the United States, Australia, and Canada, all countries involved in historical and ongoing settler colonialism (Ferguson & Lovell, 2015). Massicotte and Kelly-Bisson's (2018) study on PDCs in Eastern Ontario argues the focus on individual acts of sustainability without clear political drivers can lead to a failure to be socially transformative. In their work, Massicotte and Kelly-Bisson question the accessibility of permaculture design due to the high monetary and time commitments required to participate. They conclude that the heavy monetization of PDCs, combined with the privileged position of teachers can lead the process of teaching permaculture to become embedded in capitalist economies, dampening its anti-capitalist potential (Massicotte & Kelly-Bisson, 2018). Understanding the intersectional power dynamics along lines of race, gender, and class that exist within permaculture is an ongoing topic of study.

To spark and guide future academic studies of permaculture, Roux-Rosier *et al.* (2018) develop three "imaginaries" as a systematic means of investigating permaculture practices. The three imaginaries correspond to three different applications of permaculture design, the three ways permaculture can lead to changing relationships between humans and nonhumans, and their ideological underpinnings. These imaginaries are: technical design practice, holistic life philosophy, and intersectional social movement (Roux-Rosier *et al.*, 2018). Each imaginary represent "alternative visions of human integration across local, global, and political environments" (Roux-Rosier *et al.*, 2018, p. 563). Permaculture as a technical design practice represents the ecological and sustainability practices that are the foundation to how permaculture is practiced. Roux-Rosier *et al*. characterize this imaginary as rooted within anarchist and libertarian traditions, focused on improving local agro-ecological sustainability. Meanwhile, the holistic life philosophy represents permaculture's environmental ethics centred on breaking down barriers of human/nonhuman relations. This imaginary invokes holistic ideals of humans as integrated components of nature and is primarily focused on developing morals of harmony between humans and nature (Roux-Rosier *et al*., 2018). Finally, permaculture as an intersectional social movement represents permaculture's potential for addressing political inequalities and environmental justice with an overarching goal of socio-political transformation (Roux-Rosier *et al.*, 2018). This

imaginary see transforming relationships with nature as one component alongside other intersectional struggles for social justice (Roux-Rosier *et al.*, 2018). Roux-Rosier *et al.*'s framework of permaculture imaginaries offer a helpful means of analyzing different permaculture practitioners' engagement with permaculture. These imaginaries provide a useful way to delineate the many ways permaculture can be implemented and studied to better understand how permaculture can potentially lead to social change. It is important to note Roux-Rosier *et al.* emphasize that while these imaginaries may represent distinct aspects of permaculture, they are interrelated and exist simultaneously.

While these imaginaries have the potential of developing more positive ways of living they "can [also] rearticulate dominant ideological positions even as they attempt to challenge the status quo" (Roux-Rosier *et al.*, 2018, p. 552). For example, Roux-Rosier *et al.* argue that when permaculture is implemented in a way that focuses foremost on technical or philosophical aspects, its practitioners may forego more intersectional interventions as a means of promoting ecological care and being more in tune with nature while avoiding alienating people who may hold different political views. This is not to say that permaculture cannot be applied in intersectional and decolonial contexts, but that there is a need for a closer and more in-depth look at how permaculture theory is being translated into practice, something which has already been called for by some authors looking at the potential of permaculture for social change. Many authors argue that while there has been a heavy emphasis on the natural and built environments related to permaculture, the political component has yet to be explored in depth (see Ferguson & Lovell, 2014; Lockyer & Veteto, 2013; Massicotte & Kelly-Bisson, 2018; Roux-Rosier *et al.*, 2018; Veteto & Lockyer, 2008). Lockyer and Veteto (2013) are particularly adamant about the potential benefits of looking at permaculture design through the lens of political ecology. They argue that political ecology offers a means for permaculturalists to contextualize the politics of their own practices especially for individuals in the Global North. My research goes some way to addressing this gap through a further investigation of how social change is characterized by permaculture design and its practitioners using political ecology literature as means to hypothesize what a more intersectional permaculture may look like.

1.3. Theoretical Framework

Because permaculture design has had a limited engagement with academia, I bring permaculture design into conversation with relevant literatures focused on other alternative food and sustainability movements devoted to social change. My theoretical approach for this research is influenced by authors such as Julie Guthman (2004; 2008) and her work critiquing organic agriculture and its lack of engagement with social justice as well as Val Plumwood (1993) and her work on ecofeminism, the politics of nature and difference, and social change. These and other critiques highlight how mainstream sustainability and environmentalism universalize ethics, politics and values that actually privilege specifically Western, white coded, middle-class understandings of human/nature relationships (Guthman, 2008; Plumwood, 1993). For example, what recreational activities are considered acceptable in parks and other natural spaces, whose voices matter in decision making processes around sustainability and the use of nature, and the types of foods and practices that are considered sustainable or healthy are all defined by and cater to white individuals (Davis, 2019; Finney, 2014; Ramírez, 2015; Slocum, 2007).

This universalized ethic fails to account for people who are not white or middle-class and whose relationships to nature and food are influenced by different cultural norms, economic capacities, and contemporary and historical processes of racialization and colonialism (Alkon, 2008; Kepkiewicz & Dale, 2018; Davis, 2019; Finney, 2014; Lim, 2015; Ramírez, 2015). The trend of privileging and universalizing white, middle-class experiences with nature reflects the broader environmental and sustainability movements in Western society, which have been critiqued for being primarily white and settler colonial spaces, limited by their lack of engagement with Indigenous communities, Black communities, and other communities of colour (see Curnow & Helferty, 2018; Davis, 2019; Finney, 2014; Lee, 2011; Pulido, 2016). Despite the environmental impacts they face, these communities are frequently left out of decision making processes within environmental and sustainability movements (Curnow & Helferty, 2018; Davis, 2019; Finney, 2014; Lee, 2011; Pulido, 2016).

Failing to engage with these intersectional social justice issues leaves environmentally focused food movements rooted in political and market forces driven by capitalist and colonial paradigms. This is especially true of forms of alternative

agriculture such as organic agriculture where white privilege and the encroachment of capitalist market schemes have raised questions about the movement's ability to address social justice issues such as migrant labour and access to affordable and culturally relevant food (Alkon, 2013; Guthman, 2004; Sarmiento, 2017; Slocum, 2007). Excluding the voices and needs of Black, Indigenous, and other marginalized people reduces any movement's potential for social change because the people who are affected the most do not have a say in what that change should look like. Much work has been done critiquing the limited scope of Western sustainability and alternative food movements as well as analyzing the successes of more social justice minded movements. This research includes work on food justice (Alkon, 2008; Alkon and Cadji, 2018; Ramírez, 2015; Slocum, 2007), peasant and Indigenous food sovereignty movements (Cidro *et al.*, 2015; Daigle, 2017; Dekeyser *et al.*, 2018; Grey & Patel, 2015; Kepkiewicz & Dale, 2018; Park *et al.*, 2015), or critiques of Western alternative food (Lim, 2015; Walker, 2016) and environmental movements more generally (Finney, 2014; Haraway, 1992; McGregor, 2018; Pulido, 2015; Singh, 2018). In this thesis I draw on and further elaborate this work in subsequent chapters, where I consider whether these critiques are also applicable to permaculture design, which has largely flown under the radar of critical scholarship (exceptions include: Ferguson and Lovell, 2015; Lockyer and Veteto, 2013; Massicotte & Kelly-Bisson, 2018; Roux-Rosier *et al.*, 2018).

My theoretical framework is built from critiques of 1) Western views of nature and environmentalism and 2) alternative food movements. My aim with this theoretical framework is to set up a means of analyzing permaculture's vision of social change, its influential philosophies, and how it compares to other like-minded and similarly focused food movements. Through this framework I explore the limitations of social change envisioned through a process rooted in universalized and privileged understandings of nature and sustainability in environmentalism and alternative food discourses. These limitations are characterized by a failure to critically engage with dualistic and hierarchal difference at the levels of race, gender, class, and nature, which have been crucial to capitalist and colonial exploitation around the world (Federici, 2004; Mies, 1998; Plumwood, 1993; Wynter, 2003).

Difference has been used to maintain the power and universalized status of Western thought and society. By difference I refer specifically to dualistic and hierarchical understandings of difference. Difference is a core logic of hetero-patriarchal

white supremacy that categorize who and what are deemed exploitable under capitalism (Federici, 2004; Mies, 1998; Plumwood, 1993; Wynter, 2003). Dualisms work by applying a binary form of othering such as human/nature, rational/irrational, and male/female in which one side of the dualism is considered distinct, superior, and separate from the other (Plumwood, 1993). These binaries have been central to Western philosophy for centuries and a basis of Eurocentric ideals of white, heteronormative, and patriarchal exceptionalism (Federici, 2004; Plumwood, 1993; Wynter, 2003). This perspective relies on a normalized and idealized white male subject by which the rest of life is judged, establishing a hierarchy of difference (Plumwood, 1993: Wynter, 2003). Rather than a product of colonialism and capitalism, difference is argued as a critical tool by which colonial and capitalist paradigms were established and continue to function (Federici, 2004; Wynter, 2003). In colonial and capitalist paradigms position anything or anyone that does not meet the ideal of a rational, white, and male human is deemed 'Other' and exploitable because of their difference (Federici, 2004; Plumwood, 1993; Wynter, 2003). Mies (1998) and Plumwood (1993) both argue that racialized, gendered, class, and nature based exploitation are interconnected issues that need to be addressed in coordination. In their analyses, addressing only one of these issues is not enough to stop the violences central to capitalist and colonial logics of domination (Mies, 1998; Plumwood; 1993). Therefore, any attempt to change colonial or capitalist paradigms will need to directly address hierarchical and dualistic difference.

The following two sections address how difference is characterized in environmental and food movements and the associated limitations and critiques of their efforts. In the first section looking at nature and environmentalism, I look at feminist political ecology and posthumanist literatures and their critiques of a universalized depiction of nature in dualistic opposition to humanity, as found in Western society (Davis, 2019; Fraser, 2016; Haraway, 1992; Hustak & Myers, 2012). In this section I also address Western environmentalism, which has been critiqued for its failure to address difference especially with regards to an intersectional framing (Curnow & Helferty, 2018; Finney, 2014; McGregor, 2018; Pulido, 2015; Singh, 2018). In the second section, I focus on literature that evaluates whether different alternative food movements effectively move towards social change in a socially just manner. This section includes critiques of organic agriculture and other sustainability driven alternative food movements (Guthman 2004, 2008; Sarmiento, 2017; Slocum 2007), the differences

associated with more politically driven peasant and Indigenous led food sovereignty movements (Cidro *et al.*, 2015; Daigle, 2017; Dekeyser *et al.*, 2018; Grey & Patel, 2015; Kepkiewicz & Dale, 2018; Park *et al.*, 2015), and the challenges and strengths of food justice driven movements.

1.4. Western Views of Nature and Environmentalism

Nature and nonhuman life under capitalist and colonial frameworks in Western society are positioned as exploitable due to their difference from humans (Haraway, 1992; Plumwood, 1993). Separate and distinct from human society, nature is viewed as both the resource that supports capitalism and a haven to escape from it. Western environmentalism has primarily tasked itself with protecting nature through two main configurations: nature as completely distinct from humans and nature as an extension of, and in perfect continuity with, humanity (Cronon, 1996; Plumwood, 1993). Nature as completely distinct from humans focuses on conservation and leisure seeking to protect nature from humans, while nature in perfect continuity with nature calls for back-to-the-land movements seeking to reconnect humans with nature. While very different perspectives, neither act in direct opposition to capitalist and colonial paradigms nor the racialized and colonial histories of nature in Western society (Davis, 2019; Finney, 2014).

Capitalist, colonial and racialized interpretations of nature are important to understanding how nature is viewed in Western society. Colonial and racialized relationships with nature often rely on a universalized understandings of nature as wilderness, separate and distinct from human society (Cronon, 1996; Finney, 2014). The wilderness paradigm requires a dualistic separation of humans and nature. Based in a desire to create a refuge from Western civilization, wilderness narratives construct nature as pristine and devoid of all human influence (Cronon, 1996). This dualism positions the protection of nature “as a crude conflict between the ‘human’ and the ‘nonhuman’” (Cronon, 1996, p. 20) where nature is safest when humans interfere with it the least. With places like the African Serengeti that are seeing declines in biodiversity, it presumed that the declines are because of the encroachment of humans into these wilderness spaces (Robbins, 2012). Humans themselves are seen as the problem rather than the specific humans and their political economies that have led to changing land use practices around the world (Robbins, 2012). Issues related to the environment with

regards to social justice become secondary as addressing politically charged issues related to capitalism and colonialism, are seen as less important as more apolitical issues such as biodiversity loss and habitat destruction (Cronon, 1996; Robbins, 2012). Cronon (1996) and Finney (2014) argue that the wilderness narrative and Western environmentalism serve as a denial of the colonial and racialized histories of North America, erasing all other relationships and history. This erasure of other histories and relationships positions wilderness as a universalized understanding of nature, centring primarily white middle-class perspectives (Cronon, 1996; Finney, 2014). A universalization of a primarily white experience with nature creates a singular view of what nature is and how it should be protected (Finney, 2014). From this perspective, nature can be a place of recreation and leisure away from the perils of civilization, a place to be visited, but certainly not a place to live or make a living (Cronon 1996; Davis 2019; Finney, 2014).

Relationships with nature related to economic and political realms are foregrounded in order to pursue ethics of conservation and environmental protection. Davis (2019, p. 95) is particularly critical of the tendency to constitute wilderness as a white space "because it symbolizes the conquering of and one's separation from fallen nature." Nature is a place to be conquered through recreational tests of endurance and survival (Davis, 2019). Relationships with nature that actually support people's survival and livelihoods are disregarded as they are activities attributed to a racialized Other that does not fit into civil society. This process is achieved through "a constellation of institutions, coalitions, social relations, rules, and policies that dictate who is considered a political agent, what political interests matter, and the relationship between the state and society" (Davis, 2019, p. 95-96). Concepts like biodiversity and endangered species reinforce wilderness ideals of protecting nature by keeping humans out of it at a legal level (Cronon, 1996; Davis, 2019). Ideals of pristine nature are protected for the leisure of a "white elitist outdoor culture" which exclude those who rely on nature for their livelihoods (Davis, 2019, p. 103). This is not to imply that nature should not be protected, but that positioning humans outside of, and in direct opposition to, nature prevents a more critical exploration of what human-nature relationships looks like outside of a white privileged perspective (Cronon, 1996; Davis, 2019; Finney, 2014).

Val Plumwood argues that it is the hyperseparation as well as a dualistic positioning of humans in opposition to nature that is the issue. Plumwood (1993, p. 160)

argues that human relationships with nature "must be able to recognise both the otherness of nature and its continuity to the human self." This perspective neither denies the difference that exists between humans and the rest of nature or humans connectivity with nature. Humans are viewed as both different from, and related to, nature. In Plumwood's critique of dualisms, she is particularly critical of the nature/culture dualism that positions humanity in opposition to nature. Plumwood argues that any movement seeking to address issues of difference need to account for nature. In this respect, she is also critical of environmental philosophies that do not properly engage with difference, as represented by her critique of deep ecology.

Deep ecology is focused on a critique of anthropocentric, or human dominant, relationships with nature found in society (Plumwood, 1993). In order to solve this problem, deep ecology calls for transformation at the level of the individual that allows for identification within and in perfect continuity with nature (Plumwood, 1993). Plumwood argues that this not only fails to engage with political and social issues that go beyond individual relationships with nature, but that it also denies the difference that exists between humans and nature. Deep ecology assimilates nature into the realm of the human, denying the difference and otherness of nature (Plumwood, 1993). Deep ecology presents an apolitical approach to environmentalism where humans' metaphysical continuity with nature is all that is focused on, rather than political action and social change (Battistoni, 2017; Plumwood, 1993).

An example of a more political accounting for nature in human society comes from Alyssa Battistoni (2017, p. 6) and her argument for an acknowledgment of 'hybrid labor' between humans and nonhumans. She argues that hybrid labor "understands the 'work of nature' as a collective, distributed undertaking of human and nonhumans acting to reproduce, regenerate, and renew a common world." Through hybrid labour Battistoni attempts to bring agency to nonhuman work that is missing from how nature is viewed under capitalism. By acknowledging nature's agency, Battistoni's overarching goal is to bring the nonhuman into political and economic spheres without reducing it to resources and open up the discussion of what responsibilities humans have to nonhumans and the labour they produce.

While the work of Plumwood and Battistoni provide important insight into human-nonhuman relationships, there have been concerns that there has not been a large

enough focus on issues of race and colonialism within in discussions of human/nature relationships (see Deckha, 2012; Hawkins *et al.*, 2011; Sundberg, 2014; Todd, 2016). Todd (2016) and Sundberg (2014) both argue that theories on how nature and culture are interrelated are nothing new in worldviews and societies outside of Western ideological paradigms. Daigle's (2016) account of the Omuskegowuk Cree law of *awawanenitakik* that places the importance on reaffirming Indigenous relations to localized land and kin as a means of cultural and political resurgence and Indigenous self-determination is one of many examples of the importance of human-nonhuman relations outside of a Western framework. By failing to acknowledge the many views of human-nonhuman relationships that exist outside of Western ideals, Western theories are in danger of recentring universalized ideals of Western thought steeped in racialized and colonial logics of superiority, however unintentionally that may be (Sundberg, 2014; Todd, 2016). Scholars have called for a more intersectional analysis when it comes to human-nonhuman relations that account for race, class, and other politics of difference, when analyzing the power dynamics at play within environmental discourses (Deckha, 2012; Hawkins *et al.*, 2011; Sundberg, 2014; Todd, 2016).

1.5. Alternative Food Movements

Starting with a history of the organic food movement in California, this section looks at how politics of difference are addressed across alternative food paradigms. Considering the perceptions of nature in Western society and its representation in industrial food paradigms, alternative food systems present an attractive means of resituating humans in relation to nature. Movements focused on organic and local food, food sovereignty, and food justice all have different ethical and political drives that define who engages with these movements and how social change is envisioned. Difference in relation to race, gender, class, and nature are addressed differently by these movements, especially with regards to the disparities that exist in the access and control over food and its production. The tendency to universalize a white and privileged perspective in alternative food, while well-intentioned in its outset, can create a greenwashed version of the status quo that overlooks politics of difference in favour of apolitical sustainability ethics.

In her analysis of organic food in California, Julie Guthman (2004) writes about how an alternative food movement influenced by 20th century environmentalism and

counterculture became a part of the same industrial food paradigm to which it was originally opposed. The organic food movement largely came about from a desire to promote more soil building processes based on complex natural ecosystems that countered the “domination of nature for production and profit” found in industrial agriculture (Guthman, 2004, p. 4). Organic agriculture was in direct opposition to the standardized and input focused industrial farming techniques, looking towards ideas of bioregionalism, collective ownership, and local food networks as wells as critiques of big science and its connection to industrial agriculture (Guthman, 2004). In 1960 and 70s California, this movement found its roots in counterculture urbanites growing food on marginal land, seeking healthy food alternatives to the highly-processed and input dependent industrial food system (Guthman, 2004). Food shortages, population growth, and oil crises of the time also played a part in shaping the movement as a means towards sustainable development and an insurance for future generations amidst potential scarcity (Guthman, 2004).

While organic agriculture had a more radical leaning in its origins, Guthman (2004, p.3) argues that “there has always been a tension between those who see organic agriculture as simply a more ecologically benign approach to farming and those who seek a radical alternative to a hegemonic food systems.” Alongside the counterculture vision of organic agriculture, Guthman identifies an agrarian, family owned vision of organic food production that maintains its connection to private property and free-market capitalism. Rather than an investigation of the larger social and political issues that exist within industrial food systems, this agrarian vision sees the family farm as the “key to social justice and ecological sustainability” (p. 10). Guthman identifies Lockean views of ownership and labour in the stewardship of this agrarian vision, where the work done by the family-owned farm relates to a closer relationship to the land, stating that: “only owners, it is presumed, have interest in the long-term viability of the land” (p. 11). This family oriented agrarianism exists as a strict defence of private property regimes, individualism, and free-markets. A family-farm led social movement, rooted in conservative values of property and labour, does not provide the strongest base for social change. As Guthman demonstrates, this owner focused social movement was limited by its dependence on markets, which later influenced how organic agriculture would develop as it found more mainstream interest and acceptance.

An attachment to mainstream environmental and sustainability issues and the development of certification agencies in the 1980s played an influential role in the shift from organics as a counterculture movement in the 1960s and 70s to a major industry of the 21st century (Guthman, 2004). Organic agriculture gained a sense of legitimacy when it became associated with more mainstream critiques of industrial agricultures effects on the environment (Guthman, 2004). The increased interest in organic food by mainstream consumers also led to an increased interest on the part of conventional growers who had previously dismissed organic agriculture as utopian and costly (Guthman, 2004). Guthman argues that these two points led to a shift of focus towards growing standards and institutional legitimacy rooted in science and regulations over more social transformative, and less consumer friendly, political action and growing practices. What allowed for this shift was a movement driven primarily by growers associations who were more concerned with market access than the "ecological, economic, and social concerns that reach beyond the farm gate" (Guthman, 2004, p. 117).

This shift was largely due to the influence of larger conventional growers transitioning to organic because of the higher prices associated with organic food (Guthman, 2004). The larger size and influence of these conventional growers caused a watering down of how organic agriculture was being practiced and regulated. These larger growers had a vested interest in keeping the status quo as reforms to farm scale and labour standards were seen as costly (Guthman, 2004). Focus shifted towards accessible and quantifiable standards that could be measured objectively in a lab (Guthman, 2004). Measurable standards were also more easily verifiable and enforced, making a business out of the certification process itself. This led to a further watering down of standards as certification businesses could allow for products and techniques that would never have been excepted as organic decades prior (Guthman, 2004). Ultimately this led to a shift away from the counterculture processes and philosophies that defined California's organic movement in its early years, with federal and state standards later becoming the de facto voice of what is organic and what is not.

Guthman makes it clear that her description of organic agriculture in California does not give an understanding of the global organic movement as a whole. Instead, she provides an example of how quickly a socially motivated practice can transform into a market driven affair. With a movement driven by growers and certification industries, she states that "the implicit goal was to institutionalize a price premium for organic crops"

(Guthman, 2004, p. 140). Growers were incentivised to dismiss conventional agriculture's social and political issues in order to capitalize on a white middle-class desire to buy more environmentally friendly food (Guthman, 2004). While Guthman is adamant that organically grown food is a better alternative than industrial food paradigms when it comes to the exposure of toxic inputs to those working on farms as well as the surrounding landscapes and communities, she also argues that many of the structural inequalities found in industrial food paradigms have not been addressed by organic agriculture and still exist within alternative food regimes. In this respect, organic agriculture exists as an alternative rather than a replacement or direct counter to industrial agriculture (Guthman, 2004). Having alternative food movements as strictly an alternative means that individuals can participate without directly engaging with, or opposing, the inequalities and injustices that exist within industrial food paradigms. Critiques of alternative agriculture focus on the movement's racialized understanding of human/nonhuman relationships underpinned by universalized ideals and colour-blind understandings of healthy food, sustainable living, and farm labour (Alkon 2008; Guthman, 2008; Slocum, 2007).

Alternative food has been coded as white, focused on ideals of community, local, healthy, organic 'good food', and bringing people closer to nature rather than a more critical look at the present and historical inequalities of food systems (Alkon, 2008; Guthman, 2008; Slocum, 2007). Guthman (2008) argues that this vision of alternative food is driven by a combination of colour-blindness and universalism. Colour-blindness in alternative food is the avoidance of race related issues and the refusal to acknowledge racialized difference while universalism is "the assumption that values held primarily by whites are normal and widely shared" (Guthman, 2008, p. 391). Alternative food becomes romanticized in ideals of agrarianism and sustainability that are considered universally good and mask the privilege and whiteness that exists within these spaces.

Rachel Slocum (2007) argues that while alternative food spaces may not exhibit overtly racist or exclusionary practices, the middle-class 'white imaginary' that permeates many alternative food spaces entrenches privilege and difference. Examples such as the high cost associated with organic food, the limited selection of ethnically relevant food, and white-coded values of clean and calm market spaces are major barriers to marginalized people engaging in alternative agricultural practices resulting in

these spaces being codified as exclusively white and privileged. Alternative food systems are typified by spaces such as organized farmers' markets where the middle-class can purchase food that meets a narrow definition of what is considered healthy and sustainable (Guthman, 2008). While the ideals of sustainability found in organic agriculture are not inherently white, the overall focus on values of health and sustainability, while overlooking the needs of racialized communities for affordable and culturally relevant food, contribute to alternative food being a white space (Guthman, 2008; Slocum, 2007). As Slocum (2007) argues, alternative food practices are more than sustainable farming techniques and include a range of political and social relations.

By imposing a universal and apolitical vision of sustainable food, difference is erased through a refusal "to acknowledge the experience, aesthetics, and ideals of others" (Guthman, 2008, p. 391). Those who do not understand or agree with these universalized ethics simply do not know enough about the benefits of alternative food production and "it is assumed that those for whom they do not resonate must be educated to these ideals or be forever marked as different" (Guthman, 2008, p. 391). Sustainability as articulated in alternative food narratives becomes a privileged worldview, where the practice itself becomes exclusive to those who can afford it. An example of this process is demonstrated by Guthman (2008) in her description of the idea of "paying the full cost" for organic food. Guthman explains that when people call for "paying the full cost," they are referring to the increased labour required on the part of the farmer to grow organically and the lack of subsides typically paid to conventional industrial agriculture. These points are supposed to justify the high cost of organic food and silence discussions centred on inequality or affordability. Guthman argues that not only does this rhetoric fail to acknowledge the labour practices reliant on racialized and migrant labour employed on many organic farms, it applies logics of colour-blindness that fail to acknowledge the historical processes of racialization, inequality, and difference that have created and supported current agricultural paradigms. Colour-blindness and whiteness act together as a means of disregarding the needs and concerns of racialized communities in relation to social inequality and the racialized bodies that exist in these alternative agricultural practices (Guthman, 2008; Slocum, 2007).

Much like how Guthman (2004) is adamant about the positives of organic food, Slocum (2007) highlights that despite the overwhelming prevalence of whiteness in

alternative food, there also exists a great potential for transformative change. She points to the many aspects of alternative food, including “supporting farmers, preserving farmland, improving the welfare of nonhuman life and helping people get better food in their lives” (Slocum, 2007, p. 528) as examples of whiteness ‘doing good’ and demonstrate openings for further counter-hegemonic work. Slocum is particularly focused on how alternative food already engages with difference in relation to nonhuman life, seeking more ethical relationships. Nevertheless, the apolitical nature of white coded alternative food movements exclude those who are racialized or do not subscribe to these it values, denying the centuries of racism and exclusion exist at the core of food systems in North America. The theft of Indigenous lands, the enslavement and forced labour of people of African descent, and the exclusion and mistreatment of Asian and migrant workers highlight very different relationships with food systems than those brought up by white alternative food movements (Guthman, 2008).

Indigenous and peasant food sovereignty movements demonstrate what more political food movements look like. Food sovereignty largely exists as a push back against the effects of import-export driven industrial agriculture that has had major effects on the economic, health, and environmental wellbeing of rural and Indigenous communities, particularly in the Global South (Martínez-Torres & Rosset, 2010). Food sovereignty was popularised by La Vía Campesina, a transnational group with its origins in Latin America, in the 1990s in response to this growing threat of neoliberal free-trade pushed by the newly formed World Trade Organization (WTO) (Martínez-Torres & Rosset, 2010). Food sovereignty, as defined by La Vía Campesina, “is the peoples’, countries’ or state unions’ right to define their agricultural and food policy, without any dumping vis-à-vis third countries” (La Vía Campesina, 2003). A critique of neoliberalism is central to the definition of food sovereignty as it challenges the ability of the WTO as well as other organizations and countries to impose neoliberal free-trade polices (Martínez-Torres & Rosset, 2010; Patel, 2005).

The study of Indigenous food sovereignty differs from other discussions of food sovereignty because of its emphasis on decolonization through the resurgence of cultural practices tied to traditional food systems (Cidro *et al.,* 2015; Grey and Patel, 2015). Recent publications have shown an emphasis on culturally specific depictions of Indigenous food sovereignty which are grounded in local Indigenous worldviews and traditional practices (Daigle, 2017; Kamal *et al.*, 2015). Daigle (2017) and Kamal *et al.*’s

(2015) demonstrate a clear political drive in Indigenous food sovereignty with their work on Anishinaabe and *O-Pipon-Na-Piwin* Cree food sovereignty respectively. Central to these case studies are struggles against the ongoing dispossession of traditional lands by capitalist and colonial development. Interpretations of land and sovereignty are particularly prominent, where the idea of sovereignty is related more to responsibility than ownership (Daigle, 2017). In these cases, cultural resurgence is seen as a way to provide Indigenous people with a means of practicing their traditional culture, providing alternative livelihoods, and opposing paradigms of neoliberal capitalism and settler colonialism. Cultural and political practices are considered inseparable from the practice of traditional food systems (Cidro *et al.,* 2015; Daigle, 2017).

As interest in food sovereignty research grows, there are concerns that the overall critique of neoliberal capitalism central to food sovereignty is being lost in favour of localized issues of sustainability and food security, especially in the Global North (Dekeyser *et al.*, 2018; Navin & Dieterle, 2018). In the Global North food sovereignty typically invokes ideals of localized sustainability and healthy food, with discussions of capitalism and colonialism being supplemental rather than central (Demarais & Wittman, 2014). An example of this is observable in Powell & Wittman's (2018) study on food sovereignty in relation to school food initiatives in British Columbia. Powell & Wittman's analysis focused on the local ecological, healthy food, and community engagement benefits farm to school initiatives provide. While there was mention of Indigenous and Global South engagement with food sovereignty, it was in passing and did not include a serious look at Indigenous peoples' struggles for livelihood and self-determination. In another example form British Columbia, Wittman *et al.* (2017) provide a more nuanced analysis of cooperative farmland initiatives and their ability to engage with neoliberal structures of land exploitation, but similarly lack a clear engagement with ongoing struggles for Indigenous food sovereignty. These examples demonstrate that despite food sovereignty's more political leanings compared to other alternative food paradigms, it is also susceptible to depoliticization when applied outside the contexts of peasant and Indigenous struggles (Dekeyser *et al.*, 2018; Kepkiewicz & Dale, 2018). Dekeyser *et al.* (2018) attribute this trend to a lack of conceptual clarity when it comes to defining food sovereignty. While this has let the movement be more adaptable and applicable beyond its initial rural and agrarian focus, it has also led to different interpretations and an overall weakening of its transformative potential (Dekeyser *et al.*, 2018).

Food justice movements have done much to address the social inequalities more mainstream alternative food movements have failed to address. In Alkon's (2008) comparison of two urban farmers' markets in San Francisco she found that the market located in a predominantly Black and low-income neighbourhood was considerably more focused on social justice and inequality than its counter-part in a white and more affluent neighbourhood. Influenced by an environmental justice framework, civil rights and food security are at the forefront of activism, rather than romanticised ideals of wilderness and sustainability (Alkon, 2008). That being said, food justice movements and organization still face challenges in relation to whiteness in alternative food. Even though food justice movements are focused on issues of race, the alternative food paradigms food justice works in is still largely a white space (Alkon & Cadji, 2018). By implementing food justice programs such as support for Black urban farmers and community food programs, food justice organizations can inadvertently attract young, white, and middle-class individuals who identify with the aesthetics of local alternative food (Alkon & Cadji, 2018). These processes can lead to gentrification in communities that are already struggling and impede on the work being done by activists and food justice organizations (Alkon & Cadji, 2018; Ramírez, 2015). Ramírez (2015) is especially critical of white activists and outreach organizations that do not engage with the power and privilege they hold in alternative food work. She argues that for white activists seeking to make a difference in anti-racist politics, they need to "reevaluate their efforts, consider how they may be exuding a possessive investment in whiteness, and seek out projects led by the marginalized respectfully and with humility" (Ramírez, 2015, p. 766).

Like the environmental and sustainability movements that influence them, alternative food movements have struggled with the universalization and privileging of a white middle-class relationship with food. Alternative food has therefore been characterized as a white space where healthy and sustainable living are valued above addressing racialized social inequalities and acting on the colonial and racialized histories that have shaped conventional agriculture practices, and modern ecological crises. Western alternative food movements lack engagement with the political and philosophical tools needed to address the interrelated issues of ecological destruction, capitalism, and colonialism. Because of how pervasive whiteness is in alternative food, it is not enough to want to do good. There needs to be a conscious move by white food activists and consumers to take up space differently in ways that support marginalized

voices rather than push them out. The research covered in this literature review provides important points of analysis for this thesis. Tendencies to universalize environmental ethics or seek apolitical means of sustainability within the writings of Mollison and Holmgren could provide insight as to why permaculture has been shown to be made up of predominantly white and middle-class practitioners (see Ferguson & Lovell, 2015; Massicotte & Kelly-Bisson, 2018). As articulated within this section, universalized and apolitical action tends to focus on issues of sustainability over inequality. If Mollison and Holmgren were to employ a similar focus, similar limitations would be expected for how permaculture is envisioned as social change.

1.6. Research Methods

The two methods I have used for this research are textual analysis and semi-structured interviews focused on analyzing how social change is articulated in permaculture texts and by permaculturalists. Through this analysis, I sought to gain a better understanding of how permaculture and its practitioners envision social change with particular focus on the environmental and social justice narratives employed in these visions. In line with my theoretical framework, I aim to understand if and how the practice of permaculture addresses social issues (such as social and racialized inequalities, colonialism, and privilege) that go beyond the typical Western environmentalism applied in other alternative food movements. Analysis of permaculture texts and related material were an important first step for setting up lines of inquiry that were later used in interviews. The semi-structured interviews were important as they provided a means of developing a more direct understanding of how people interpret and apply permaculture theory in relation to social change.

It is important to acknowledge that I am a graduate student acting within the framework of an academic institution studying a subject that has not had a particularly well-established relationship with academia. I am also bringing in theory and material not typically used in permaculture theory, which has the potential of being seen as overtly critical of the discipline. At the same time, I have completed a Permaculture Design Course myself and view the practice positively and as something I would like to continue engaging in myself. I aim to situate my exploration of permaculture and those who practice it in a similar fashion to those looking at other alternative food practices, such as organic food and farmers markets, and the potential of those practices to be locations of

both social transformation and social privilege (Alkon, 2013; Sarmiento, 2017; Slocum, 2007). My intention is to keep my research as a balanced exploration of permaculture that allows for a thoughtful critique without alienating the people I am engaging with in my research. While I aim to conduct my research as an open-ended exploration of how permaculture is being applied, I do have to acknowledge that I will be going in with question of the discipline that could be seen as atypical and potentially negative by permaculture practitioners. I wish to avoid the perception of my research demonstrating a definitive understanding of permaculture and those who practice it as a whole. In order to avoid claiming such a broad definition of permaculture, I present my research as one situated interpretation of permaculture and the views of specific people in a specific time and place.

1.6.1. Textual Analysis

Textual analysis was used on four path-setting permaculture texts (Table 1.2) written by David Holmgren and Bill Mollison, the originators of the concept of permaculture design. These texts were chosen because of their relevance as foundational to the concept of permaculture design and their prominence in permaculture literature. My analysis consisted of a close, inductive analysis of these books, noting how permaculture was being defined, its primary influences and philosophies, what social issues were being focused on, the methods being proposed to enact permaculture's vision of social change, and what the overarching objective of this social change is. The goal of the textual analysis was to gain an understanding of how permaculture is presented, particularly with regards to themes of political and social transformation. Influenced by my theoretical framework, I was looking for themes of difference and counter-hegemonic discourses as well as universalism, individualism, and colour-blindness in permaculture's vision of social change. I also analyzed interpretations of nature and culture that reinforced or subverted capitalist and colonial orderings of exploitation and difference.

Table 1.2 Permaculture texts used for textual analysis

Author	Tittle	Original Date of Publication
Bill Mollison and David Holmgren	Permaculture one: A perennial agriculture for human settlements.	1978
Bill Mollison	Permaculture II: Practical design and further theory in permanent agriculture.	1979
Bill Mollison	Permaculture: A designer's manual.	1988
David Holmgren	Permaculture: Principles & pathways beyond sustainability.	2002

1.6.2. Interviews

Five semi-structured interviews were conducted with research participants situated around Vancouver Island, BC between February and May 2020. Interviewees were determined initially through web searches with some participants determined through the suggestions of previous interviewees. All interviewees had some familiarity with permaculture design acquired through taking a permaculture design course, being self-taught, or being heavily involved in a permaculture community. Interviewees' backgrounds included: farmers, homesteaders, instructors, academics, and professionals. Interviews were conducted by phone or Zoom, a video conferencing program, depending on the preference of the interviewee. Interviews ranged between 30 minutes and an hour. All interviews were audio recorded, with the consent of the participant, for later transcribing. These transcriptions were non-coded, used as a means of having something to refer back to and allow for a more dynamic interview process on my part, as well as allow for interviewees the opportunity to review, add, or emend their responses. Interview questions (see Appendix) were created as a result of the textual analysis work as well as questions derived from my research's theoretical framework. These questions focused primarily on how permaculturalists view their practice and its influence on their interpretations of, and relationships with, the idea of social change. The focus of the interviews was to develop an understanding of how permaculture theory is actualized by individual permaculture practitioners as well as if, and how, permaculture practitioners see that practice as being socially transformative.

1.7. Focus and Organization of Thesis

In this thesis I discuss three main questions: what is permaculture's vision of social change? What sets permaculture apart from other Western sustainability and alternative food practices in relation to social change? Who is permaculture's vision of social change for? Chapters 2 and 3 seek to answer those three research questions and have been organized around two of the main ethical principles of permaculture design, Care for Earth and Care of People, respectively. In these two chapters I compare and contrast the prominent vision of social change put forth in some of permaculture's foundational texts to literature critical of similarly focused environmental and alternative food movements. The information gathered through the interviews I conducted are used throughout the thesis to contextualize how permaculture principles are interpreted and translated into practice as well as reflections on permaculture's capacity for social change. The goal of this investigation is not to discredit permaculture design, or to suggest that the vision of social change I am describing is universal among permaculturalists. My goal is to develop a better understanding of the relations of challenges faced implementing social change across a broad range of food movements and how lessons and critiques from other food movements apply to permaculture as well.

Chapter 2 takes shape around the permaculture principle of caring for the Earth. The core of this chapter is focused on establishing permaculture's vision of social change as a sustainability driven design practice. In this chapter I investigate permaculture design's environmental ethic and its connections with Western environmentalism more broadly. I begin by looking at some of the key inspirations for permaculture design, which were heavily influenced by the environmentalism of the 1970s and 80s, primarily peak oil narratives and the Gaia hypothesis, as well as various Indigenous and traditional agricultural practices from around the world. Establishing where permaculture's vision of social change is coming from provides a better understanding of who exactly benefits from this vision and who may be left out. The influence of peak oil in particular positions Mollison and Holmgren's vision of social change as one that is heavily rooted in scarcity politics. My analysis focuses on the limitations and challenges associated with how Mollison and Holmgren's focus on scarcity politics situate permaculture as a means of preparing for future societal collapse

associated with depleting energy supplies rather than addressing the socio-politics of fossil fuels and environmental justice in the present.

Chapter 3 uses Chapter 2's investigation of permaculture's vision of social change and compares it to other forms of alternative food movements and the critiques that have arisen surrounding those movements. Responding to the permaculture ethic of caring for people, this chapter is focused on an investigation of the scale of action commonly employed by permaculture design. Who is the target of permaculture's vision of social change and how is that vision supposed to be carried out? I identify within the writings of Mollison and Holmgren an intentional focus on apolitical, individualized, and middle-class actors as their preferred scale of change within permaculture design. These tendencies mirror critiques found in literature on organic food, farmers' markets, and community-supported agriculture (Alkon, 2008; Guthman, 2008; Ramírez, 2015) and are associated with universalized ideals of what alternative food should look like. These universalized ideals have been argued as indicative of individualized, middle-class white privilege and a failure to engage with the racialized histories of food systems (Alkon, 2008; Guthman, 2008; Lim, 2015; Ramírez, 2015; Slocum, 2007). As exemplified with permaculture design courses, the primary means of learning permaculture, this scale of change is easily adapted into conventional neoliberal, market based society (Massicotte & Kelly-Bisson, 2018) limiting the scope of permaculture's ability to achieve social change.

In the conclusion of this thesis I reflect on the challenges and strengths presented by permaculture towards radical social change. Included here is a discussion of the lessons to be learned from more politically driven food justice (Alkon & Cadji, 2018; Ramírez, 2015) and food sovereignty movements (Dekeyser *et al.*, 2018; Kepkiewicz and Dale, 2018; Martínez-Torres and Rosset, 2010; Patel, 2005). From this discussion I contextualize the critiques of permaculture I developed throughout this thesis in order to develop a better idea of what a more socially transformative permaculture looks like.

Chapter 2.

Social Change Through Earth Care? Permaculture's Ethic of "Care for the Earth"

At the forefront of permaculture design's vision of social change is an environmental ethic of caring for and supporting the various lifeforms that exist on the planet. The first time this ethic is directly described is in *Permaculture: A Designer's Manual*, by Bill Mollison (1988) where he positions Earth care as the core of permaculture's focus, suggesting that the other two ethical principles of caring for people and limiting growth arise from a need for a stronger environmental ethic. As I will discuss shortly, while the specifics of permaculture's environmental ethic have changed since its inception, at its core permaculture has always been about correcting a supposed rift that exists in industrial society between humans and the limits of the ecologies they live in (Mollison & Holmgren, 1978). Permaculture's environmental ethic, simply called "Care for the Earth," is focused on redefining human-nature relations to better account for these limits. Permaculture's ethic of Earth care was first formalized by Mollison (1988, p. 2) as a "[provision] for all life systems to continue and multiply." While Holmgren ([2002] 2011, p. 5) still includes a general caring for and promotion of biodiversity in his definition of Earth care, he provides a more simplified focus of "caring for living soil as the source of (terrestrial) life and for which we have the greatest responsibility." The shift of focus to caring for soil moves away from the very broad definition of Earth care given by Mollison to one that is more in line with permaculture's purpose of sustainable agriculture. By building and maintaining healthy soil through permaculture, people can help save the planet.

My analysis in this chapter is focused on identifying the key motivations behind permaculture's environmental ethic of Earth care, the assumptions Mollison and Holmgren make in defining permaculture's vision of social change, and what these motivations and assumptions mean for permaculture in the present. Based on an inductive analysis of early permaculture texts, I have identified three key themes that have shaped permaculture's environmental ethic: fossil fuel scarcity and peak oil, the Gaia hypothesis, and Indigenous land practices. These three influences lay the foundation for permaculture's Earth care, as defined by the practice's co-creators Bill

Mollison and David Holmgren, in direct opposition to high energy modern society. Mollison and Holmgren make explicit references to these topics when discussing permaculture and its environmental ethic by positioning rampant energy use and an overall disconnect from the limits of nature as primary drivers of the issues found in modern society. The emphasis Mollison and Holmgren put on these topics make them good points of analysis for understanding where their vision of social change is coming from and who may be included in this vision.

Permaculture has been centrally motivated by concerns around fossil fuels and the negative environmental effects of high energy society and also includes a strong philosophical focus centering humans' need to rethink how they relate to nature. *Permaculture One* and *II,* the first two formal books on permaculture, outline permaculture's design practices and concepts, species lists, and other technical considerations. The books advance an environmental ethic oriented around a general need for less destructive, low-energy ways of living. Authors Mollison and Holmgren dedicate a large portion of these first two books on energy dynamics, citing the work of authors such as H. T. Odum and K. Watt who worked on energy flows in ecosystems (Mollison & Holmgren, 1978; Mollison, 1979). This fixation on energy comes from fears over the perceived dangers of high energy society, which during the 1970s was being threatened by fossil fuel supply shortages (Mollison & Holmgren, 1978; Mollison, 1979). Mollison and Holmgren write that only a low energy form of agriculture such as permaculture "will escape modern agricultures' fate of slow degeneration, or total collapse, as non-renewable resources run out" (Mollison & Holmgren, 1978, p. 4). Fear of the negative effects a full blown fossil fuel shortage could have for industrial society was the primary driver of this early environmental ethic. Does the prominence of energy scarcity as a driver of permaculture's vision of the future influence how permaculture enacts social change? This is one of the key questions I address in this chapter.

Another influential concept to permaculture's environmental ethic is the Gaia hypothesis, whose influence can be seen directly in how Mollison and Holmgren define permaculture. Mollison describes the Gaia hypothesis as a link between scientific and traditional spiritual beliefs of the Earth, which views the Earth as a "self-regulating, self-constructed, and reactive system, creating and preserving the conditions that make life possible, and actively adjusting to regulate disturbances" (Mollison, 1988, p. 2). Mollison (1988) and Holmgren ([2002] 2011) also put forward many other philosophies as

inspiration for permaculture's environmental ethic including Taoism, Buddhism, various Indigenous traditions and the work of environmentalists such as Wendell Berry and Aldo Leopold. Indigenous traditions, primarily those from Tasmania where Mollison and Holmgren first developed permaculture, where especially influential for permaculture's early development. The common theme that Mollison and Holmgren focus on from these philosophies are ideals of the importance and interconnectedness of all life on Earth. Permaculture's Earth care is supposed to go beyond the realm of human needs to address the many human-caused environmental issues that exist in the present day (Holmgren, [2002] 2011; Mollison, 1988).

Permaculture proposes radical change in how we relate to nature from the perspective of Western society, but can potentially miss the mark when it comes to addressing broader inequalities that fall beyond the scope of strictly environmental issues (Roux-Rosier *et al.*, 2018). As Roux-Rosier *et al.* (2018) articulate in their three imaginaries of permaculture design (a set of practices, a life philosophy, and a social movement), the social movement side of permaculture, which looks at environmental justice and political inequalities, at times falls out of focus. To shine a light on this more shadowy aspect of permaculture and its influences, I consider how permaculture frames the problem and solutions. Specifically, I consider how peak oil, Indigenous land practices and the Gaia hypothesis are interpreted and applied in Mollison and Holmgren's writings. My analysis of these three themes draws on insights from eco-feminist, Indigenous, and political ecology scholars who have deconstructed the assumptions and implications present in these imaginaries. Based on insights from these readings and my reading of Mollison and Holmgren, I argue that there is a tension in permaculture design as a practice that seeks to enact transformative social change in creative and counter-hegemonic ways and do so for 'everyone,' while still being firmly rooted in Western thought and society. My goal is to get a better idea of who is included in permaculture's notion of 'everyone' and what this means for permaculture's vision of social change.

2.1. Peak Oil

One of permaculture's original drivers was a desire to curb ecological destruction associated with high energy society and agriculture practices (Mollison & Holmgren, 1978). Fossil fuels in particular are positioned as a major cause of modern

environmental crises where the energy surplus produced by burning fossil fuels has allowed for industrial society to live uncoupled from the limits of natural ecologies, limits to which humanity will soon catch up as fossil fuel reserves deplete (Holmgren, [2002] 2011). The expectation of an impending collapse of high energy society is central to the original foundation of permaculture – so much so that the majority of the first two books on permaculture are focused on discussing the techniques and plant varieties that reduce energy expenditure in agriculture (Mollison & Holmgren, 1978; Mollison, 1979). By centering its focus on energy usage, permaculture becomes defined as a system for creating self-reliant and low energy agriculture systems in direct opposition to industrial agriculture's reliance on fossil fuels rather than a system that confronts hegemonic socio-political structures like capitalism or colonialism.

Holmgren ([2002] 2011, p. xxx) takes this focus on energy further by positioning permaculture as the means of a stable "energy descent." Holmgren characterizes energy descent as an upcoming period when fossil fuels will no longer be available in a quantity to support industrial society. During this period, permaculture is positioned as the process for transitioning towards a more stable and sustainable society. Mollison (1979, p. 3) goes as far to state that "[without] permanent agriculture there is no possibility of a stable social order." This is a sentiment that is still expressed in permaculture design as can be seen by Randall (2013, p. 147) who writes on the need for permaculture: "modern life is based on ever-depleting fossil fuels, ecosystem collapse, and climate-destroying emissions, so all people on the planet need to urgently redesign their food, housing, transportation, and other systems before life becomes impossible." While peak oil and energy descent were not topics directly referenced in my interviews, there was an underlying sense that permaculture provides the tools for building resiliency in the face of uncertain futures, whether that be in relation to climate change, infrastructure collapse, or other major shifts in society. The theme of preparing for change invokes ideas prominent in peak oil discourse outside of the realm of permaculture, which are relevant perspectives to understanding permaculture's own vision of social change.

At its simplest, peak oil represents a potential 'peak' in maximum oil production that would mark the end of cheap oil due to the depletion of easily accessible and exploitable oil reserves (Bridge, 2011; Schneider-Mayerson, 2013). A more complex view of peak oil sees it tapping into fears over an "energy crisis" that could spell the end of capitalist society, which have been ongoing since a rapid rise of oil prices in the 1970s

(Bridge, 2011). These fears stem from the centrality of oil in the development of modern society and the functioning of capitalism as a whole (Bridge, 2011). Fossil fuels are seen as so central to the functioning of capital that some individuals see peak oil as an event that “will cause an imminent social collapse” (Schneider-Mayerson, 2013, p. 866). Schneider-Mayerson (2013) refers to these believers as “peakists”. Typically left-leaning, white, and upper middle-class men, peakists believe that peak oil is “an imminent, transformative event that will put an end to American imperialism and capitalism and deliver a superior, more environmentally balanced post-apocalyptic future” (Schneider-Mayerson, 2013, p. 867). While peakists are generally very aware and concerned with climate change and other environmental issues, Schneider-Mayerson argues that their perception of peak oil as an inevitability, as well as their disenfranchisement with politics, have left peakists more concerned with individual survival rather than broader political action. More collective action exists in the form of Transition Towns: a movement that sees individuals come together, sometimes while practicing permaculture (see Aiken,2017; Fox, 2013), under a shared “attempt to build resilient, sustainable communities in preparation for peak oil and climate change” (Schneider-Mayerson, 2013, p. 879). But similar to individual action, the lack of engagement with broader political action leaves Transition Towns as insular communities focused on their own sustainability (Schneider-Mayerson, 2013). Peakists adopt a type of agrarian romanticism towards the apocalypse where those who have properly prepared will be able to live in a more sustainable world, despite all of the death and destruction that led them there (Schneider-Mayerson, 2013).

As Bridge (2011, p. 315) argues this “judgement day” view of peak oil and capitalism requires seeing the energy crisis in only geological terms, ignoring the political causes of resource scarcity. Peakists can only see peak oil as an end for capital because they have universalized relationships with the access and use of fossil fuels, which would suggest equal repercussions from its depletion. Not only is this not the case, as access to oil as a commodity differs greatly across the world, it also fails to account for way capitalist markets respond to resource scarcity. As Robbins (2012, p. 17) argues: “Even if petroleum becomes scarce, the rising price per barrel will encourage the use of otherwise expensive alternatives like wind and solar power, or simply cause consumers to drive less, endlessly stretching the world’s energy supply.” Rather than an abrupt upheaval of capitalist economic and political paradigms, the end

of cheap oil will more likely be protracted, expanding and putting greater pressure on those unable to afford the rising costs of energy while the people with the economic means to continue purchasing oil will do so.

Bettini and Karaliotas (2013) argue that there is a fetishization of oil in peak oil discourse that views it as thing only under the limits of geology. Framing it as an issue of geology invokes Malthusian arguments of population dynamics that suggest limits and controls on populations tied to resource scarcity (Bettini & Karaliotas, 2013; Robbins, 2012). A Malthusian view positions the issue of resource scarcity as a result of the natural ordering of things, there is only so much oil on the planet, instead of the reality that access to resources such as oil are heavily influenced by political and economic circumstances (Bettini & Karaliotas, 2013; Robbins, 2012). For movements like Transition Towns that see adapting to peak oil as their main focus, oil in itself is seen as the problem more than the companies, governments, and markets that profit from its extraction (Bettini & Karaliotas, 2013; Schneider-Mayerson, 2013). Bettini and Karaliotas (2013, p. 335) argue that for these movements, "oil as a 'thing' becomes more important than politico-economic and socio-environmental relations." The focus becomes about reducing the consumption of oil first and foremost because that is seen as the most immediately pressing and impactful way of creating social change. Bettini and Karaliotas argue that the focus on oil as a thing can lead to further disenfranchisement of those following peakist logics. Because oil scarcity is not fixed, and rather changes due to global politico-economics and the discovery of new oil deposits, the proposed impending collapse of capitalist society is pushed back, leading to a movement that is even further depoliticized by its lack of success in creating social change (Bettini & Karaliotas, 2013).

Bridge (2011) advocates taking a political ecology approach to the issue instead, seeing relationships to fossil fuels and other natural resources as positional rather than universal. This view acknowledges that unequal access to cheap energy around the world is a "normal" part of the oil economy under capital, rather than a departure from the norm, or an extraordinary crisis (Bridge, 2011). In this more critical look at peak oil, crisis is less a question of geological limits and more a deliberate result of excluding the "socio-ecological costs of oil production" (Bridge, 2011, p. 317). A political ecology view of the situation sees "the criteria for deciding among different environmental futures come from within society rather than being imposed by natural limits" (Bridge, 2011, p.

315). An energy crisis would become a preventable, albeit difficult, struggle with capital rather than an inevitability tied to geology.

2.2. Gaia Hypothesis

Co-written by Lynn Margulis and James Lovelock in the 1970s, the Gaia hypothesis "proposes that the beneficence of Nature is neither an accident nor the work of a benevolent deity, but instead is the inevitable result of interactions between organisms and their environment" (Kirchner, 2002, p. 392). Mollison's (1988, p. 10-11) interpretation of the concept is "that the earth less and less appears to behave like a material assembly, and more and more appears to act as a thought process. Even in the inanimate world we are dealing with a life force, and our acts are of great effect. The reaction of the earth is to restore equilibrium and balance. If we maltreat, overload, deform, or deflect natural systems and processes, then we will get a reaction, and this reaction may have long-term consequences." First formally appearing in *Permaculture: A Designer's Manual* by Bill Mollison (1988), the influence of the Gaia hypothesis on permaculture design is perhaps most immediately noticeable when looking at how Mollison and Holmgren's definitions of permaculture have changed before and after the concept's inclusion.

Prior to the introduction of the Gaia hypothesis, permaculture was defined as "an integrated, evolving system of perennial or self-perpetuating plant and animal species useful to man [sic]" (Mollison & Holmgren, 1978, p. 1) and "a dispersed system, available to anybody who can garden. Centred on human settlement or community, it holds the welfare of man [sic] and the needs of the people it is intended to serve as the paramount concern" (Mollison, 1979, p. 1). In these descriptions, permaculture has a particular masculine, human-centric focus where plants and animals are seen as tools to achieve permaculture's goals of low energy living, reminiscent of Roux-Rosier *et al.*'s (2018) first imaginary of permaculture as a set of practices. Post Gaia, permaculture is defined as "a system of assembling conceptual, material, and strategic components in a pattern which functions to benefit life in all its forms" (Mollison, 1988, p. ix). In this later description, there is less focus on a strictly human-centric focus with more attention given to the interrelationships between people and the environments they live in, relating more to Roux-Rosier *et al.*'s second imaginary of permaculture as a holistic life practice.

Interpretations such as Mollison and Holmgren's lead Kirchner (2002) to view the Gaia concept as difficult to use because of its "mixture of fact, theory, metaphor, and wishful thinking" (p. 392). Kirchner's (2002) main concern with the Gaia hypothesis is that it oversimplifies the dynamics that occur in ecosystems. At its most basic, the Gaia hypothesis is used to suggest "that life collectively has a significant effect on Earth's environment…and that therefore the evolution of life and the evolution of its environment are intertwined, with each affecting the other" (Kirchner, 2002, p. 393). More complicated versions of Gaia claim that "the biosphere can be modeled as a single giant organism…or that life optimizes the physical and chemical environment to best meet the biosphere's needs" (Kirchner, 2002, p. 393). At this level the concept is used to propose that life not only influences its environment but also stabilizes the whole global system through negative feedback loops that support life.

Kirchner (2002, p. 394) argues there is no acknowledgement of how "[coupling] between the biosphere and the physical environment can potentially give rise to either negative (stabilizing) feedback, or positive (destabilizing) feedback, and the consequences of this feedback can potentially be either beneficial or detrimental for any given group of organisms." Kirchner sees this focus on only beneficial stabilizing effects as a limitation because it fails to engage with the negative consequences that those same stabilizing effects can have for other organisms and that the same dynamic occurs with destabilizing effects. He argues that the Gaia hypothesis's version of the Earth, even as a metaphor, misses out on aspects of the planet that "will prove to be more complicated, more intriguing, and perhaps more challenging to our notions of the way things should be" (p. 406). Understanding the limitations the Gaia hypothesis is important considering the influence the concept has on permacultures environmental ethic.

In Rhodes' (2012, p. 395) description of permaculture he interprets the Gaia hypothesis as a view of the Earth as "a single large organism with many interdependent systems, that cooperate through feedback mechanisms, to maintain a viable equilibrium." Human actions in the industrial age are seen to have disrupted this equilibrium, which "has raised climate change as a spectre of the apocalypse" (Rhodes, 2012, p. 396). Looking to how Holmgren ([2002] 2011) describes Gaia says a lot about how social change is envisioned in his view of permaculture. He characterise the Earth as "a self-regulating system, analogous to a living organism" (p. 71) and as "a nurturing

mother who maintains favourable conditions for the diversity and renewal of life, but is ruthlessly harsh to individual species, and even whole ecosystem, in maintaining that balance" (p. 73). He goes as far as stating: "Care for the Earth…is not only due to ethical restraint and respect but also to fear of motherly rejection and annihilation" (p. 4). This view repeats the use of fear seen in peak oil discourse that centres individual action for self-preservation over more political struggle, and also evidently employs a highly gendered perspective of nature.

Holmgren invokes the "earth mother" trope that sees femininity as nurturing and closer to nature but also "as passive, reproductive animals, contented cows immersed in the body and in the unreflective experiencing of life" (Plumwood, 1993, p. 36). Plumwood (1993, p. 36) argues that rather than taking an anti-dualist approach where "women are not seen as purely part of nature any more than men are; both men and women are part of both nature and culture," the earth mother trope positions women "outside of culture, opposed to culture, not fully human." This is not to say that Holmgren views women as less than or not fully human, but that by re-employing a feminized vision of nature he fails to engage with the patriarchal logics his reasoning employs (MacGregor, 2014). MacGregor is critical of feminized depictions of nature, such as the wrathful but motherly Gaia, for their lack of engagement with the implications of what that connection means. She argues that "in insofar as nature remains largely feminized in the popular imaginary, when nature is cast as threatening or monstrous, bad times are coming for all things/people feminine" (MacGregor, 2014, p. 628). Holmgren's interpretation of gender maintains a dualist positioning of masculine and feminine where a male industrial culture is threatening to destroy the female Earth, who is in turn posed to annihilate humanity if humanity does not adopt more sustainable ways of living (i.e. permaculture). Holmgren's portrayal and engagement of dualisms is an issue that goes beyond his use of the Gaia hypothesis and will be discussed further in Section 2.4.

2.3. Permaculture's Ties to Indigenous Knowledge

Indigenous traditions are an important point to discuss in relations to permaculture's environmental ethic because of how they "provided much of the inspiration, elements and design solutions, both in the original conception and in the ongoing evolution of permaculture" (Holmgren, [2002] 2011, p. 22). In *Permaculture One* Mollison and Holmgren provide a short section on Aboriginal agriculture in Tasmania

where they hypothesize about the land use of Aboriginal Tasmanians pre-colonization. They suggest that the "'tameness' of all animal species, bird and mammal, in early explorations [by Europeans]…suggests that the aborigine moved amongst his food species more as a herder amongst a flock than as a hunter feared by all other species" (Mollison & Holmgren, 1978, p. 11). Mollison and Holmgren (1978, p. 11) propose that the agriculture Aboriginal Tasmanians had developed before the arrival of Europeans equated to "a highly-evolved permacultural region sufficient to sustain tribal life indefinitely." They then set up the main influence of Indigenous knowledge in permaculture design by stating: "It is a challenge to modern man [sic] to develop as sophisticated a system of world species, integrated in a single resource assembly, and so ensure a sustainable society in modern terms" (p. 11). Through this statement Mollison and Holmgren position Indigenous society and traditions as things from the past and that are in direct opposition to the industrial society of 'modern man'. Indigenous traditional practices are positioned as examples of how pre-industrial societies had a greater understanding, and were therefore closer, to the limits of nature. But in his framing of Indigenous cultures as examples of pre-industrial society, Holmgren frames Indigenous people outside of modern civilization in a move similar to how he frames women outside of civilization with the gendered interpretation of the Gaia hypothesis. Permaculture becomes something that relies on Indigenous knowledge but does not engage with Indigenous people and their struggles. This failure suggests a tendency in permaculture of reducing Indigenous people to their ecological relations in a trope known as the "ecologically noble Indian" (Nadasdy, 2005).

Nadasdy (2005, p. 292) writes that the trope of the ecologically noble Indian "cast indigenous people as 'original conservationists,' age-old stewards of the environment whose ecological wisdom and spiritual connections to the land can serve as an inspiration for those in industrial society who seek a new, more sustainable relationship with the environment." Clear connections can be made here to how Mollison and Holmgren treat Indigenous knowledge. This can be seen when Holmgren ([2002] 2011, p. 1) writes that the "focus in permaculture on learning from indigenous tribal cultures is based on the evidence that these cultures have existed in relative balance with their environment and survived for longer than any of our more recent experiments in civilisation." Again, Holmgren places Indigenous people outside of the realm of modern civilization, but he also sets up a high standard for Indigenous ecological relationships.

Nadasdy (2005, p. 293) argues that the trope of the ecologically noble Indian is problematic because “when indigenous people fail to live up to the impossible standards of ecological nobility, Euro-Americans tend to judge them harshly, as guilty of betraying their own cultural beliefs and values.” Rather than people who live in the present, confronted by both the legacies and ongoing acts of colonialism, Indigenous people are characterized as beings in perfect continuity with nature outside the scope of modern society.

There is a failure in permaculture design to engage in the cultural specificity of Indigenous relationships with nature, which can be tied up in the specifics of their socio-economic and political lives. Rarely are specific Indigenous cultures actually referenced when making claims on the environmental ethics of Indigenous peoples in permaculture design (Veteto & Lockyer, 2008). In reference to the foundations of permaculture’s ethics Holmgren ([2002] 2011, p. 1) states that “these principles can be seen as common to all indigenous tribal peoples.” In this example, Indigenous people are universalized as having the same environmental ethic, which permaculture uses to assert its own environmental ethic. It also invokes another aspect of the ecologically noble Indian trope; that of Indigenous people as “natural allies in particular environmental struggles” (Nadasdy, 2005, p. 292). Indigenous people are positioned as inherently in line with nature and ecological struggles, but no attention is paid to their own political struggles with dominant hegemonic forces. In order to maintain their cultural practices, Indigenous communities continue to resist capitalism and colonialism. Struggles for self-determination within a colonial state such as Canada may involve decisions and actions outside of mainstream environmentalism. As Daigle (2017, p. 15) argues in the case of the Anishinaabe communities she studied: “Indigenous peoples continue to be dispossessed of their food harvesting grounds and waters, either through direct removal or through environmental contamination and degradation.” Rather than only a set of environmental ethics, Daigle argues that Indigenous knowledge is enveloped in “the multiple political and legal authorities within Indigenous nations, clans and communities who give rise and continuity to Indigenous foodways” (p. 15-16). The universalization and homogenization of Indigenous knowledge allows it to be positioned as a form of legitimacy for permaculture design without any real engagement with broader political struggles of Indigenous people around the world.

This is an odd dynamic considering Mollison's own reverence for Aboriginal people. In *Permaculture II* in reference to Aboriginal Tasmanians he states: "My admiration for the intelligence and endurance of the Aboriginal people is also great. They know many things we need to know, about meaning in life, and about their country's ecology. They will be successful again, despite the messes we have made for them" (Mollison, 1979, p. 83). Holmgren ([2002] 2011, p. 5) also states that "Indigenous land rights and agrarian land reform in poor countries are two issues that continue to challenge the prevailing ethics about land." Holmgren shows worry over the loss of Indigenous languages and knowledge associated with the rise of industrial culture. So it is not to say that Mollison and Holmgren are ignorant of the struggles Indigenous people face around the world, but that there is a disconnect between their engagement with Indigenous knowledge and the two authors' vision of social change. Change is only considered in terms of reducing modern society's reliance on fossil fuels and reconnecting humans to the limits of nature. Other social and political issues are seen as tangential and to be addressed along the way, falling to engage with main drivers of the Indigenous knowledge Mollison and Holmgren position as core to permaculture's ethics.

In an attempt to invoke the sustainability ethics of Indigenous people Holmgren ([2002] 2011, p. 99) states: "We are reminded of Native American traditions about the need to consider the effects of our actions for seven generations into the future." This framing not only universalizes Indigenous traditions across the continent, it misses the mark by failing to acknowledge the complexities that can exist in Indigenous conceptions of generations and time. Whyte (2018, p. 228-229) describes an Anishinaabe perspective of "intergenerational time [as] a perspective embedded in a spiraling temporality (sense of time) in which it makes sense to consider ourselves as living alongside future and past relatives simultaneously as we walk through life." Whyte questions whether his ancestors would really be focused "on the loss of plant's animals, insects and ecosystems and the loss of traditional practices in the precise ways they were performed during their times" (p. 230). He suggests instead that "they would be quite surprised to see the disempowerment of women and the adoption of heteropatriarchy in Native communities, the lack of consent and trust within and across peoples and nations, and the absence and triviality of nonhuman agency in human affairs" (p. 230). Much more than the sustainability ethic lauded by Holmgren, Anishinaabe intergenerational time questions how the concerns and actions of the

present would be interpreted by their ancestors and will be interpreted by future generations. Holmgren's simplification of Indigenous knowledge points to the outdatedness of permaculture's core philosophies that have failed to incorporate critical scholarship since permaculture's original conception in the late 1970s.

Colonialism and its impacts on Indigenous people is a topic that gains little spotlight in any of Mollison and Holmgren's work and when it does, it is a shallow engagement that focuses on its impacts to permaculture rather than the struggles of Indigenous people. Returning to the loss of Indigenous languages, Holmgren ([2002] 2011, p. 211) writes: "It represents a direct loss of indigenous knowledge and local sustainable design, most of which has not been documented or passed on." Rather than the impact the loss of knowledge and culture that Indigenous people's face by losing their languages, Holmgren is focused on the impact that loss has for potential sustainability. This dynamic between permaculture and Indigenous knowledge reflects Whyte's (2018, p. 236) critique of how "Indigenous peoples are sometimes treated as the last people living in Holocene conditions…not fully harmed through the colonial, capitalist and industrial drivers of the climate crisis." Indigenous knowledge is something to learn from and copy because of its relevancy to sustainability and permaculture's vision of social change through energy descent, a way to reconnect with pre-industrial culture, but an actual engagement with the political realities of Indigenous people around the world is absent. Permaculture's focus on Indigenous societies and their traditional land practices could present a more political and intersectional permaculture engaged with social injustices reminiscent of Roux-Rosier *et al.*'s (2018) third imaginary of permaculture as an intersectional social movement. Unfortunately, Mollison and Holmgren's engagement with Indigenous knowledge is limited to depictions that reinforce and justify permaculture's own desire for energy descent.

Tension around the use of Indigenous knowledge in permaculture design was a topic brought up in two of my interviews. Both interviewees discussed the concern around using permaculture knowing that Indigenous knowledge has been appropriated. What both interviewees highlighted was that while there was not enough done to by Mollison and Holmgren to acknowledge and credit the lineages of Indigenous knowledge used in permaculture's creation, that fact should not in itself prevent the use of permaculture as a sustainability tool. It was argued that despite the issue of

appropriation, permaculture still presents one avenue for people to learn and engage about alternative ways of living with nature. One interviewee put it like this:

> Permaculture is a pretty good thing. It's certainly not better than what Indigenous people have or other systems that people have created all over the world and I think it goes wrong when permaculturalists narrate themselves as having this set of solutions that can worked for everyone. Because they can be, but I think the more promising thing is that people who are informed by permaculture can be in conversation with other traditions…So I try to reframe the conversation less about what permaculture as a whole could do or should do and more like what are people already doing at the edges of permaculture. To me I think that it's at those edges were you can already find those conversations going on. And for white people like me, part of where I have gotten to with questioning what should I be learning and what should I be working on is including the guidance by Indigenous people (N. Montgomery, personal communication, May 5, 2020).

They argue that permaculture provides a stepping off point for individuals to engage with more radical disciplines and communities that are already pursuing social change. Suggesting looking outside of permaculture for more radical perspectives raises an important question: does permaculture have the potential to create transformative social change on its own? Looking either to the edges of what is being done with permaculture or outside the design practice for more radical perspectives relies on individuals either already being a part of those communities or being exposed to them later on. Being in conversation with more radical disciplines outside of permaculture would certainly be a benefit to an individual's ability to enact social change, but what is missing here is a critical look at how the writings of Mollison and Holmgren, which are foundational to permaculture design, do not foster that kind of thinking. As has been discussed, and will be discussed in greater depth in the remainder of this thesis, Mollison and Holmgren's vision of social change through permaculture is situated as a practice for everyone through universalized perceptions of energy and climate crises.

2.4. Permaculture as a Driver of Social Change?

The three themes described above are largely limited to Roux-Rosier *et al.*'s (2018) first two imaginaries of permaculture design as a set of practices and a holistic life philosophy. Peak oil calls for the adoption of more sustainable practices that individuals can adopt in a coming climate crisis and the Gaia hypothesis calls for individuals to adopt more holistic views of humans in nature. Meanwhile, Indigenous

knowledge and cultures are used to inspire and legitimize permaculture's environmental ethic. What it is not included is an engagement with the political causes of environmental crises and their associated social issues – Roux-Rosier *et al.*'s third imaginary of permaculture as an intersectional social movement. For Roux-Rosier *et al.* (2018, p. 563) "the intersectional imaginary sees permaculture movements as integrated within diverse, cross-cutting social justice concerns" related to race, class, gender, and nature. The lack of politics appears to be primarily related to how permaculture defines the need for social change as an issue of sustainability. Mollison and Holmgren argue peak oil and climate change require changes to how we live in order to cope with the scarcity of oil and the 'wrath of Gaia' as Earth systems adapt to higher levels of atmospheric CO_2. Looking for solutions to the energy imbalances they have observed, Mollison and Holmgren turn to Indigenous knowledge, which they see as being representative of sustainability and life more in balance with nature. But at least as it has been articulated by its original creators, permaculture lacks a conceptual backing to facilitate more intersectional action that engages the colonial histories and presents that Indigenous knowledge is typically embedded in. Issues related to nature and sustainability are clearly important in permaculture, but race, class, and gender are not something either Mollison or Holmgren explore in depth, circumscribing permaculture's ability to craft solutions that tackle bigger systemic issues.

Social change is positioned as a necessity to enact a smooth descent from high energy modern society towards a society that is more sustainable, stable and in tune with nature. Peak oil and the Gaia hypothesis are used to describe energy descent as an eventuality through both practical and spiritual lenses, which do not require a more political intervention to be achieved. In describing permaculture, Holmgren ([2002] 2011, p. 237) says he sees "permaculture and the counterculture within a longer tradition of alternative movements within modernity…have the potential to spark the transformation of civilisation necessary for inevitable energy descent." In this statement, Holmgren is positioning permaculture's vision of social change specifically in relation to ecological sustainability. This feeds into Roux-Rosier *et al.*'s (2018) first two imaginaries of permaculture design as a set of technical practices and a holistic life philosophy, both of which primarily ask for individual changes to how people live and think. While permaculture makes connections between capital and ecological destruction these connections are limited to capital's desire for growth and the limited resources of the

Earth. Mollison and Holmgren argue for individuals to adopt new ways of seeing themselves in nature that are connected to the energy constrains of the planet but pay less attention to capitalism and colonialism's core logics of inequality and difference and how those logics pertain to capital's ability to adapt and capitalize on the moments of crisis it creates.

As Sylvia Wynter (2003) and Silvia Federici (2004) both argue, dualisms and difference were major contributors to modern society's organization and the rise of capitalism well before industrialization. Federici argues that the accumulation of wealth which occurred in Europe and its colonial powers was not done only through amassing land and labour; it also involved instilling gender and racial difference as a means of social control. Her analysis argues that the 16th and 17th century European witch hunts restructured society by demonizing relationships with nature, sexualities, and politics that did not comply with ideals of patriarchy and rationality (Federici, 2004). Wynter (2003) takes a more global approach to highlight how logics of difference and racial othering were applied through colonial efforts to cement hetero-patriarchal white supremacy. She argues that even while religious and supernatural qualifications of superiority were losing credibility amongst Enlightenment thinkers, racialization and colonialism were used to create a new category of human difference (Wynter, 2003). Racialization and colonial superiority provided the justification in the eyes of Western (i.e. white) society to create a dualism of human and racialized other. This othering justified the forced removal of Indigenous people's from their traditional territories and enslavement of racialized people around the world (Wynter, 2003). Both of these authors argue that this paradigm of othering through difference with regards to race and gender were intentional moves to promote and maintain white colonial hetero-patriarchal power and provide the basis for modern industrial capitalism (Federici, 2004; Wynter, 2003). Holmgren ([2002] 2011) is critical of the dualisms of mind and body and nature and culture and adamant about the failings of reductionist science and Cartesian thought, but he does not engage with other dualisms such as race, class, and gender – dualisms that scores of theorists have implicated as central to capitalist social relations and ecological degradation (Federici, 2004; Mies, 1998; Plumwood, 1993; Pulido, 2016; Wynter, 2003).

Rather than take a more nuanced view of how modern society exists as a messy combination of different ways of living in nature, Holmgren ([2002] 2011) positions all of human culture as homogenized into a binary of industrial and sustainable (Table 2.1).

Permaculture defines high energy industrial practices as the main problem society needs to address. But this conception of what the problem is misses the variety and unevenness in terms of how people are positioned in relation to capitalism. The different relationships and experiences people may have in modern society are denied for a universalized one. Davis and Todd (2017) are highly critical of placing the blame on industrialism as it erases the role of colonialism in shaping modern climate issues. They argue: "Colonialism, especially settler colonialism – which in the Americas simultaneously employed the twinned processes of dispossession and chattel slavery – was always about changing the land, transforming the earth itself, including the creatures, the plants, the soil composition and the atmosphere" (Davis & Todd, 2017, p. 770). Rather than a future apocalypse, environmental destruction and social upheaval is something that Indigenous people have been facing for centuries that started with colonialism, the dispossession of land, and the severing of their relationships to cultural practices (Davis & Todd, 2017; Whyte, 2018). By framing the issue on the rise of capitalism and industrial society, without engaging with colonialism, climate change is positioned as a universal issue for humanity to face on equal terms rather than one whose causes and impacts have been anything but equal (Davis & Todd, 2017).

Table 2.1 Presentation of permaculture and sustainable society in a binary opposition to industrial society.

Characteristic	Industrial Culture	Sustainable Culture
Energy Base	Non-renewable	Renewable
Material Flows	Linear	Cyclical
Natural Assets	Consumption	Storage
Organization	Centralised	Distributed Network
Scale	Large	Small
Movement	Fast	Slow
Feedback	Positive	Negative
Focus	Centre	Edge
Activity	Episodic Change	Rhythmic Stability
Thinking	Reductionist	Holistic
Gender	Masculine	Feminine

Note: Table adapted from Holmgren, [2002] 2011, p. xxviii.

Looking at energy, Holmgren positions non-renewable and renewable energies as characteristics of industrial and sustainable culture respectively (Table 2.1). In doing so Holmgren erases the unevenness that exists within the development of alternative

energy systems. Taking wind energy as an example, Avila (2018) argues that the global push to create wind farms as part of a larger transition to a lower carbon world has had serious implications from an environmental justice perspective. Indigenous and rural communities in particular have had to deal with the encroachment on their territorial rights by state and corporate interests trying to develop large wind farms (Avila, 2018). These are energy projects that require significant land changes and feed the energy consumption of cities and industries far away from those who have to bear the social, environmental, and economic costs (Avila, 2018). Advocates of the push for renewable energy as a fix to climate issues argue that a green capitalism has the potential to innovate and adapt to environmental crises and develop green energy alternatives to fossil fuels (Bosch & Schmidt, 2019). Bosch and Schmidt (2019, p. 278) argue that despite the role of capitalism and fossil fuels in current environmental crises, "market economies based on regenerative energy systems that are competition-oriented and guided by state measures may develop great ecological and socio-economic effectivity." What their analysis misses are the significant political and social inequalities that exist and how a transition to more sustainable technologies fails to address those inequalities. As Goldstein (2018, p. 27) points out, green capitalism has a tendency to "focus on technology…as the means to fix our environmental problems without actually making any substantive changes to the way sociotechnical-environmental life is organized." In this respect, while capitalism may make advancements in sustainable green technologies, existing inequalities and injustices have no guarantee of being addressed.

Holmgren ([2002] 2011, p. xvi) recognizes that the attraction of green technologies is "because they can be applied by business within a capitalist market economy without waiting for fundamental changes either in the political and cultural realm or in the personal behaviour and habits of citizens." but these are not the reasons behind his dismissal of green technologies. Holmgren even goes as far to say that "[for] many, the permaculture focus on land and natural resource management is complementary to the industrial focus of the 'green tech' optimists" (p. xvi). His critiques focus on how permaculture is "predicated on the likelihood of some degree of collapse and breakdown in technology, economics and even society" and that it "sees pre-industrial sustainable societies as providing models that reflect the more general system design principles observable in nature, and relevant to post-industrial systems" (p. xvii). Green technologies are not rejected because of their potential to reproduce or extend

capitalist modes of production, but because there is an expectation that the supports for green technologies will simply no longer exist. The issue is that without significant political and social change, rather than spell the end of capitalism or the beginning of a greener capitalism, fossil fuel shortages and climate crises actually provide capitalism the means of continuing to impose even more severe social and economic disparities. Considering fossil fuels or climate change as leading industrial society into a moment of severe crisis and collapse fails to engage with how good capitalism is at adapting and profiting off of moments of crisis.

In Naomi Klein's (2008, p. 311) analysis of disaster capitalism she highlights how integral crises are to capitalism post 9/11. Entire industries exist to profit from the aftermath of a crisis. Klein writes "what is unquestionably good for the bottom line of these companies is cataclysm—wars, epidemics, natural disasters and resource shortages." Rather than a crisis for capitalism, the instabilities associated with fossil fuel shortages would only provide another opportunity to implement the practices already in place around the world. Klein argues that what starts as privatized disaster relief can quickly escalate to fully privatized gated communities with their own energy systems and security forces demonstrating "stark partitions between included and excluded, the protected and the damned" (p. 414). The rich and powerful who can afford access to such gated communities "are confident they will be able to buy their way out of the worst of it" (p. 419). Rather than the great equalizer that will cause everyone to go back to 'a simpler way of living', disasters open up new means of privatization and control under capitalism.

Whyte (2018) also highlights how prominent narratives of climate change act as an escape from colonial and racial histories through a notion of a shared apocalypse. Because again the climate crisis is perceived as an issue that effects everyone, no one can escape its effects. Whyte's depiction of intergenerational time problematizes this vision of an imminent climate crisis by situating the crisis as one that has been ongoing through continued colonial violence. Ecological collapse and forced adaptation to new climates are not potentialities of human induced climate change but events that Indigenous peoples have already had to live through because of ongoing acts of settler colonialism. Permaculture's focus on energy descent and preparing for future crises misses the mark because the crisis is now and has been going on long before industrial

agriculture began changing how people relate to the environment. Davis and Todd argue:

> Through [a confrontation with colonial and universalized logics], we might then begin to address not only the immediate problems associated with massive reliance upon fossil fuel and the nuclear industry, but the deeper questions of the need to acknowledge our embedded and embodied relations with our other-than-human kin and the land itself. This necessarily means re-evaluating not just our energy use, but our modes of governance, ongoing racial injustice, and our understandings of ourselves as human. (Davis & Todd, 2017, p. 776).

Holmgren assumes that the end of fossil fuels also means the end of capitalism and industrial society as a whole. But Holmgren's focus on a binary view of industrial and sustainable culture, which universalizes relationships with nature as either sustainable or not, fails to address the core logics of capitalism and colonialism that exist both within and outside of the contexts of industrial society. A demonstration of Holmgren's lack of critical engagement with dualism can also be seen in his views of gender and its role in sustainable society.

Holmgren makes a clear distinction between a masculine industrial culture and a feminine sustainable culture (Table 2.1). In making this distinction, Holmgren is not critical of a gender binary in the same way he is critical of a nature/culture dualism. Rather he is critical of the lack of a feminine presence in industrial society. Holmgren writes: "environmental concepts, including permaculture, emphasise working with the rhythmic cycles of change in nature, rather than excessive reliance on the episodic intervention that kicks the system into some hopefully preferable state. It is reasonable to see this view of nature as more in tune with feminine rather than masculine culture" ([2002] 2011, p. 268). Gender for Holmgren is something that, much like Earth systems, is out of balance in industrial society. He argues that the dynamic quality of nature and its ability to both support and disrupt human society as it changes is not accounted for in industrial culture, which he argues views nature as stable and fixed. Holmgren makes this argument because he views the work of women as closer to nature, as demonstrated by the following:

> Bringing this all down to earth, it is the patterns of traditional life focused on the home and a domestic connection to nature, the cycles of the seasons, and even the mundane, supposedly boring aspects of childcare and education, housework and building maintenance, plant and animal

> husbandry, community support and maintenance, which must dominate any notions of sustainable culture. It is hard to avoid the conclusion that women might be leaders in this transformation (Holmgren, [2002] 2011, p. 268).

The activities Holmgren lists in the above quote fall under the scope of social reproduction, which include “birthing and raising children, caring for friends and family members, maintaining households and broader communities, and sustaining connections more generally” (Fraser, 2016, p. 99). Fraser argues that in capitalist societies there exists a “crisis of care” (p. 100) where social reproduction is undermined by neoliberal capitalist logics of production through the unpaid labour of typically poor, racialized women even though their work is necessary for the continuation of capitalist economies and society. Holmgren clearly places an importance on social reproduction, but he does not engage with the political contexts of why this is an issue in the first place. In Holmgren’s permaculture, women are seen as potential leaders in a transition to a more sustainable society because of their perceived knowledge of domestic life, which Holmgren sees as connected to sustainability and the rhythms of nature, but not specifically in relation to their experiences and struggles under capitalism as described by Fraser. MacGregor (2014, p. 625) is particularly concerned when an emphasis is put on the connection between femininity and domesticity because of how it undermines feminist efforts to “destabilize traditional (that is, hetero-normative, white, middle class, and so on) notions of femininity and masculinity.” As MacGregor argues: “it is troubling to observe the emergence of a particular kind of self-identified women’s climate change activism that connects feminine domestic expertise with saving the planet from the apocalypse (p. 625). Holmgren’s focus on women because of their perceived relationship to domestic work fails to provide a critical examination of why women have been relegated to that work in the first place.

The role of women in permaculture was an issue that was brought up in one of my interviews. The interviewee found that, especially at the beginning, permaculture leadership has been heavily influenced by the perspectives of white males who make up the majority of famous writers and instructors (H. Roessler, personal communication, February 27, 2020). She did note that, at least anecdotally, this is a trend that has been changing recently with more women, like herself, having the opportunity to teach and develop permaculture courses. Supporting this view, a study by Ferguson and Lovell (2015) on the demographics of English speaking permaculturalists around the world

found 53% to be women. That being said, while broader participation in permaculture by men and women seems to be on par, men still make up the majority of leadership roles, dictating the focus of permaculture as a whole (Moyles, 2015). It is important to acknowledge the gendered perspectives permaculture holds and their limitations.

To Holmgren ([2002] 2011, p. 268) “it seems inevitable that society eventually evolves a new structure of "ambiguous complementarity” between the genders, if only because it reflects a fundamental energetic efficiency for organisation of households.” Holmgren desires to reintroduce a feminine presence he sees as lacking in industrial culture, he even recognizes “the deep masculine roots of [his] own way of thinking” (p. 268). But he is not critical of the notion of a gendered division of labour in of itself. As Plumwood (1993, p.165) writes: “Accounts of male bias are important not only because an adequate environmental philosophy should aim to respect the moral experience of women as much as that of men but because phallocentrism and the exclusion of women’s experience is a very good indicator of similar exclusions of other related subordinated groups.” Plumwood argues it is not only a nature/culture dualism that is of issue, but dualisms in general that position people in direct opposition to each other and the world around them.

By seeing modern society’s issues as strictly a result of dualism between nature and humanity, or sustainable and industrial culture, the work of Mollison and Holmgren fails to engage and address with capitalisms intersectional origins. Plumwood (1993, p. 2) is adamant about addressing the dualism of nature and culture in Western society, but she also sees nature as part of a broader feminist framework and a “vital contribution to a more complete understanding of domination and colonisation.” Even though Holmgren and Plumwood share a critique of the nature/culture dualism in Western society, Holmgren’s position is largely an ethical one that misses the importance of a more political investigation of human relationships with nature. Without an investigation into the politics of human relationships with nature, which actually account for distributions of power within those relationships, it becomes easy to universalize a singular experience in relation to nature (Plumwood, 1993). This universalized experience with nature “obscures highly relevant cultural and other differences between human groups, and differences in responsibility for and benefits from the exploitation of nature” (Plumwood, 1993, p. 12). Because permaculture’s environmental ethic is primarily concerned with

technical and ethical visions of environmental crises, the solutions for how to achieve a socially just future are not well addressed.

Consistent with its limited problem definition, rooted in fears of scarce resources and out of balance ecologies, permaculture's proposed solutions to ecological issues centre on changing individual behaviours and relationships with nature and a return to an idealized version of pre-industrial society, typically with Indigenous communities cast outside of modernity. Holmgren ([2002] 2011, p. xxiv) says the "idea behind permaculture principles is that generalised principles can be derived from the study of both of the natural world and pre-industrial sustainable societies, and that these will be universally applicable to fast track the post industrial development of sustainable use of land and resources." Neither of these topics demand a confrontation with the political and societal structures that enforce the industrial modes of production causing ecological crises in the first place. Rather Holmgren's desire to universalize permaculture ethics reasserts the dominant hegemonic views of difference described by the likes of Federici (2004) and Wynter (2003). As Plumwood (1993) argues, a universalized environmental ethic does not work as it cannot account for the uneven and particular struggles different group of people face. She writes:

> Hence ecological selfhood cannot be conceived in terms of the thunderclap of personal conversion to an after-hours religion of earth worship, tacked on to a basically market-orientated conception of social and economic life. Nor…should it be tied to the attempt to resurrect past social forms. It must be seen rather as an attempt to obtain a new human and a new social identity in relation to nature which challenges this dominant instrumental conception, and its associated social relations. (Plumwood, 1993, p. 186).

For Plumwood, only taking issue with human/nature relationships denies difference in other forms such as gender, race, and class as well as the role of difference in colonial and capitalist logics of domination. Permaculture's fixation on pre-industrial societies' relationships with nature does not confront the social injustices of those times. Without a critical examination of the interrelated logics of domination that have existed in Western society long before the rise of industrial society, permaculture is left unequipped to address those logics in the modern day.

This chapter has built an account of permaculture's vision of social change, as seen through the writings of Mollison and Holmgren. This vision is foremost informed by peak oil discourses, the Gaia hypothesis, and a reverence for Indigenous knowledge.

What these topics have in common are apocalyptic narratives of environmental and social collapse spurred on by energy intensive industrial society. Locating energy as the main problem with modern society, Mollison and Holmgren position permaculture as a means of social change through primarily technical and ethical means. Holmgren ([2002] 2011, p. 5) is adamant that the "ethic of earth stewardship provides a moral imperative to continue to work out more creative ways for vesting control of land in collective structures." But for issues as broad and deep rooted as capitalism and colonialism it will take more than strong ethics and morals to enact meaningful change. This is especially true considering Mollison and Holmgren's tendency of presenting permaculture's ethics as universalized, denying the particularities of environmental relationships that exist along different lines of difference. In the next chapter I analyze permaculture's second ethic, caring for people, and how that ethic is described, seeking to understand how permaculture's vision of social change is supposed to be implemented.

Chapter 3.

Ethics of Personal Care: A Gateway for Collective Action or an Affirmation of Individualism?

The previous chapter demonstrated how Mollison and Holmgren's vision of social change is primarily focused on guiding society towards energy descent. This chapter looks at *how* permaculture positioned to achieve that goal. A longstanding critique of mainstream sustainability and environmentalism questions the use of individualized and consumer-based approaches to social change (Kennedy & Boyd, 2018; MacGregor, 2014; Maniates, 2001; Middlemiss, 2014; O'Rouke & Lollo, 2015; Sutoris, 2019). As discussed in the introduction, alternative food systems and Western sustainability practices frequently advocate social change oriented towards consumer-based, white, and traditionally middle-class values of local healthy food, targeting idealized sustainability ethics (Alkon 2008; Guthman, 2008; Slocum, 2007). These alternative food movements often adopt universalized and "colour-blind" visions of sustainability, targeting the environmental and health impacts associated with industrial agriculture, which are easily adoptable by white and middle-class individuals, but overlooking political issues related to racism, colonialism, and capitalism (Guthman, 2008). In Chapter 2, I outlined how Mollison and Holmgren use peak oil discourse, the Gaia hypothesis, and Indigenous knowledge systems to characterize permaculture as a similarly universalized environmental ethic. Focusing on permaculture's more socially minded second ethic, Care for the People, in this chapter I analyze how Mollison and Holmgren sees people enacting social change and who are seen as the drivers of that change.

Permaculture's ethic of people care goes back to the practice's original purpose of creating landscapes that can provide for the needs of individuals without damaging the planet. Mollison and Holmgren (1978, p. 4) originally described permaculture "as the extended and developed evolution of a total support base for man [sic], beyond those developed by pre-industrial societies." For "anybody who can garden" (Mollison, 1979, p. 1), permaculture is presented as a practical and accessible means of developing new ways for people to meet their needs. Permaculture's ethic of people care was first formally articulated by Mollison (1988, p. 2) in *Permaculture: A Designers' Manual* as a

“[provision] for people to access those resources necessary to their existence.” This second ethic is directly tied to the first ethic of Earth care, which privileges cooperation and interconnectivity with nature (Mollison, 1988). People care is driven by an assumption that the best way to live sustainably is working together towards an ethic of caring for the planet. In outlining this ethic’s scope, Mollison writes: “we observe a general rule of nature: that cooperative species and associations of self-supporting species (like mycorrhiza on tree roots) make healthy communities. Such lessons lead us to a sensible resolve to cooperate and take support roles in society, to foster an interdependence which values the individual’s contributions rather than forms of opposition or competition” (p. 3). What Mollison argues is that sustainability occurs through individuals cooperating together based on their shared strong sustainability ethics towards creating a more sustainable future. The focus on collaboration over competition is an important factor in the implementation of permaculture’s vision for social change, a topic that will be discussed later in this chapter.

Permaculture is positioned as a design process that will enact a transition towards a sustainable society through changes to how people’s needs are met. Holmgren’s ([2002] 2011, p. xix) “Permaculture Flower” (Figure 3.1) is a visual representation of the different aspects of society he sees requiring “transformation to create a sustainable culture” and some of the ways he sees that change occurring. The spiral of the flower represents an individual’s path through permaculture, which begins with the design process’s ethical and design principles applied to the physical environment, then cultural aspects such as education and spiritual well-being, and ending with economics and governance before starting the spiral again (Holmgren, [2002] 2011). The flower also represents a process that begins “initially at the personal and the local level and [proceeds] to the collective and global level” (Holmgren, [2002] 2011, p. xx). Beginning at the individual level raises questions about the extent to which permaculture’s vision of how social change is enacted revolves around individual action, especially considering how that mode of action has been problematized in cases outside of permaculture (see Guthman, 2004; Maniates, 2001). This chapter also explores that question.

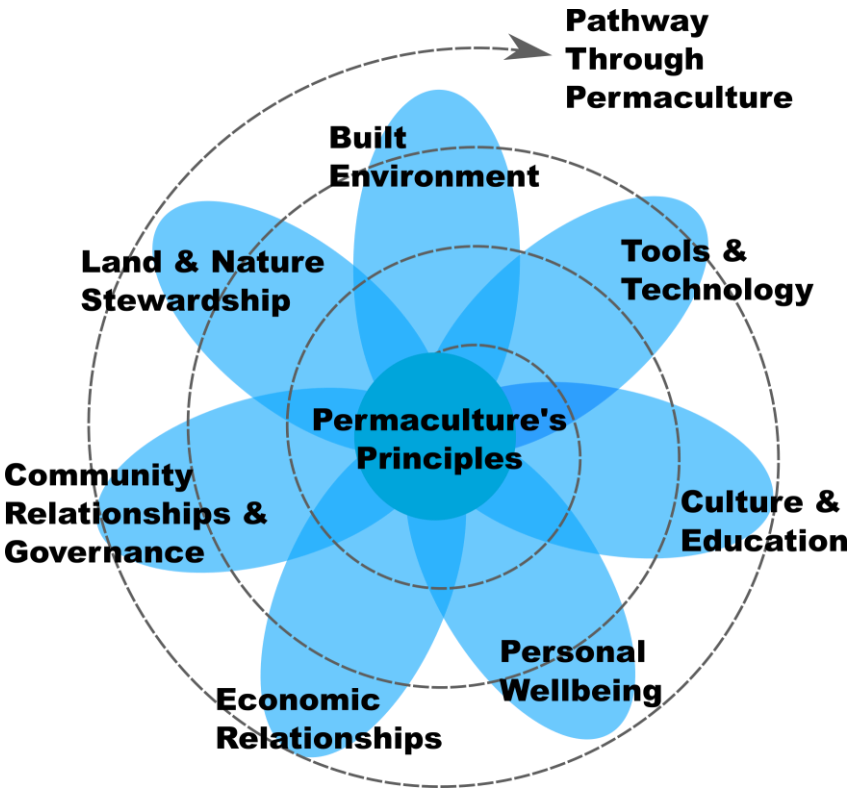

Figure 3.1 The Permaculture Flower highlighting the main aspects of human society that permaculture aims to change.
Note: Adapted from Holmgren, [2002] 2011, p. xx.

In this chapter I analyze at what scale permaculture's ethic of people care is supposed to take place and who the drivers of that action are supposed to be. To conduct this analysis I continue my textual analysis of Bill Mollison and David Holmgren's writings on permaculture design of the previous chapter while incorporating critical interventions from literature on sustainability and alternative food systems. Interrelated with my analysis, I bring in key insights from my interviews that discuss the strengths and limitations of permaculture design as a means of social change. I analyze how Mollison and Holmgren describe permaculture's ethic of caring for people, looking at who they target as the main drivers of social change and by which means they foresee this change occurring. I also consider the extent to which individual action is focused on and what role more collective action has. Later in the chapter, I shift my focus to permaculture design courses (PDCs). Since PDCs are the primary way permaculture knowledge is disseminated, their scope and accessibility says a lot about who is likely to participate in permaculture design. As previously stated, primarily middle-class approaches to social change have a tendency to focus on less political methods

such as consumption. These methods rely on individual behavioural changes, which are predominantly apolitical rather than direct confrontations with the status quo. Identifying the ways permaculture engages with people care allows for a better understanding of how permaculture will be adopted as it becomes more mainstream. As Guthman (2004) argues in the case of organic agriculture, even if an alternative food movement sets out with counter-culture values, those values can be eroded when attempting to appeal to the market influenced needs of mainstream society. Through this analysis I seek to develop a better understanding of who the 'people' in permaculture's care for people are, questioning whether permaculture is a practice for everyone.

3.1. Permaculture's Scale of Action

A recurring theme that came across in my interviews was what drew individuals to permaculture in the first place. As stated in the introduction to this chapter, Mollison and Holmgren position permaculture as a means for individuals to enact change. Many of my interviewees echoed this sentiment, situating permaculture as a practical means of addressing environmental issues through the application of ecological based design principles and the observation of nature. Two interviewees shared:

> …permaculture was just a really great way for me to start kind of moving towards actually taking action to do more planet repair. So I think that was the biggest draw that it had for me. The framework that it was operating under just seemed like a really holistic framework and also the fact that I felt like I could kind of attach into it quite easily and start affecting change (H. Roessler, personal communication. Feb 27, 2020).

> What I love about permaculture, especially out here on this acreage of farm, is that the more observation skills that I develop and the more conversations I have with people who are permaculturally trained I realize that it's actually an intuitive way of going about connecting with your natural environment (T. McPhail, personal communication, May 7, 2020).

While social issues were also important, those issues were predominantly situated within a broader desire to address issues of sustainability and ecology. Speaking from my own experience with permaculture design, I had a very similar attraction to the design methodology. Having spent the majority of my undergraduate degree learning about environmental issues such as deforestation, ocean eutrophication, and soil erosion and their relationship to industrial agriculture, permaculture's focus on small scale, local, and

ecologically mindful design presented itself as the perfect way for me to enact meaningful change.

Permaculture design is focused on direct observation, developing an understanding of what is possible in an environment, and developing a design plan for that space. It is therefore very well equipped at developing systems that are sustainable, that account for the limitations of what a local ecology can handle. The expectation is that the same principles of carefully designed landscapes also work for carefully interacting with and caring for people. In Holmgren's book *Permaculture: Principles & Pathways Beyond Sustainability* each chapter is devoted to discussing one of permaculture's design principles and the principle's relevancy to social change. Holmgren ([2002], 2011, p. xii) writes: "Included in each chapter are examples of the application of the principle towards creating an ecological culture. The applications of the principle start with examples from gardening, land use and the built environment as the most concrete and widely understood; but they also include the more vexed and complex issues of personal behaviour and social and economic organisation." Permaculture's design principles are seen as applicable to both ecological and social issues, which are themselves seen as interrelated. This relationship between ecological and social issues goes back to the naming of permaculture itself, which is the contraction of both 'permanent agriculture' and 'permanent culture'. On the topic of interrelationships and permaculture, one of my interviewees said:

> …the whole point of permaculture is completely based on the idea of interrelationships. So I find the way that permaculture speaks of patterns in broader society, patterns in ecosystems, and how those patterns are interacting with each other to create sort of synergistic effects. On that broad philosophical level, I think permaculture is really impactful because it is so recognizing of the importance of and the existence of interrelationships in terms of being able to do good care for the Earth and good care for people. So I think that at its core that really persists with this idea of social transformation (H. Roessler, personal communication. Feb 27, 2020).

Because social and ecological systems are seen as interrelated, any attempt to address issues in one will also need to address issues in the other. There is an understanding that to do permaculture properly requires taking in and accounting for these different social and ecological factors in ways that confront colonialism and capitalism. Another interviewee argued:

> Because the design principles are asking us to take into account all kinds of social forces…the ways to frame what we might call 'good permaculture design' would inherently be challenging [colonialism and capitalism] because they are the systems that are destroying people and the Earth. If permaculture is trying to do something regenerative, it has to take account those patterns (N. Montgomery, personal communication, May 5, 2020).

While an idealized 'good permaculture design' focused on careful observation and pattern recognition of ecological and social systems may be able to confront colonialism and capitalism, people's relationships with colonialism and capitalism are different and complex. As discussed in the previous chapter, difference is not something that is well addressed within the writings of Mollison and Holmgren and the scope and scale of how they articulate social change within permaculture design has its limitations.

Permaculture is focused on starting at the centre and moving outwards. Holmgren ([2002] 2011, p. xxvii) refers to this as zone and sector analysis (Figure 3.2), which he applies to both physical and social environments. Looking at it from a social perspective, permaculture theory says that "zones of influence and direct power start with the personal and extend to the global." Holmgren articulates permaculture's ethic of people care as initially focused on how individuals act and the choices they make. Holmgren writes: "Care for People starts with the self, but it expands in widening circles to include our families, neighbours, local and wider communities" (p. 7). He focuses first on the individual because he believes that people have the greatest influence locally. Holmgren argues that the "greatest ethical concern is naturally focused close to the centre because that is where we have the greatest power and influence…[and to] be able to contribute to a wider good, one must be healthy and secure" (p. 7). As individuals develop their own personal security they then move on to affect the levels of households, communities, bioregions, nations, and eventually the international. This privileging of personal change has consequences for how Holmgren suggests permaculture will lead to an eventual change in society.

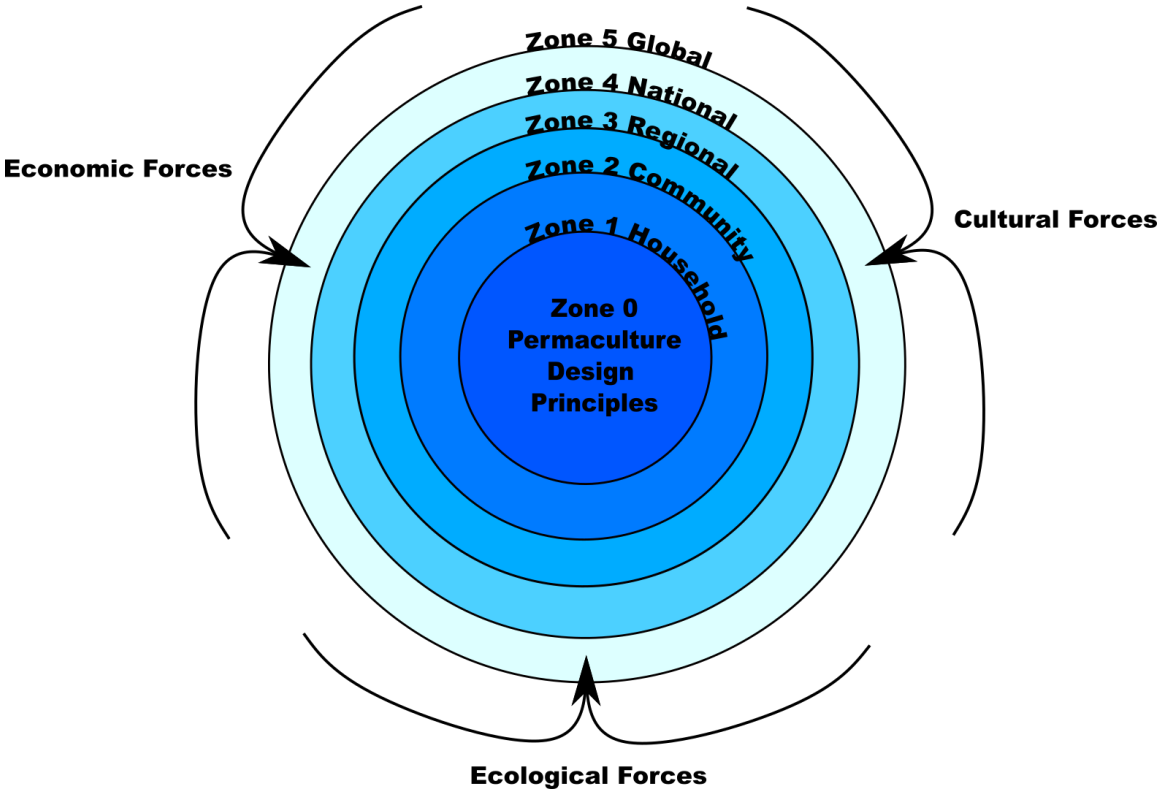

Figure 3.2 Visual representation of permaculture's zone and sector analysis depicting the possible influence of an individual as well as the influences of outside forces.

Note: Adapted from Holmgren, [2002] 2011, p. xxvii.

Holmgren ([2002] 2011, p. 7) is wary of how his view of the importance of individual care may be interpreted as "ignoring the gross disparities of wealth between rich and poor nations and people," but justifies his position by arguing that "providing for one's own need first" reduces the impact on those less well off. He argues that by reducing "our dependence on the global economy and [replacing] it with household and local economies, we reduce the demand that drives the current inequities" (p. 7). Privileging individual action to develop more sustainable local communities is positioned as "not an invitation to greed but a challenge to grow up through self-reliance and personal responsibility" (p. 7). In line with permaculture's critique of the negative environmental impacts associated with industrial consumer culture, individual acts of sustainability are seen as the most effective means of creating change by changing how and what we consume.

However, Maniates (2001, p. 33) is highly critical of individualized and consumption-based approaches to environmentalism and social change because of how "there is little room to ponder institutions, the nature and exercise of political power, or ways of collectively changing the distribution of power and influence in society." In a process Maniates refers to as "the individualization of responsibility," social change is expected to occur through educated individuals making smart choices as consumers and individuals "with the larger public good in mind" (p. 33). Actions such as purchasing local organic food, properly recycling, and energy efficient technology exemplify the individualization of responsibility, where individuals are led to believe that their actions are enough to make a significant change in the world. Maniates is particularly critical of the individualization of responsibility not only because it does not address the role of political institutions in environmental destruction, but because it also undermines the type of collective political action needed to confront those institutions. By privileging depoliticized and individualized acts of social change, collective calls to hold governments and other institutions accountable can be easily deflected back on to individuals as demonstrable by dominant neoliberal ideals of governance.

Neoliberal governance is highly attuned to the benefit of promoting individual based consumption as the primary means towards social change. Neoliberalism, which seeks to integrate and expand all global economies through free-trade regimes, privatization, and small government, also seeks to "narrow the possibilities for various kinds of political intervention in the domestic economy" (Helleiner, 2002, p. 255). Rather than public citizens whose civic duty it is to intervene in political matters, neoliberal regimes push for people to be viewed as individual private consumers (Helleiner, 2002). As Middlemiss (2016, p. 938) suggests: "individualisation is a deliberate strategy [by neoliberalism] to offload responsibilities of the state to the individual." This is where Maniates' individualization of responsibility comes into play. Having people see themselves foremost as individual consumers blocks off more collective influence on broader policy through protests and other forms of political action. MacGregor (2014, p. 624) argues: "It is symptomatic of the triumph of the ultimate neoliberal subject—the citizen-consumer—that people in the affluent world have internalized the idea that the best way to tackle climate change is through lifestyle change." Rather than be seen as an issue to be debated and contested in more public arenas such as government or on the streets, in a very neoliberal move, the responsibility for addressing climate change

and other ecological crises are pushed onto individuals, households, and their consumer choices (MacGregor, 2014; Middlemess, 2016).

While permaculture does include a heavy emphasis on individual action and changing behaviours of consumption, its focus on reconfiguring how individuals relate to nature in all aspects of their lives (as represented in Figure 3.1) differs from a strictly consumer and market based critique, particularly in its strong focus on community. As one of my interviewees argued:

> I actually think the origins of permaculture are quite radical in some ways…I would also want to challenge the dominant story that people have about permaculture as this white middle class movement that started out as such…its founders were these two white dudes but I think they had really radical, counter-culture ideas and they were trying to think from within their own social locations: How can we totally rethink the way that we relate to ecosystems, the way that we live, the way that we get our food? And that's how permaculture arose. That in itself to me is pretty radical (N. Montgomery, personal communications, May 5, 2020)

Mollison and Holmgren's vision of permaculture calls for a complete reordering of our day-to-day lives when it comes to interacting with nature and each other (Figure 3.1). Even though there is a heavy focus on individual action in Mollison and Holmgren's writings, they are still adamant that social change requires collective action. In their original book on permaculture, Mollison and Holmgren (1978, p. 12) write that they "do not subscribe to the isolated fortress mentality of a totally self-sufficient approach, but believe in designing for the whole society of man [sic]." Mollison (1988, p. 508) also argues that "[we] need to set about, in an orderly, sensible, and cooperative way, a system of replacing power-centred politics and political hierarchies with a far more flexible, practical, and information-centred system responsive to research and feedback, and with long-term goals of stability." Mollison and Holmgren centre collective and cooperative action in their approach to social change to a level that does not fit into Maniates critique of the individualization of responsibility. The issue is that even though permaculture may propose radical changes, those changes do not directly confront existing power structures such as colonialism and capitalism, instead advocating for a withdrawal from directly interacting or confronting with those structures in order to create a new sustainable society.

Mollison and Holmgren's writings are skeptical of larger forms of organization, especially government and higher education. But unlike Maniates who calls for a critical investigation of these institutions through collective action, Mollison and Holmgren call for a complete rejection of these institutions in order to focus on the needs of individuals and small communities. Mollison (1988, p. 506) believes that "very few sustainable systems are designed or applied by those who hold power, and the reason for this is obvious and simple: to let people arrange their own food, energy, and shelter is to lose economic and political control over them. We should cease to look to power structures, hierarchical systems, or governments to help us, and devise ways to help ourselves." Mollison employs the same rhetoric of well-educated individuals acting on their own self-interest that Maniates critiques as one of the major limits of mainstream environmentalism. In reference to adopting a set of environmental ethics, Mollison argues that "[such] changes in people come about by education and information, and when enough people change, then political systems (if they are to survive) may follow, or become as irrelevant as they now appear to be in terms of real solutions" (p. 509). Collective action as described by Mollison and Holmgren is achieved through educated individuals who come together sharing a common ethic of sustainability and caring for the planet, not by confronting the power structures that necessitates permaculture's existence in the first place. This is an issue that seen beyond permaculture and is shared amongst other sustainability driven movements, reflecting a debate over the effectiveness of political and apolitical attempts at social change.

Moving beyond discussion of sustainable consumption, ecological citizenship is concept that focuses on "a conscious choice to change one's individual behaviour, rejecting practices whereby this behaviour is steered through economic stimuli or advertisement campaigns" (Kenis, 2016, p. 953). In a reaction to the failure of strictly consumption based approaches, ecological citizenship focuses on the importance of collective action and a rejection of individual market relations when it comes to social change. In Kenis's (2016) examination of ecological citizenship, she analyzes two very different approaches to collective action in relation to climate change undertaken by the Transition Town and the Climate Justice Action movements. Kenis argues: "The difference between Transition Towns and Climate Justice Action is a difference between a communitarian 'we' and an agonistic 'we'. This distinction corresponds with two types of citizen commitment which require people to inscribe themselves very differently within

a collectivity" (p. 965-966). For Transition Towns, 'we' is defined geographically within localized communities who share a commitment for creating radical and resilient futures outside of oil dependent society (Kenis, 2016). Much like what is described by Mollison and Holmgren with permaculture, Transition Towns frame a collective approach as individuals working together towards a shared understanding of the common good, rather than working against oppressive or exclusionary social structures. Climate Justice Action takes the opposite approach to the collective framing 'we' as those who share common political goals regardless of geographical location. Climate Justice Action sees society as "an unavoidably conflict-laden and contested space," which see ecological citizenship as the collective organizing against hegemonic power structures (Kenis, 2016, p. 960).

Kenis argues that these views of ecological citizenship are positioned antagonistically by each movements' followers. Transitioners view the politically charged and confrontational approach of Climate Justice Action as alienating and counter to their goals of achieving widespread social change (Kenis, 2016). Meanwhile those who follow Climate Justice Action view their counterparts' apolitical approach as problematic because there is no explicit confrontation with the power structures Climate Justice Action view as the causes of climate change (Kenis, 2016). Because Transitioners proscribe the common good as a shared sense of wellbeing within one locality, they exclude the plurality of different ways 'the common good' can be conceived around the world (Kenis, 2016). Climate Justice Action, conversely, view the common good as one that "distinguishes itself from and is defined in relation to other common goods, defended by other political forces" (p. 963). Climate Justice Action calls for ecological citizenship to be political because of the many contested definitions of what the common good can be. Kenis argues that in the case of Transition Towns, politicisation does happen at the level of the individual, individuals are encouraged to adopt radical ways of living outside the norms of industrial society, but politicisation does not extend to the level of the community as the community itself is not involved in political struggle.

Mollison and Holmgren's depiction of permaculture and the path towards social change share many similarities with how Kenis describes Transition Towns. Mollison and Holmgren argue social change will only occur by individuals and small communities dissociating from the political realm and creating their own sustainable society. Mollison (1988, p. 3) writes that permaculture is about learning how "enlightened self-interest

leads us to evolve ethics of sustainable and sensible behaviour…the mechanisms of mature ethical behaviour, or how to act to sustain the earth." In this respect, sustainability and social change is still focused on how individuals act and consume, rather than grappling with the politics of social justice. Collective action is positioned as individuals working together out of their own collective self-interest. On the subject of permaculture and politics, Holmgren ([2002] 2011) writes:

> Permaculture, although complementary to many top down approaches within the broad environment movement, is not primarily about lobbying government to change policies. Instead, it is concerned with facilitating individuals, households and local communities and increasing self-reliance and self-regulation. I see this process as the most potent way of reducing total environmental impact in transforming society by slowly slowing and re-organizing the production and consumption cycle. This approach is based on the recognition that a certain proportion of society is ready, willing and (most importantly) able to substantially change their own behaviour if they think it is possible and significant. This socially and environmentally motivated minority represents a leverage point for large scale change. (p. 80)

Here Holmgren states explicitly that permaculture is about changing consumption. Even though consumption is articulated at the level of communities rather than strictly individuals, power dynamics are not seen as a necessary point of contention. Political change is considered an inevitability due to the effects a changing climate and a loss of fossil fuel energy will have on industrial society and political structures. But as I have argued in the previous chapter, while peak oil and climate change may have negative effects on society, those negative effects will not be felt equally and they will not necessarily spell the end for neoliberal capitalism as a whole.

In fact permaculture's focus on individuals and small local communities feeds directly into neoliberal goals of individualizing responsibility. As Middlemiss (2014, p. 938) argues: "the displacement of responsibility to the individual or to community level is a political strategy that is espoused by both neo-liberals and grassroots environmental activists. For neo-liberals, the localising agenda fits in with their belief in a small state; for grassroots activists, it complements an emphasis on bottom-up change." Rather than go against hegemonic regimes, permaculture is positioned to work as an alternative for individuals who wish to live more sustainably. Holmgren does not question the consequences of relying on individualism, instead arguing to embrace it. He writes: "The rise of individualism in the modem world makes possible personal expression and action through lifestyle choice, even if few choose to do so in any more than superficial ways.

This empowerment of the individual provides a unique opportunity for bottom-up change" (Holmgren, [2002] 2011, p. 83). The call to embrace individualism ties into Holmgren's distrust of political systems. But by avoiding political action within sustainability movements there is a limit to what issues can be addressed and whose voices can be heard. In her discussion of individualization and neoliberal environmentalism, MacGregor (2014, p. 627) argues that: "We are invited to debate the science and the conduct of scientists rather than to critically analyze the historical forces, hierarchical power relations, and value systems that have caused, and are standing in the way of addressing, the current predicament." Discussion of power dynamics and other political issues are foreclosed because climate and energy crises are deemed to be universal. As I will discuss in the next section, the lack of engagement with politics in permaculture is a deliberate move by its creators and has consequences for how permaculture is taught and practiced.

3.2. Middle-class Ethics, Permaculture Design Courses, and Privileged Depictions of Social Change

As discussed in Chapter 1, mainstream alternative food movements in Western society are often romanticized in universalized ideals of sustainable agrarianism led by individual consumers seeking healthy food provided by local family farms (Guthman, 2008). As Rachel Slocum (2007) argues, Western alternative food movements are characterized by a middle-class white imaginary that privilege apolitical acts of sustainable consumption and production. This apolitical vision of alternative food is seen as white coded through universalized and colour-blind ideals, achievable by anyone who is willing to make the effort to learn and live by its ethics (Guthman, 2008). Excluded from this vison are critical engagements with the socio-political inequalities and circumstances that limit individuals' ability to participate in a movement that largely caters to middle class incomes and white ideals of good food (Alkon, 2008; Guthman, 2008; Slocum, 2007). Alternative food becomes more about how middle-class individuals can act sustainably without needing to engage or challenge capitalism, racism, and colonialism and their relationships with food politics. As will be discussed in this section, the implications of apolitical and middle class sustainability practices is an issue permaculture must address as well.

Baked into permaculture design is a notion of the practice as an apolitical means of addressing issues of sustainability. Holmgren ([2002] 2011, p. xv) situates permaculture as a "'positivistic' response to environmental crisis" which he interprets to mean "it is about what we want to do and can do, rather than what we oppose and want others to change." Holmgren describes this view as "ethical and pragmatic, philosophical and technical" (p. xv) but not political. If anything, a political response is viewed as a negative because it distracts individuals from developing 'positive' acts of local sustainability. Rather than looking to challenge the structural inequalities that exist in capitalist society, Holmgren sees that "[at] the most local level…accepting [personal] responsibility for our situation as far as possible, rather than regarding external forces or influences as controlling our lives" (p. 6) is the best way to care for ourselves and each other. He suggests that the "permaculture approach is to focus on the positives, the opportunities that exist even in the most desperate situation" (p. 6). This is a perspective that mirrors the views held by the Transition Town movement described by Kenis (2016) where a lack of political action bets on everyone sharing a universal set of ethics and morals on how each other should be treated and how the world works that, if acted on, will inevitably result in positive change. But as I have discussed throughout this thesis, universalized ethics typically centre white and middle-class values while disregarding the voices of others. Without a meaningful investigation of how political the inequalities that exist around the world are, permaculture risks perpetuating those inequalities in a similar way to other Western alternative food movements. This is an issue that is particularly noticeable when Holmgren argues that more political challenges to oppressive social orderings are not centred because they can "easily become a source of bitterness and disempowerment" (p. 7). He can make this claim because his focus is primarily on the middle-class, who he sees as the primary drivers of social change.

In his acknowledgement of wealth inequalities around the world, Holmgren ([2002] 2011, p. 7) states that sustainability is a problem created by the middle-class "who more than the numerically few rich, consume the vast bulk of the planet's resources." Holmgren argues that "it is the billion or so middle-class people around the world who are the engine of global destruction, rather than the numerically small elite, or the relatively self-reliant but increasingly destitute majority" (p. 83). In making this claim Holmgren centres permaculture as primarily middle-class practice. It is the middle-class who the 'engine of global destruction' and therefore have the largest potential for

enacting his vision of social change. Not only does Holmgren fail to question the role of the 'numerically small elite' and their influence on global affairs, he also erases the many people living in poverty who do not fit his categories of elite, middle-class, or self-reliant majority. As he sees it, middle-class with their high energy lifestyles have the largest potential for enacting change. But as Guthman (2008) and Slocum (2007) argue, focusing on the middle-class quickly turns alternative food spaces into spaces of privilege and whiteness. Rather than address the needs for culturally relevant food, the inequalities of who has access to food, or who provides the labour to produce food, middle-class values cater to qualities associated with whiteness such as the cleanliness of market spaces, the selection of healthy food options, and the commitment to environmentally friendly growing techniques (Guthman, 2008; Slocum, 2007). Histories of difference and inequality are erased in favour of universalized and colour-blind notions of what alternative food should be (Guthman, 2008; Slocum, 2007). In line with other forms of Western alternative food, Holmgren's caring for people becomes less about asking whose needs are met and is more about focusing on how a middle-class individual can meet their own needs more sustainably. This view works for Holmgren because his vision of social change for permaculture is first and foremost focused on energy descent, a process driven by individuals and small communities changing their consumption patterns. Holmgren's focus on the middle-class as the driver of social change, and the issues with framing social change in this way, becomes especially apparent through permaculture design courses (PDCs).

Holmgren ([2002] 2011, p. xx) asserts that PDCs have "been the prime vehicle for permaculture inspiration and training world wide." Massicotte and Kelly-Bisson (2019, p. 581) refer to PDCs as "the principal sociopolitical strategy of the permaculture community in Canada to transform local food production practices." Considering the importance put on PDCs in the dissemination of permaculture, their structure and focus play a large role in who is likely to engage with permaculture and how the practice will be perceived and implemented. PDCs were a recurring topic brought up in my interviews. The main issues brought up by those I interviewed were the structure and cost of PDCs themselves. While there are no strict rules for what PDCs must conform to with what they must include or how they are taught, they still predominantly adhere to the same structure and scope. One interviewee who is a permaculture instructor said:

> I will say that another limitation fully on its own is that often permaculture courses are offered in standard structure of a 2-week, 72 hour course that is quite expensive. People have to take two weeks off of work, maybe travel somewhere, and also pay for accommodations (H. Roessler, personal communication, Feb 27, 2020).

Courses that are held at remote locations, for long durations, and cost over $1000 dollars play a big part in who can actually learn permaculture design. Interviewees stressed the difficulties in being able to run PDCs that were accessible to the public while also being able to support the people running them who need to make a living themselves. Some said they offered discounted or free spots for people who could not otherwise attend and demonstrated the desire to continue to build that capacity in the future. Others spoke of how they offer PDCs in academic institutions, which allows for people to access PDCs at rates supported by the tuition students already would have needed to pay for their degree programs. Others called for the need of grant based incentives that would allow for more free and reduced cost programming. Overall there was a recognition that the structure and costs associated with PDCs can be a limiting factor in who has the ability to attend the courses. What Massicotte and Kelly-Bisson (2019) bring to light is that PDCs themselves, and their central role as the main way to learn and engage with permaculture, are a part of a tension for permaculture and its ability to be socially transformative within the confines of capitalist society.

Massicotte and Kelly-Bisson (2019) document the shift of permaculture organizing in eastern Ontario, which started as a desire to create social change inspired by other anti-colonial and anti-capitalist social movements, but was hindered by practitioners who fell back on market based action. Massicotte and Kelly-Bisson argue that a major component of this failure was because of the central role of PDCs in that permaculture community. The main issue with PDCs were that they “[emphasized] the importance of professional expertise and its application through individual entrepreneurship mostly on private property” (Massicotte and Kelly-Bisson, 2019, p. 583). Permaculture organizing in eastern Ontario was also done primarily by white, middle-class individuals seeking to disengage from their current jobs and practice sustainable urban food production. Massicotte and Kelly-Bisson argue that these “permaculture communities composed of middle-class practitioners [reinforced] neoliberal market relations in their social relationships” (p. 583) through the implementations of expensive PDCs.

Massicotte and Kelly-Bisson suggest that rather than promoting broader societal change, “the embeddedness of trainers within a market economy and a deeply consumerist and individualist society…[raised] important challenges and dilemmas for permaculture advocates” (p. 584). Organizations that began as people coming together under a shared belief in sustainability and social justice, whether they had completed a PDC or not, “became oriented around practitioner “technical” knowledge and expertise rather than its initial commitment to an emancipatory political vision” (p. 587). More political visions of permaculture that included “opposition to capitalism, racism, and colonialism, through permaculture projects with impoverished and racialized communities” (p. 586) were deemed “too radical [because they] would exclude some people who did not share such political views” (p. 587). The depoliticization of permaculture organizing in eastern Ontario occurred at the same time that membership in these organizations “became primarily composed of those who had completed a PDC, which put pressure on non-PDC practitioners to take the course in order to be fully recognized within the community” (p. 587). No longer brought together by shared political views “the eastern Ontario community dissolved because organizers became too busy pursuing permaculture initiatives in a diffused, individual, and private manner” (p. 587). Here we see the limitations of Holmgren’s focusing on middle-class individuals as agents of social change.

Massicotte and Kelly-Bisson argue that what they observed in eastern Ontario “resembles the initial vision of Mollison and Holmgren for individuals’ withdrawal from industrial society rather than [a] social justice vision” (p. 587). Rather than developing more just means of living, permaculture became about providing PDCs as a business in order to disseminate knowledge on permaculture design. As I described earlier in this chapter, Holmgren is quite clear that he does not view political action as the appropriate means of achieving social change. Holmgren believes that it is through the well-educated middle-class changing their individual behaviours that the greatest social change will occur. But it is difficult to imagine how individuals who are already well off under current economic paradigms will make the sacrifices necessary to confront oppressive social orderings, like neoliberal capitalism, especially when social change as described by Holmgren is foremost focused on apolitical acts of sustainability. As Massicotte and Kelly-Bisson put it, those “aspiring towards post-capitalist alternatives within a white, middle-class context are prone to fall back upon reproducing market-

based social relations, because of their relatively privileged position…[that] affords them the ability to conform to market relations rather than having to engage in political resistance like those who are excluded from neoliberal capitalism" (p. 587). For white and middle-class individuals, capitalist markets are not seen as the issue they need to address. Permaculture is not about surviving and transforming present day economic systems, it's about devising new relationships with nature that are more sustainable. As discussed in the previous chapter, the major drivers of permaculture's visions of social change come from a belief in future apocalyptic scenarios associated with climate change and peak oil. In situating permaculture as a solution to future problems, having widespread adoption of its principles becomes as important as how well those principles are applied. But by seeking widespread application of its design principles, permaculture risks becoming subsumed within neoliberal environmental management regimes.

In Rebecca Lave's (2012) analysis of the political ecology of stream restoration in the United States she outlines the role of neoliberalism in environmental management regimes that provides important comparisons to permaculture design. Her analysis is focused on the work of David Rosgen, his stream restoration methodology Natural Channel Design (NDC), and its rise to the de facto method for stream restoration in America. Much like permaculture design, NDC is primarily taught outside of universities in the form of four short courses training individuals "a purportedly universally applicable system for classifying and restoring stream channels" (p. 1). The practice has become so popular in the field of stream restoration that it is actually a requirement for consultants to have in order to bid on projects. Lave makes the point that even "[professors] and full-time consultants with decades of experience cannot bid on many projects because they have not studied their own subject as taught by Rosgen" (p.2). This is despite heavy criticisms of the validity of the methodology that suggest it could be doing more harm than good (Lave, 2012). Lave argues that the success of Rosgen's NDC program at becoming the main way to conduct stream restoration despite ongoing debates around its validity was no fluke and was "an early manifestation of the profound restructuring of scientific production under neoliberalism" (p. 3).

In her analysis of NDC, Lave provides "three key shifts that reflect the rising influence of neoliberal philosophies: the increasing privatization of knowledge claims…, a shift toward applied research to meet market and agency demands, and the creation of metrics to enable market-based environmental management" (p. 103). While it would be

difficult to argue that Mollison and Holmgren set out to achieve a market-viable design methodology when first developing permaculture, the structure and content of PDCs and the apolitical vision of permaculture as a whole makes it easily consumed by mainstream society and easily adaptable into neoliberal environmental management. Permaculture design was created outside of the university seeking to solve real world problems, much like NDC. PDCs teach a standardized set of ethics and principles that Holmgren attests are universally applicable, much like NDC. Permaculture design also caters primarily to white, middle-class individuals who as described by Massicotte and Kelly-Bisson, are likely to remain embedded and apply what they learn in neoliberal capitalist markets.

Considering the similarities between NDC and permaculture design and the conditions permaculture is primarily practiced, it is not hard to imagine permaculture design being similarly adopted as a tool for environmental management. That is in the fact the goal of Akhtar *et al.*'s (2016) study titled *Incorporating permaculture and strategic management for sustainable ecological resource management*. Akhtar *et al.*'s analysis sees permaculture as useful for developing "an integrated policy management tool that can be used by policy makers for developing and monitoring progress of the policy [related to environmental and resource management]" (p. 37). They see permaculture as "an innovative manner of living, resulting as of a vision of individuality in perspective within a system of interactions and of individual development in service to humanity, as our own resilience" (p. 37). Rather than providing an alternative approach to social organization, permaculture's apolitical nature makes it an easily adaptable sustainability metric in existing neoliberal power structures that seek to offload as much responsibilities on to individuals as possible.

There are similarities between the depoliticization and marketization of permaculture and the situation Guthman describes with the rise of organic food in California. As outlined in Chapter 1, Guthman (2004) documents the transition of a primarily counterculture based organic agriculture movement in California in the 1960s and 70s to one that became embedded in the same industrial food paradigm it was originally positioned in opposition to. She argues that this transition occurred through the depoliticization of the movement driven by growers associations seeking access to markets and the legitimacy associated with private and state certifications. Much like what was described by Massicotte and Kelly-Bisson, Guthman describes early organic farmers as primarily white, with middle-class urbanites originally seeking alternative

means of producing food who became beholden to markets as the practice became more mainstream. Anti-capitalist and other politically charged sentiments were disregarded in order to attract more conventional growers, and their money, to joining organic growers associations and adopting organic growing methods. As organic agriculture became less political and the methods became more standardized the practice was easily folded into existing neoliberal markets and policies, leaving any pre-existing inequalities, such as migrant labour, intact. Guthman's work raises an important question for permaculture: How do you practice meaningful social change in capitalist society?

The ability to practice permaculture within the confines of capitalist society was a tension that was identified amongst my interviewees. As one interviewee put it:

> You know we have this dominant economic paradigm right now that for so many it is hard to abstain from. In many ways permaculture works best when you can completely abstain. There is a way in which I see it that a permaculture lifestyle is one that is very resilient to things like climate change and shocks in energy, water, and food. It is in of itself a disaster preparedness approach. But in a way, when all is well and the market is acting the way it does there's the pressure to run the rat race of the capitalist society, then permaculture can be almost uneconomical. Like it can be an irrational lifestyle choice when juxtaposed against current cheap food. Now I still choose to keep a heavy chunk of my life in that world but it's more because of that need to be resilient and have those skills for when the paradigm shifts (T. Krawcyzk, personal communication, March 9, 2020).

When you have the ability to fall back on conventional income streams and are privileged enough that that income will be reliable and provide enough for you to live comfortably, why would you devote so much to a practice that costs so much time, effort, and money? This is even more the case if you do not have the social and economic security to fall back on. This is especially an issue considering the main focus of permaculture is that it is trying to adapt human society to future apocalyptic scenarios and paradigms shifts. Trying to practice permaculture without an investigation of neoliberal logics of efficiency and individualized responsibility leaves the design methodology, as this interviewee put it, 'uneconomical' because permaculture is not directly targeting those economic systems in the present. The same interviewee went on to say:

> Change is expensive and I would say it is a challenge for anybody to change what they are doing and it's expensive in time and money. So that's the negative side of it, which is not so much to do with permaculture but to do with the general paradigm. So you kind of need to have a bit of space in your life to be able to make change if assuming this is a radical change, starting to grow your own food and recycling water and all that. So I would say that's where permaculture has got some work to do because it's not that accessible to people who can't afford to make that kind of change (T. Krawcyzk, personal communication, March 9, 2020).

Permaculture has been positioned as a design methodology to help after a climate change or peak oil induced paradigm shift, not help be a transitional force in of itself. By focusing so much on individual personal responsibility, permaculture becomes a middle-class space predominately because that is who can afford to make the changes permaculture calls for. The majority of my interviewees brought up that the primary group interested in permaculture were older middle-class individuals who had the economic means and the time to devote to both attending a PDC and having property of their own to create permaculture spaces. One interviewee demonstrated concern over how people end up applying permaculture after completing a PDC, saying:

> I think that it is hard because there is a real focus on, even though there is this understanding of the social or economic inequalities within the discipline or conversation of permaculture, I think that in practice there has been a real focus on entrepreneurship in permaculture. So it's this sort of individualized approach and this real push forward towards work and success in our little permaculture business. And I'm not critiquing that, I'm just saying it's interesting how a lot of that seems to be the focus after people leave (H. Roessler, personal communication, Feb 27, 2020).

How easily people can learn permaculture and then apply its principles without confronting their market-based entrepreneurial lifestyles suggests that there is much work to be done within permaculture before it can achieve any sense of meaningful social change. This was also an issue brought up by some of my interviewees who stated they have been looking for alternatives to the standard teaching methodology, including centring community based projects, offering free courses, and focusing on the application of permaculture outside of market-based applications.

While permaculture design may be centred on holistic, counter-culture approaches to social change, its creators' distrust of politics and focus on apolitical acts of sustainability prevent permaculture from being an effective means of achieving social change on its own. Rather than the all-encompassing counter-culture design

methodology Mollison and Holmgren had originally aimed for, permaculture design is in a similar position to many other forms of Western sustainability and alternative food practices. The focus on apolitical action by primarily white, middle-class consumers and the universalized design methodology make the practice easily adoptable by neoliberal capitalism, much like Guthman (2004) described with organic agriculture in California. If permaculturalists want actual social change to be the focus of their practice, not just sustainability for those who can afford it, much more work needs to be done to ensure social justice is a main priority. While not an easy or straightforward task, applying social justice more directly to permaculture design has been done and there are plenty of lessons to be learned from other alternative food paradigms, such as food sovereignty and food justice, which put social justice as the forefront of their causes.

Chapter 4.

Conclusion - Who is Permaculture for? Sustainability, Social Justice, and Radical Social Change

Looking at Mollison and Holmgren's writing alone, it becomes difficult to see how permaculture can achieve Roux-Rosier *et al.*'s (2018) imaginary of the practice as an intersectional social movement. Mollison and Holmgren are adamant that permaculture is for "anybody who can garden" (Mollison, 1979, p. 1) but their vision of social change privileges apolitical, individual sustainability over organized political action. Mollison (1979, p. 142) sees "no other solution (political, economic) to the problems of man [sic] than the formation of small responsible communities involved in permaculture and appropriate technology,…the only response is to gather together a few friends and commence to build the alternative, on a philosophy of individual responsibility for community survival." Holmgren ([2002] 2011, p. 69) outright says: "Permaculture is for those who already understand or sense the reality of transition and descent and want to give practical and integrated expression to that reality, whether the rest of society is ready or not to do so." How can permaculture be available to everyone while also being exclusive to those awakened to the threat of a coming energy apocalypse and who have the capacity to enact Mollison and Holmgren's specific vision of social change? When that threat is largely conflated with a Western (white) perspective of crisis, how can we expect permaculture's vision of social change to benefit everyone?

My argument here is not that permaculture cannot be used for social justice, but that the way that Mollison and Holmgren present permaculture fails to make social justice a priority. Returning to the discussion of permaculture's vison of social change through energy descent and crisis of Chapter 2, social justice is seen as a by-product of sustainable society. Mollison (1988, p. 506) argues: "First we must learn to grow, build, and manage natural systems for human and earth needs, and then teach others to do so. In this way, we can build a global, interdependent, and cooperative body of people involved in ethical land and resource use." Mollison is convinced that because *he* views permaculture as the only way forward that everyone will also believe the same, or at the very least they will have to adopt it if they are to survive. But social justice requires more

than an ethic of sustainability and good intentions. As I discussed in Chapter 3, a focus on middle-class individual and small communities within Mollison and Holmgren's writings favour acts of personal and local sustainability over confrontations with hegemonic power dynamics associated with colonialism and neoliberal capitalism. The lack of engagement with these power dynamics allows for the primarily middle-class practitioners to easily integrate what they have learned from permaculture into their existing market-based lifestyle. These individuals and communities are prepared for an eventual need to adapt to energy and climate crises but not concerned with directly confronting those crises causes.

In this thesis I have focused on the dominant tendencies within permaculture as characterized by the writing of Mollison and Holmgren, but it is important here to reiterate that permaculture exists as more than the writings of its cofounders. As Roux-Rosier *et al.*'s (2018) highlight with their three imaginaries of permaculture design (a set of design principles, a set of environmental ethics, and an intersectional social movement), permaculture can exist with many different focuses. There is also an ongoing debate by some permaculturalists of what the practice's focus should be. On one side there is a desire to situate permaculture as a design science and on the other a desire to view permaculture as a social movement that needs to account for its historical roots and the social locations of its practitioners (Ellis, 2019; N. Montgomery, personal communications, May 5, 2020). Proponents of permaculture as a design science desire "it stay de-politicized and professionalized as a system of ecological design" (Ellis, 2019, para. 1). The desire to situate permaculture as foremost a design science mirrors many of the qualities Lave (2012) uses to describe Natural Channel Design and would solidify permaculture as the middle-class practice Mollison and Holmgren have described it as. Ellis (2019, para. 4) a permaculturalists who seeks to view the practice as oriented towards social justice, argues that permaculture's "focus on professionalization, land ownership, and entrepreneurship…tends to reinforce sexism, racism, and class bigotry and to commodify practices, skills, and knowledges that should be uncommodifiable." Ellis argues that there is a need to put social justice, decolonialism, and anti-capitalism at the forefront of permaculture design, making it a practice that is truly accessible to all. The fact still remains that despite a desire for a more socially just permaculture, the practice's dominant tendencies are still geared towards apolitical action and the privilege

attached to the primarily white and middle-class practitioners complicate how permaculture can contribute to social change.

As Alkon and Cadji (2018) argue, even when social justice is at the forefront of a food movement, it can be thwarted by well-meaning individuals with privilege pursuing sustainability. Their work examined food justice organizations centred on supporting Black farmers, urban sustainability, and community food programs in Oakland, California. What they found was that the work of these organizations actually had detrimental effects on low-income and racialized neighbourhoods, attracting privileged, white, middle-class individuals who wanted to pursue the aesthetics of community food and local sustainability. Alkon and Cadji attribute this to green gentrification, which they describe as "the process through which the elimination of hazardous conditions or the development of green spaces is mobilized as a strategy to draw in affluent new residents and capital projects" (p. 1). Even though the food justice organizations Alkon and Cadji studied were created to support Black farmers, the ones doing the consuming were "predominantly white and in their twenties and thirties, although generally more racially diverse and younger than at other local farmers' markets, which [were] almost entirely white" (p. 9). The authors attribute this dynamic to activists who focused more on meeting the sustainability ideals of affluent white individuals who could pay more, which supports farmers but alienates residents. Alkon and Cadji argue that the even though activists designed spaces "to address the rampant food insecurity among low-income, largely African American, residents…because the spaces they [created] so deeply [resonated] with new, more affluent, transplants to the neighborhood, they become coded as white" (p. 12). White, privileged individuals pursuing sustainability need to be aware of the influence they have on spaces and the negative impacts they can have on marginalized communities.

To pursue effective social justice in alternative food it is not enough to have an ethic of personal sustainability and engage with people who share your views. As Massicotte and Kelly-Bisson (2019) showed, a permaculture movement directed by white, middle-class individuals will struggle to achieve social change as those individuals have the privilege to fall back on market-based means of social reproduction. In order to develop long term and socially transformative action permaculture practitioners need to engage with and follow the lead of marginalized and oppressed communities (Massicotte & Kelly-Bisson, 2019). Massicotte and Kelly-Bisson suggest permaculture instructors

take “an explicitly political approach to permaculture education towards social change; one that is confronting systems of neoliberal capitalism and colonialism and which is respectful of the diversity of experiences” (p. 591). Rather than imposing permaculture and PDCs as the way to pursue social change, Massicotte and Kelly-Bisson argue for an approach that puts marginalized communities first, with the advice that permaculturalists who are privileged take “direction from [marginalized communities’] actions opposing industrial agriculture and transform the concept of permaculture itself to serve a broader counter-hegemonic praxis” (p. 591). To demonstrate this idea, Massicotte and Kelly-Bisson use the example of land ownership and struggles over access to land, particularly those led by food sovereignty movements.

Massicotte and Kelly-Bisson argue that when it comes to land, permaculturalists will “confront material and institutional barriers in their attempts to transform the dominant agri-food system, especially if they continue to organize as mostly white, middle-class people independently of larger social movements” (p. 592). As in the case of organic agriculture in California, existing regulations and competition with conventional growers would be more likely to water down permaculture’s more socially transformative tendencies than change the agricultural system in a meaningful way. Instead, Massicotte and Kelly-Bisson suggest permaculturalists use the struggle of access to land as an opportunity to work with existing groups “facing land struggles such as Indigenous peoples, by reimagining what PDCs could resemble if shared by emancipatory forces and existing movements, including the National Farmers Unions or Union Paysanne” (p. 592). The National Farmers Union and Union Paysanne are two food sovereignty-based organizations in Canada that centre anti-corporate control of food systems from the perspective of rural farmers while also being connected to a network of Indigenous and peasant farmers around the world (Desmarais & Wittman, 2014). Indigenous food sovereignty specifically is also heavily focused on cultural renewal, the occupation of traditional territory, and other decolonial action (Daigle, 2017; Desmarais & Wittman, 2014). Massicotte and Kelly-Bisson do make the point that “[such] structures of exploitation have a much greater impact on the livelihoods of Indigenous peoples” (p. 592). But by seeking out those partnerships, permaculturalists are better able to leverage their privilege and contribute to the well-being of those exploited under colonialism and neoliberal capital.

One of my interviewees, an active participant in permaculture communities around Southern Vancouver Island, described his own experience navigating his privilege and applying permaculture design towards goals that are more closely aligned with social justice. He described that at one point he became interested in developing his ability to graft fruit trees. He shared:

> In my first year I grafted 30 of them and them some friends and I grafted more, like 1000. We were excited, we gave a bunch away and we did workshops on grafting. We got a little bit of funding and we were excited to share this thing that I though was really cool. Like you can just propagate plants. You can clone thousands of different apples and preserve heritage apples. And isn't it so nice? It was really fun and we gave away a lot of fruit trees and I'm sure they're alive in various people's backyards (N. Montgomery, personal communications, May 5, 2020).

His passion for grafting gave him the ability to share what he had learned within his community. With that in mind he also became wary of who was participating in his workshops and who were benefiting from all of the newly grafted trees. He continued:

> But one of the patterns I started to notice is who comes to a workshop on grafting? Well it's older middle class homeowners, right? Because they're the ones who have not just the time but the property (N. Montgomery, personal communications, May 5, 2020).

Having recognized that his initial plan was not addressing his and his community's goals of social justice, he pivoted his actions to include local Indigenous communities and their needs in relation to his project. He realized:

> …we were trying to think in terms of what are the different movements and conversations we want to be happening and how could we create an event that brings those different communities into contact. Now that we recognize that the main people who want to buy plants are actually middle-class white people, well that's going to be the people, that's going to be our source of revenue basically. Then we'll give the money to Indigenous folks…we're still sharing what we want to share but we were able to think about flows and who's benefiting and who has the capacity to buy and what communities do we want to be in conversation with (N. Montgomery, personal communications, May 5, 2020).

In this example, permaculture techniques and perspectives were applied beyond the confines of a single community to account for the differences and needs of multiple groups. But that revelation required looking beyond the immediate needs and desires of this interviewee and his personal community and going beyond the immediate realm of permaculture design.

While permaculture does advocate for taking into account the needs of different community members, my interviewees pointed out that that kind of action typically relies on traditions other than permaculture design. In these situations permaculture was one tool of many for organizing in more collective and equitable ways. An interviewee suggested that other traditions such as anarchism, Marxism, feminism, and Indigenous resurgence are much better equipped at accounting for the dynamics of power within society (N. Montgomery, personal communications, May 5, 2020). It is from communities like these that already centre social justice with regards to inequality and difference, such as food justice and food sovereignty, that permaculturalists need to engage with and learn from if they are to move towards more equitable and transformative forms of social change. Permaculture design still has much to contribute to discussions of building more sustainable futures. But those contributions can be overshadowed by tendencies that reassert, rather than confront, present day inequalities.

Permaculture as described by Mollison and Holmgren exists as a means toward energy descent – that is its drive and the main focus of its ethical and design principles. Permaculture does not centre anti-capitalist or anti-colonial action because it is trying to fix a sustainability crisis that it presumes is only related to how people consume, which is heavily influenced by a level of pessimism, disbelief, and bitterness towards political action. Permaculture does not ask for a critical investigation of the causes and drivers of sustainability or other social issues; it is focused on providing the means to live more sustainability because inequality is attached to wasteful technologies and industries not the overarching structures capitalism and colonialism that fuel them. Permaculture's ethic of caring for people in this respect means caring for yourself and those around you who share your vision of a more sustainable future. Considering how even food movements that centre justice are susceptible to co-optation and gentrification, what stops permaculture from being the same? Without a clear political basis and its ethical drive that is similar to the universalized, privileged, and white coded tendencies of other Western alternative food practices, permaculture does not provide a clear path towards social change on its own. Permaculture is a set of tools, a design practice for how to live more sustainability. For more political action that acknowledges and confronts oppressive and exploitative structures of power, permaculture is ill equipped. Rather than focus solely on building those futures, permaculturalists would have much to gain by working with or as a part of food justice, food sovereignty, and other movements

seeking to address inequalities, exploitation, and power in the present day. An interviewee who also works with Indigenous communities and their food systems shared:

> I am one of those people who, yes I am very immersed in permaculture and yes I do a lot of the work in my life from that, but that's just one tool. Like it's one tool in the toolbox that we're using to create a paradigm shift. (H. Roessler, personal communication, Feb 27, 2020).

For her, permaculture was a valuable tool for understanding the interrelationships that exist between people and nature as well as the many different ways those interrelationships can be articulated. It was situational, useful for her but not something that should be imposed on everyone. Permaculture was not a universally applicable design methodology as Mollison and Holmgren describe, but a particular way of many for viewing how to enact social change.

In this thesis I have provided a critical look at permaculture's major inspirations and core logics as a means of analyzing how the practice envisions social change. This critical analysis was not done to discredit permaculture, but to bring the practice in conversation with critical literatures that have come about since its initial creation and that point to permaculture's limitations when it comes to social change. As I have discussed, permaculture's main inspirations are peak oil, the Gaia hypothesis, and a narrow vision of Indigenous practices – all themes that are fed by and feed into visions of apocalyptic futures of energy scarcity and climate change prescribed upon us by a vengeful planet. In order to avoid these apocalyptic futures, or at the very least survive them, permaculture, as described by Mollison and Holmgren, implores us to take responsibility for our futures and become self-reliant individuals through the adoption of ecologically sustainable living. Mollison and Holmgren present their permaculture as universal in scope and application. But in doing so they replicate the exploitative power dynamics of colonialism, and capitalism by overlooking the particularities and differences that exist amongst people around the world. Instead they continue to centre white, middle-class values, voices, and bodies as the agents of social change.

Returning to my initial inspiration for this research, I still have concerns surrounding the broader applicability of permaculture towards social change. While my interviews have shown that social change and the limitations of permaculture are certainly on the minds of permaculturalists, the practice itself is still influenced by similar tendencies to other Western forms of sustainability and alternative food. Without a

deeper investigation of what exactly permaculturalists mean when they characterize permaculture as a design philosophy for anyone, permaculture risks perpetuating the same Eurocentric and white coded values found in similar Western alternative movements that are just as likely to be co-opted by capital as they are to instill change. In this regard, caution needs to be taken when situating permaculture design as *the* solution for global sustainability crises. Suggesting that permaculture is an all-encompassing design practice with universal application becomes contradictory when the ideology that structures its design practices remains rooted in Western paradigms of universalized knowledge. Permaculture design, at least in its foundational texts, does not ask for a critical investigation of the causes and drivers of ecological crises or other social issues; it is only focused on providing the means to live more sustainability. This does not mean that permaculture design *cannot* have broad applicability and be a helpful tool for addressing issues of sustainability and social change. As articulated by some of my interviewees, there needs to be a recognition of permaculture design as one of many different philosophies for how humans can grow food, relate to nature, and develop more complex non-human relationships. Rather than view permaculture as an all-encompassing design methodology, there needs to be an acknowledgement of its limitations and how it can be positioned as a means of synergizing with other social movements and struggles. At the same time, there is also a need to recognize the privilege many permaculturalist hold, such as myself, and the power imbalances that privilege can bring into social justice spaces. While permaculture design may provide useful tools for envisioning and creating meaningful social change, activists and academics who seek to apply those tools should be conscientious of the challenges and limitations that are also a part of the practice.

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Appendix

Interview Questions

1. What is your familiarity and background with permaculture design?

2. What is permaculture to you? How would you describe your own permaculture practice/engagement with permaculture and what attracted you to permaculture in the first place?

3. What sets permaculture apart from other agricultural practices such as industrial agriculture or organic agriculture?

4. What are some of the strengths or challenges you have noticed in permaculture design?

5. Do you consider permaculture to be a socially transformative practice? Something that leads to social change. If so how?

6. Do you see permaculture being effective at addressing social issues other than environmental and sustainability ones? If there are limitations, how do you think they could be best addressed?

7. Who do you see permaculture benefiting the most? Who is permaculture for?