

Article

(Re-)Defining Permaculture: Perspectives of Permaculture Teachers and Practitioners across the United States

Kaitlyn Spangler ^{1,*} , Roslynn Brain McCann ² and Rafter Sass Ferguson ³¹ Department of Environment and Society, Utah State University, Logan, UT 84322, USA² Department of Environment and Society, Utah State University Moab, Moab, UT 84532, USA; roslynn.mccann@usu.edu³ Food and Environment Program, Union of Concerned Scientists, Washington, DC 20006, USA; rferguson@ucsusa.org

* Correspondence: kspangler@aggiemail.usu.edu

Abstract: The solutions-based design framework of permaculture exhibits transformative potential, working to holistically integrate natural and human systems toward a more just society. The term can be defined and applied in a breadth of ways, contributing to both strengths and weaknesses for its capacity toward change. To explore the tension of breadth as strength and weakness, we interviewed 25 prominent permaculture teachers and practitioners across the United States (US) regarding how they define permaculture as a concept and perceive the term's utility. We find that permaculture casts a wide net that participants grapple with in their own work. They engaged in a negotiation process of how they associate or disassociate themselves with the term, recognizing that it can be both unifying and polarizing. Further, there was noted concern of permaculture's failure to cite and acknowledge its rootedness in Indigenous knowledge, as well as distinguish itself from Indigenous alternatives. We contextualize these findings within the resounding call for a decolonization of modern ways of living and the science of sustainability, of which permaculture can be critically part of. We conclude with recommended best practices for how to continuously (re-)define permaculture in an embodied and dynamic way to work toward these goals.

Keywords: permaculture; definition; commodification; regenerative; Indigenous; reconciliation



Citation: Spangler, K.; McCann, R.B.; Ferguson, R.S. (Re-)Defining Permaculture: Perspectives of Permaculture Teachers and Practitioners across the United States. *Sustainability* **2021**, *13*, 5413. <https://doi.org/10.3390/su13105413>

Academic Editor: José Manuel Mirás-Avalos

Received: 12 April 2021
Accepted: 7 May 2021
Published: 12 May 2021

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2021 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

Sustainability is broadly accepted as the capacity to “meet the needs of the present without compromising the ability of future generations to meet their own needs” [1,2]. As a concept and transdisciplinary framework, sustainability emerged in response to concerns about the broad societal and environmental impacts of a global industrialized society, including climate change, widening socioeconomic inequities, and spiraling resource consumption [3–5]. Permaculture is an international network with a solutions-oriented approach to sustainability that aims to “design and develop sustainable communities in harmony with natural ecosystems” ([6], p. 720).

Founded in 1975 in Australia, permaculture has experienced an increasing, broadly distributed international presence in recent decades [7]. One of the most distinctive aspects of the permaculture network is its organization around the design system after which it is named. Permaculture design is a framework converging on notions of (1) using nature as a guide, (2) thinking holistically, (3) being a solutions-based cooperative design system, and (4) creating abundance and harmony [8]. Practitioners and scholars have described it as a catalyst toward promoting transformative pedagogy for education [9], fostering learning communities of grassroots practitioners [10], and offering a holistic integration of the natural world and its relationships into modern ways of life and thought [11,12]. Especially in contexts beyond the United States (US), permaculture thought and practice contribute to the development of alternative agri-food networks [6,13–15], enabled by its

emphasis on community knowledge, inclusion of Indigenous practices, and avoidance of one-size-fits-all approaches. As a note, we use the term “Indigenous” throughout the paper as a broad placeholder term for “place-based human ethnic cultures that have not migrated from their homeland” [16] and as a way of distinguishing these nations, peoples, and communities from settlers and colonizers [17].

Yet, due in part due to its broad range of application, permaculture resists concise definitions, making communication of core ideas difficult. As Macnamara (2019) states, “There are as many permaculture definitions as there are permaculturists. Each person has developed their own ways of using permaculture and their relationship to it” ([8], p. 1). Conceptual definitions have long been obscured by the proliferation of multiple, divergent meanings, creating confusion over measurement and application [18]. Akin to critiques of the term agroecology [19,20], this ambiguity over what the term means presents confusion and complexity on how to use it.

The conceptual and practical breadth of permaculture has been highlighted as both a weakness and a strength. Permaculture concepts bridge localized experience with broader sociopolitical philosophies in ways that allow practitioners to imagine alternatives to the conventional human-nature relationships of the modern era [21]. Each of its divergent definitions can serve a specific and meaningful purpose toward re-thinking and re-imagining how we live within, perceive, and emulate our natural worlds [11]. Nonetheless, resistance to succinct definitions can obscure its purpose and create a sense of exclusivity, leading some to argue that the permaculture movement should stick to practical matters of land use rather than “spread itself too thin” [22]. Furthermore, broad conceptualizations of permaculture may gloss over the differences in scale and impact between individual lifestyle practices and social movements; while it can inspire people to enact sustainable changes in their daily lives, the importance of these actions may be detached from a larger political context or goal [23]. The low level of institutionalization and organization in the permaculture network contrasts with other grassroots movements that include a focus on human–nature relationships and practices, such as the international peasants’ agroecological movement, La Via Campesina [23].

In this paper, we build upon prior work that unpacks the ways in which permaculture is defined [7,10] with an eye to exploring diversity and tension in participant conceptualizations of permaculture. To this end, we interviewed prominent permaculture teachers and practitioners who are actively engaged with permaculture across the US regarding how they (1) define permaculture as a concept and (2) perceive the term’s current and future utility. Through an in-depth qualitative approach, we sought to better understand how those who embody and teach permaculture principles navigate and perceive the breadth of the term, as well as the momentum it has garnered in their own work. While permaculture is a globally practiced framework, the US has an active and extensive permaculture network that has received relatively little investigation of this type. Results are presented through the voices and perspectives of the participants and are then contextualized within wider conversations in the permaculture and sustainability literature.

2. Materials and Methods

2.1. Data Collection

We conducted in-depth, semi-structured interviews with participants based on the following criteria: They (1) teach at a permaculture institute, (2) have taught and/or are still teaching the permaculture design certificate course, and/or (3) are well-known practitioners in their field. People were sampled through both purposive and snowball sampling [24] until data saturation was reached. The final 25 participants (five women and 20 men) represented a range of geographic areas across the US, including 11 different states (and the District of Columbia) and 22 distinct permaculture organizations. Of the 25 participants, one was Indigenous (specific Tribal affiliation omitted for anonymity), two were Mexican American, one was Lebanese American, and the remaining 21 participants were white. The study design was approved by the Institutional Review Board (IRB), and the primary

interviewer took several steps to reduce bias and improve credibility during the interview process. First, they acknowledged (both in journaling and to participants) their involvement with permaculture, namely obtaining a permaculture design certificate, running a permaculture initiative at a major Land Grant institution, and serving on the board for the Permaculture Institute Inc. They also used techniques such as bracketing [25]—parsing out the interviewer’s feelings from participant perspectives—in their journaling practice.

The semi-structured interview process allowed for unplanned topics to emerge and for the interviewee to lead the conversation whenever possible, fostering mutual respect and engagement [26]. Each interview lasted between 30 minutes and 1.5 hours, depending on participants’ availability, and took place at either their home or place of work. The interviewer followed a predetermined question guide, ensuring that all questions were asked in each interview. Questions relevant to the analysis of this paper included: (1) What does the term permaculture mean to you; (2) What do you think about the term; (3) What do you think of the permaculture community as a whole; and (4) Do you see permaculture as the right thing moving forward? Following consent, each interview was audio recorded.

2.2. Data Analysis

We used qualitative thematic analysis to assess the interview data. Using the automated Otter.ai software, we initially transcribed each recording and then manually checked each transcript for quality and accuracy. Finalized transcripts were qualitatively coded using ATLAS.ti – a software that allows for efficient code development and organization. We developed codes through open and closed coding [27], which included creating a preliminary coding scheme based on the interview and transcription processes and allowing emergent themes to be added throughout subsequent coding. One researcher led the coding process, but codes and code themes were clarified and reassessed among the two main group members [28]. The codebook was updated until consensus was achieved across researchers [29], including themes such as (1) definitions of permaculture, (2) perceptions of the term, (3) perceptions of the permaculture community, and (4) the future of permaculture. Once coded, we summarized each code across interviews (obscuring the identity of each respondent), noted repetitive patterns and diverging opinions, and pulled out illustrative quotes whenever possible.

3. Results

The results of this qualitative analysis are presented through three main themes identified through the coding and interpretation process: scope, scale, and constituency. We use scope to encompass themes relating to content: What is permaculture about? Scale refers to themes of level and range: What is the extent of change at which permaculture is aimed? We use the term constituency to capture themes of identity and participation: Where is permaculture from, and who is permaculture for? Across these themes, we explored divergence in how participants answered these questions, pointing toward ways in which the breadth and complexity in permaculture definitions operate as a strength and weakness in different contexts. These findings are then discussed and contextualized in the following sections.

3.1. Scope: What is Permaculture About?

All respondents defined permaculture at the systems level, particularly as a “system-level way of thinking,” “an integrated worldview”, or an “integration of systems and processes.” There was a strong emphasis on the concept of process; that permaculture is not a stagnant set of rules but an ongoing “ecological and cultural process,” or a “decision-making, problem-solving protocol.” As a way of gauging prominent terminology across respondents, Figure 1 illustrates the frequency of keywords within and across statements coded as definitions of permaculture.

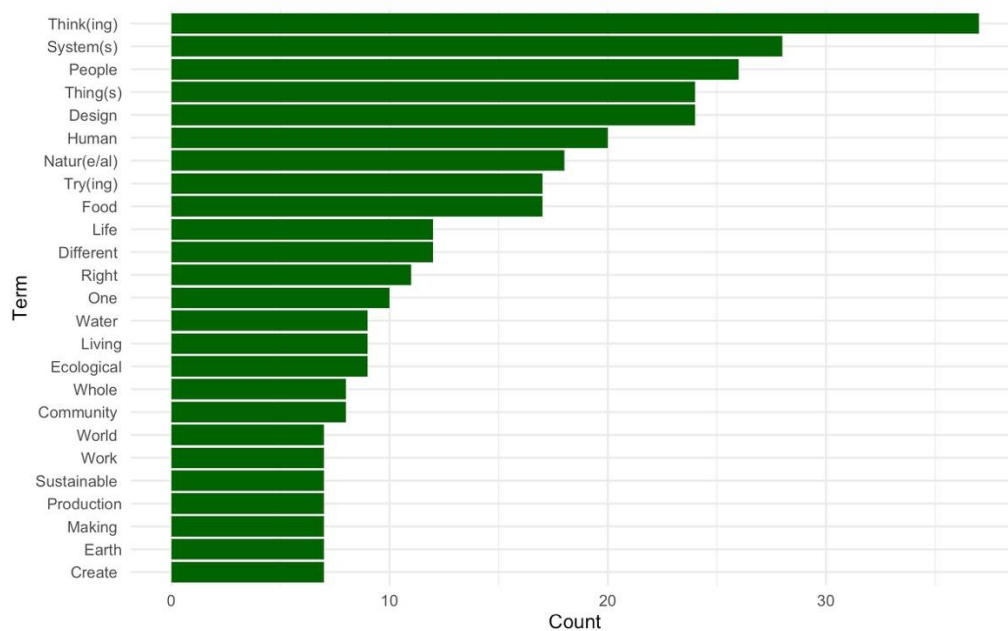


Figure 1. Term frequency within and across all responses coded as permaculture definitions (n = 34).

The words thinking, system(s), people, thing(s), design, and human were most commonly used. Several other words were used less frequently, such as nature, food, life, water, living, community, ecological and sustainable, weaving threads between sustainable living and systems-level sustainability. Two respondents succinctly encompassed these defining themes in stating: “Permaculture is a design methodology for ecologically and socially just human settlements based on natural patterns and processes”, and “Permaculture is a whole system design tool based on Indigenous knowledge and ecology that meets human needs while increasing ecosystem health.”

The distinction between permaculture and permaculture design was also an important, recurrent theme. Permaculture design was described as a way of intentionally imitating and integrating with nature and the relationships therewithin, often referenced and practiced within a specific landscape (e.g., a garden or residential home). However, how participants defined permaculture more broadly moved beyond design practices to an integrated lifestyle approach. This wider definition also included the process of identifying how its ethics do or could fit into daily livelihoods, particularly how basic elements such as food, water, shelter, energy, and community can support each other holistically. As one person described,

“Permaculture is showing up in my life, honestly at this moment, as a platform. It’s a view; it’s a perspective that I can use in making daily choices—just very simple daily choices about how I spend my time and money and energy, what food I put in my body and my politics.”

Nonetheless, the act of defining permaculture proved tricky for many respondents. The need to ground permaculture in something tangible or real, such as “sustainable land design”, or growing blueberries in one’s backyard was expressed as a way to convey the basic tenets of it without losing substance in how broad and nebulous the term may be. To avoid losing such substance, respondents noted a need to ensure that the way they teach and practice permaculture extends beyond “just gardening or growing food”, and pushes back against this common misconception that permaculture is simply these apoliticized actions. One person noted,

“I really tend to kind of take that broadening, and I tell people that it is a lens for any kind of systems design that tries to bridge ecological and human.”

Another provided a different perspective:

“It actually serves us even less to have an all-encompassing thing because I think the biggest principle—diversity—is acknowledging the differences and celebrating and enjoying those things and drawing from them—not trying to bundle all these things together.”

With this, there was charged ambivalence about the term’s utility; some hate it, some love it, and others remain in between. One person found it to be a “terrible term”, and that it is misleading and non-descript, stating, “It almost should be permacultures because it’s not like we’re just trying to say this is one permanent culture. It’s a diversity of cultures.” Another noted, “. . . I also think that it has often become bookish and abstracted and really removed from the actual, messy world that we are in.” Yet, others love the term, describing positive connotations with their own awakening to permaculture work, as well as a “good way to guide knowledge because it is already a formed knowledge base.” Thus, permaculture can be seen as a bridge toward action, connection, and a “powerful vision for the future.”

The majority of respondents stated that they go through “phases” with how they feel about the term and its utility, “hem[ming] and haw[ing] about whether it was the right thing to use the word permaculture in the names of my organizations,” as well as for different purposes. The appropriateness and acceptability of the term was also largely associated with their target audience. One stated, “I don’t know if I like the term; it depends on my mood. I think when I talk to other permaculturists, I tend to not like the term very much,” describing the ways that permaculture can become too self-contained within the community. Another elaborated on this point that, “If the name recognition of permaculture is useful? Great. And if it gets in the way, I don’t see any reason to be stuck with it.”

3.2. Scale: What is the Extent of Change at Which Permaculture is Aimed?

Participants described the scale of permaculture across multiple levels, from intrapersonal to societal. First and foremost, they stressed the importance of the responsibility that comes with human existence, namely that our place on Earth cannot just extract but also must give back to our land and our communities. Permaculture design principles were described as a way to help individuals and communities “enhance the ecology”, or “regenerate” ecosystems rather than degrade them.

Furthermore, many identified that permaculture cannot be done in isolation; instead, “you have to be part of a community where the pollinators don’t know where your property boundary is, and neither do the microbes.” In describing how they engage students with permaculture, one participant described:

“I’ll often give them a few examples. Because we are here in a physical garden, I’ll often point out what permaculture means in a landscape like this. I’ll mention the fact that we have broader ecological missions, we are actively trying to sequester carbon in the soil, we are actively trying to repopulate this garden with native plants and beneficial insects. But we’re also trying to provide a number of human functions, not just growing food and medicine, but also creating spaces for community to come together for people to slow down and really connect with their senses.”

Therefore, actions at the level of reusing household greywater, to building community organizations, and advocating for political and social change were all described as essential and related parts of the permaculture puzzle.

Whether permaculture was deemed as the “right” thing moving forward depended on the term being defined properly and applied beyond the landscape level. One person described their perception of the potential of permaculture:

“If we restrict permaculture to dogmatic applications of land regeneration techniques, we reduce its potential. If we continue to develop its applications to social systems, its impact increases. If we do even more, by offering it as a deep practice

to transform ourselves, the land, and society in tandem, I think its potential is greatest and theoretically endless. We won't heal landscapes for long without transforming the mindsets and cultures that created the degenerative condition of landscapes in the first place. It's actually not far from how permaculture was articulated early on, but we kind of picked the low-hanging fruit and ran off with a basket of techniques and left for later the much more difficult work of cultural transformation. So many of us are keenly aware that swales [a water-harvesting ditch and/or mound built on the contour of a landscape] won't save us, for example. What's more, plenty of people can't afford land in the current culture, much less what it takes to heal a totally degraded landscape, so we have to offer something more profound—a path of cultural transformation. This would be living up to the name permaculture, that is the development of a lasting human culture on earth."

Thus, the potential of permaculture to enact broader change seemingly rests on its conceptual clarity and purpose, and as another person put it, its ability to "develop a critical inquiry . . . and resist the urge to be dogmatic about what works."

3.3. Constituency: Where Is Permaculture from and Who Is It for?

A recurrent thread across interviews was that permaculture draws on concepts that are far from new; Indigenous nations and cultures have been practicing permaculture design principles long before they were called such. Therefore, one respondent referred to it as "a new buzzword for an old way of doing things." Another person elaborated: "I think there's just a lot of work to do in the permaculture community, doing reparations work with Indigenous communities because it was poorly cited in the original book of where exactly these techniques came from." As noted in Figure 1, the word Indigenous only appeared three times, and the word Native once, indicating a gap between the origins of permaculture ideas and practices and the thinking of prominent US leaders. Awareness of a general lack of acknowledgment caused some respondents to struggle with how to reconcile the modern definitions of permaculture with its conceptual and practical debt to Indigenous land managers, emphasizing the need for that work to be done.

Relatedly, there was a notable concern for the commodification of the term, like words such as "eco", "sustainable", "green", or "organic". Permaculture was likened to a buzzword or "bandwagon" (such as the word "regenerative" that has recently been popularized, albeit poorly universally defined) and related to concepts and terminology in permaculture that are decades old and Indigenous practices that are millennia old. Such concerns were related to the term often being thrown around without the "level of commitment and training to actually practice it."

The potential for commodification also enabled concerns of permaculture's exclusivity and appropriation. One permaculture teacher noted that they are "pretty allergic to [permaculture] right now and have been for the past several years." They further explained that its lack of diversity of leaders and its failure to reconcile with its appropriation of knowledge has become a sticking point: "I think in the US, in particular, it's become a very white and male-dominated thing. And it's been very much used as a lever to prop people up into this weird fandom thing that we seem to do in the US, whether it's a musician or a speaker, and it happens within organic farming or within grass grazing."

Many felt that the word permaculture could be replaced by several alternatives and convey the same message, such as "integrated living", "community", "ecological design" "edible landscaping", or "environmental design". The term used depended on their audience and intended goal. One person made a practice of asking their Permaculture Design Course (PDC) students to present different "elevator pitches" for how they would describe permaculture to different people, such as the president, a celebrity, or a close, personal friend. This sentiment was perpetuated by a feeling that it may not matter what it's called but rather to "just do the regenerative work."

Nonetheless, the term has garnered much attention and momentum. As one person put it, “I mean, I feel like the ship has sailed on that [whether permaculture is the right term]; it’s very much out there.” Another stated, “People are just working it, and it’s growing up, and there you are. I mean, there’s a buzz about it, there’s a demand for it. Is it called permaculture? Is it called regenerative? Is it called sustainable? Is it called this or that? I sometimes don’t know.” These leaders emphasized a desire to be engaged in permaculture-related action but recognize that the lack of consensus and clarity on its meaning is both limiting and problematic for its potential.

There was notable tension regarding who permaculture is ultimately for and how to best build on its momentum. Using it as an umbrella for all approaches aimed at regenerative and ecological design may subvert the already problematic lack of citation and knowledge acknowledgment in permaculture [7]. As one person summarized, “I think that [bundling everything under permaculture] may not be the best service because then you lose that some of these are Aboriginal practices, and some of these are a practice from somewhere else in the world.”

Yet, others expressed an appreciation for “the lineage and community” associated with permaculture, deepening their sense of loyalty to and critical engagement with it as a practice and movement. As one person said, their participation in permaculture is a place “where I can use my power to uplift people that may not have as much privilege as I do, or places to love myself, recognize other parts of my inner world that have been colonized by patriarchy or consumerism.” Another elaborates on their efforts to help make permaculture more accessible and relevant to all:

“I wanted to pull permaculture out of the hippie subculture distinction that it had at the time and more into a mainstream light with the goal of everything I’m talking about, as what can actually be relevant to more people; that it can be professional. And I’ve always believed that the solutions we offer in permaculture offer everybody something, from poor poverty-stricken communities to Republican ranch owners; clean water and healthy food and life on the land and dignity are for everyone. And for me to package permaculture in a way that only speaks to one segment or one group, it seems disingenuous to the potential of what we’re actually talking about here, which is regenerating ecosystems and living with the land and in an ecological way. So, that’s why I use the name in my organizations because I wanted to represent that way of thinking and the work that we do, so that we could work with a school, or we could work with the government, or we could work with a small landowner and it would feel relevant to every one of those communities.”

As used by respondents, the notion of lineage and community does not appear to extend to the Indigenous sources of permaculture thought and practice—except (by implication) in those cases when Indigenous practitioners have adopted the term or become involved in the network.

Consistently across participants’ perspectives, the ethics of permaculture (earth care, people care, and fair share) [30] and benefits of its implementation were noted as a positive of the term, practice, and movement. These ethics were described as “something that anyone can get behind”, and this potential for unity was largely deemed as a strength in garnering support across people and places to work toward the goal of “achieving greater lasting-ness in human culture.” Yet, for whom permaculture is most relevant and how this goal can be best achieved raised both uncertainty and disagreement across participants, illustrating how the scope and constituency of permaculture intersect in critical and urgent ways.

4. Discussion

Permaculture, as a term and concept, can cast a wide net. This study illustrates how prominent permaculture teachers and practitioners across the US grapple with defining and conceptualizing permaculture in their work across various contexts and target au-

diences, but also highlights important threads of commonality when considering what permaculture is at its core. As with a healthy ecosystem, the term has a rich diversity of definitions and applications, and continues to evolve, yet binding concepts exist across the range of expressions. Participants described a negotiation process of how they associate or disassociate themselves with the term, recognizing that it can be a useful tool for teaching and engaging while also polarizing or unhelpful in other contexts. Perceptions of the term ranged from love to hate, signaling the dynamic tension through which respondents understand the practice and purpose of their work in permaculture. We found that respondents understood the broad scope of permaculture as both a strength that maximized opportunities for engagement and inclusion, as well as a weakness that can inhibit communication to potential allies and may contribute to undervaluing Indigenous and alternative knowledge. These differences highlight the friction between permaculture as both concrete material practice and a sociopolitical movement. Nonetheless, despite terminological divergences and contextual variation, the respondents described the purpose of permaculture with consistency: to provide a systems-level way of thinking and a framework for engaging in regenerative change.

4.1. A Need for Reconciliation

Permaculture teachers and practitioners are struggling with the lack of acknowledgment and citation of Indigenous practices and knowledge in permaculture, a concern that has been echoed throughout the sustainability movement more broadly. Sustainability and sustainable development have failed to center Indigenous Peoples and knowledge, resulting in the potential for appropriation of their ways of life. As a result of pushing Indigenous knowledge to the side or unjustly plagiarizing it, land is largely considered as a political and economic tool [31], multiple, contextualized definitions of the term ‘sustainable’ are not equally valued [32], and nature is often viewed as a controllable “machine” [33]. Permaculture has faced similar criticisms, and the movement internationally has experienced issues with diversity and inclusion of its participants, being largely represented by a white supermajority [34]. Given that Western permaculture theory is grounded in Western scientific knowledge and research, there are important differences between the theory and practice of permaculture and Indigenous biocultural practices that are embedded in their own histories, knowledge, and spirituality, such as the *chacra* of the Kichwa-Lamistas of Amazonian Peru [35]. Thus, it is not appropriate to label these Indigenous practices as permaculture, whereby “one can see native peoples as sustainable, beautiful, and worthy of emulation without viewing them as engaged in permaculture-before-permaculture” ([35], p. 21). As permaculture garners attention and financial support, it may systematically undervalue these existing Indigenous alternatives that lay outside its purview and reinforce the coloniality of ecological knowledge [35]. While the urgency of widespread socioenvironmental degradation can stimulate imaginative and regenerative common ground [36], rebranding Indigenous practices and knowledge as “permaculture” without proper acknowledgment and reconciliation limits our ability to move toward regenerative design—a design that not only inflicts less harm but fosters positive change [37].

Permaculture’s potential for commodification is a growing concern. The breadth of permaculture thought and practice can help create an inclusive and dynamic environment for the development of and engagement with sustainable solutions. The same breadth also leaves room for contradictory opinions and applications that leave permaculture vulnerable to enabling shallow engagement and false solutions. The commodification of terms such as permaculture may have detrimental effects on the practical impacts of the movement. Sustainability, as a term and a framework, provides a sobering case study in the effects of commoditization through industrialization and marketing. The “sustainable” palm oil industry serves as an example of the failure of an industry to foster environmental stewardship and biodiversity conservation despite its globally recognized certification program [38–40]. Nature being seen and used as a political and economic tool (i.e., “green-grabbing”) may also reinforce patterns of colonial land dispossession and inequitable

wealth accumulation [36]. The concern for permaculture to follow a similar trajectory is grounded in, what these participants perceive as, a growing lack of authenticity and commitment to actually practicing permaculture.

4.2. Creatively Use and Respond to Change: The (Re-)Defining Process

Respondents displayed a commitment to (re-)define and renegotiate permaculture at any given moment in time and practice, and this commitment may serve as a model for how to engage with permaculture. One of permaculture's twelve principles stipulates to creatively use and respond to change [23,41]; this can be applied to the momentum of permaculture moving forward. From the perspectives of the practitioners in this study, the process of defining and conceptualizing permaculture is ongoing and dynamic, and it must involve a thorough reckoning with where permaculture came from in order to know where it can go. As put forth in a recent memo from a collective of Indigenous leaders and organizations, permaculturists need to “go deeper” and engage in a “consciousness shift that hopefully will support us to go from a dominant culture of supremacy and domination to one founded on reciprocity, respect, and interrelations with all beings—including, of course, among all humans” [42]. Several scholars expound that there has long been a need for an Indigenization and decolonization of modern ways of living [43] and the science of sustainability [44,45], where “all people return to the land, in the understanding that the best way to make amends for colonial pasts is for everyone to mend and make decolonial futures in the present” [46]. With critical caution, permaculture can be a part of this decolonial movement [35,47], particularly through intentional engagement with the diversity of permaculture practices and ways of thinking.

5. Limitations and Future Research

This study presents several limitations as well as opportunities for future research, the most prominent being its lack of diversity of study participants. Despite the major finding that permaculture must reconcile with its appropriative history, the majority of participants interviewed were white. This may reflect the fact that we did not sample participants based on race or ethnicity but rather their role in their organization. It may also reflect a lack of diversity in US permaculture more broadly, combined with the unavailability of alternative participants contacted for this study. Therefore, we cannot accurately represent the perspectives of other Black and Indigenous perspectives, other people of color within the permaculture movement, as well as those who act outside of or in opposition to permaculture. However, this omission presents a necessary opportunity for future research: to engage with a greater diversity of permaculture practitioners, as well as those who purposefully position themselves outside of permaculture given their perceptions of permaculture and its utility moving forward. Furthermore, this study is focused on the US context, but permaculture is a deeply international network and movement; future research can and should address these same nuances and concerns beyond US borders.

6. Conclusions

By exploring the strengths and weaknesses of permaculture's breadth of definitions and applications, we show that permaculture, albeit fraught with concerns, exhibits potential for transformative change. Ensuring permaculture contributes to such change through a decolonizing lens depends on clearly defining what permaculture is and is not, particularly in relation to alternative Indigenous knowledge and beliefs. Conceptual semantics matter: they shape and are shaped by the perspectives, actions, and discourses that they encompass [48,49] and help make communication for ecological change more effective [50]. The processes of (re-)defining permaculture are embedded and embodied in the daily actions and landscapes by which it is grounded [32,37]. Through these participant interviews and research findings, we recommend the following best practices in (re-)defining permaculture:

- Regardless of its application, permaculture requires a systems-level and historically grounded worldview lens.
- Permaculture is not a stagnant set of rules; it is a potential-creating design framework based on ethics and operationalized by principles.
- Social and economic justice must be central to the practice of permaculture.
- Humans rely upon nature, actions do matter toward enacting positive social and ecological change, and permaculture can help prioritize such actions.
- Permaculture design and practice draw heavily on Indigenous ecological knowledge but are not always or necessarily equivalent to them; the differences (and similarities) should be respected and explicitly acknowledged.

Moving forward, there is an urgent need to use these principles to push permaculture, and sustainability more broadly, toward the work that positively demonstrates healthy and just living systems and away from that which bolsters and sustains injustice. This starts with permaculture practitioners grounding their work and perspectives in a critical (re-)defining process as an ongoing opportunity for such reflection and reconciliation.

Author Contributions: Conceptualization, K.S. and R.B.M.; methodology, K.S. and R.B.M.; software, K.S.; validation, K.S. and R.B.M.; formal analysis, K.S. and R.B.M.; investigation, K.S. and R.B.M.; resources, K.S. and R.B.M.; data curation, K.S. and R.B.M.; writing—original draft preparation, K.S., R.B.M., and R.S.F.; writing—review and editing, K.S., R.B.M., and R.S.F.; visualization, K.S.; supervision, R.B.M.; project administration, R.B.M.; funding acquisition, R.B.M. All authors have read and agreed to the published version of the manuscript.

Funding: K.S. received support from the National Science Foundation under Grant No. 1633756.

Institutional Review Board Statement: The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the Institutional Review Board of Utah State University (protocol #9480, approved on 7 June 2018)."

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to the privacy concerns of participants.

Acknowledgments: We would like to thank the participants of this study for their time and openness. We also acknowledge Will Munger for his feedback on the written manuscript.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. WCED *Our Common Future*; World Commission on Environment and Development: Oslo, Norway, 1987; p. 300.
2. Little, D.L. Defining Sustainability in Meaningful Ways for Educators. *J. Sustain. Educ.* **2014**, *7*, 19.
3. Tol, R.S.J. The Economic Effects of Climate Change. *J. Econ. Perspect.* **2009**, *23*, 29–51. [[CrossRef](#)]
4. Levy, B.S.; Patz, J.A. Climate Change, Human Rights, and Social Justice. *Ann. Glob. Health* **2015**, *81*, 310–322. [[CrossRef](#)] [[PubMed](#)]
5. Ruban, D.A.; Yashalova, N.N.; Cherednichenko, O.A.; Dovgot'ko, N.A. Climate Change, Agriculture, and Energy Transition: What Do the Thirty Most-Cited Articles Tell Us? *Sustainability* **2020**, *12*, 8015. [[CrossRef](#)]
6. Fadaee, S. The permaculture movement in India: A social movement with Southern characteristics. *Soc. Mov. Stud.* **2019**, *18*, 720–734. [[CrossRef](#)]
7. Ferguson, R.S.; Lovell, S.T. Permaculture for agroecology: Design, movement, practice, and worldview. A review. *Agron. Sustain. Dev.* **2014**, *34*, 251–274. [[CrossRef](#)]
8. Macnamara, L. *People & Permaculture: Designing Personal, Collective and Planetary Well-Being*, 2nd ed.; Permanent Publications: Hampshire, UK, 2019.
9. Luna, J.M.; Dávila, E.R.; Reynoso-Morris, A. Pedagogy of Permaculture and Food Justice. *J. Educ. Found.* **2018**, *31*, 57–85.
10. Ulbrich, R.; Pahl-Wostl, C. The German Permaculture Community from a Community of Practice Perspective. *Sustainability* **2019**, *11*, 1241. [[CrossRef](#)]
11. Aiken, G.T. Permaculture and the social design of nature. *Geogr. Ann. Ser. B Hum. Geogr.* **2017**, *99*, 172–191. [[CrossRef](#)]
12. Lapoutte, A. The problem is the solution: Can permaculture management regenerate social economy enterprises? *Ann. Public Coop. Econ.* **2020**, *91*, 479–492. [[CrossRef](#)]

13. Millner, N. Food Sovereignty, Permaculture and the Postcolonial Politics of Knowledge in El Salvador. In *Postcolonialism, Indigeneity and Struggles for Food Sovereignty: Alternative Food Networks in Subaltern Spaces*; Wilson, M., Ed.; Taylor and Francis Group: London, UK, 2016; p. 22.
14. Williams, J.M. Building Community Capacity for Food and Agricultural Justice: Lessons from the Cuban Permaculture Movement. In *Food Justice in US and Global Contexts*; Werkheiser, I., Piso, Z., Eds.; The International Library of Environmental, Agricultural and Food Ethics; Springer International Publishing: Cham, Switzerland, 2017; Volume 24, pp. 31–49. ISBN 978-3-319-57173-7.
15. Didarali, Z.; Gambiza, J. Permaculture: Challenges and benefits in improving rural livelihoods in South Africa and Zimbabwe. *Sustainability* **2019**, *11*, 2219. [[CrossRef](#)]
16. Stewart, G. What does 'indigenous' mean, for me? *Educ. Philos. Theory* **2018**, *50*, 740–743. [[CrossRef](#)]
17. Dunbar-Ortiz, R. The First Decade of Indigenous Peoples at the United Nations. *Peace Chang.* **2006**, *31*, 58–74. [[CrossRef](#)]
18. Podsakoff, P.M.; MacKenzie, S.B.; Podsakoff, N.P. Recommendations for Creating Better Concept Definitions in the Organizational, Behavioral, and Social Sciences. *Organ. Res. Methods* **2016**, *19*, 159–203. [[CrossRef](#)]
19. Wezel, A.; Bellon, S.; Dore, T.; Francis, C.; Vallod, D.; De David, C. Agroecology as a science, a movement and a practice. A review. *Agron. Sustain. Dev.* **2009**, *29*, 503–515. [[CrossRef](#)]
20. Brym, Z.T.; Reeve, J.R. Agroecological principles from a bibliographic analysis of the term agroecology. In *Sustainable Agriculture Reviews*; Lichtfouse, E., Ed.; Springer International Publishing: Cham, Switzerland, 2016; Volume 19, pp. 203–231. ISBN 978-3-319-26776-0.
21. Roux-Rosier, A.; Azambuja, R.; Islam, G. Alternative visions: Permaculture as imaginaries of the Anthropocene. *Organization* **2018**, *25*, 550–572. [[CrossRef](#)]
22. Harper, P. Permaculture: The big rock candy mountain. *The Land Magazine*, 1 January 2013; pp. 14–16.
23. Morel, K.; Léger, F.; Ferguson, R.S. Permaculture. In *Encyclopedia of Ecology*; Elsevier: Amsterdam, Netherlands, 2019; pp. 559–567.
24. Tongco, M.D.C. Purposive Sampling as a Tool for Informant Selection. *Ethnobot. Res. Appl.* **2007**, *5*, 147. [[CrossRef](#)]
25. Ashworth, P. "Bracketing" in phenomenology: Renouncing assumptions in hearing about student cheating. *Int. J. Qual. Stud. Educ.* **1999**, *12*, 707–721. [[CrossRef](#)]
26. Hatch, J.A. *Doing Qualitative Research in Education Settings*; State University of New York Press: Albany, NY, USA, 2002.
27. Saldana, J. An introduction to codes and coding. In *The Coding Manual for Qualitative Researchers*; SAGE Publications: London, UK, 2016; pp. 1–40.
28. Nowell, L.S.; Norris, J.M.; White, D.E.; Moules, N.J. Thematic Analysis: Striving to Meet the Trustworthiness Criteria. *Int. J. Qual. Methods* **2017**, *16*, 160940691773384. [[CrossRef](#)]
29. Basit, T. Manual or electronic? The role of coding in qualitative data analysis. *Educ. Res.* **2003**, *45*, 143–154. [[CrossRef](#)]
30. Krebs, J.; Bach, S. Permaculture—Scientific Evidence of Principles for the Agroecological Design of Farming Systems. *Sustainability* **2018**, *10*, 3218. [[CrossRef](#)]
31. Virtanen, P.K.; Siragusa, L.; Guttorm, H. Introduction: Toward more inclusive definitions of sustainability. *Curr. Opin. Environ. Sustain.* **2020**, *43*, 77–82. [[CrossRef](#)]
32. Horlings, L.G.; Nieto-Romero, M.; Pisters, S.; Soini, K. Operationalising transformative sustainability science through place-based research: The role of researchers. *Sustain. Sci.* **2019**, *15*, 467–484. [[CrossRef](#)]
33. Rout, M.; Reid, J. Embracing indigenous metaphors: A new/old way of thinking about sustainability. *Sustain. Sci.* **2020**, *15*, 945–954. [[CrossRef](#)]
34. Ferguson, R.S.; Lovell, S.T. Grassroots engagement with transition to sustainability: Diversity and modes of participation in the international permaculture movement. *Ecol. Soc.* **2015**, *20*, 39. [[CrossRef](#)]
35. CaraDonna, J.L.; Apffel-Marglin, F. The regenerated chacra of the Kichwa-Lamistas: An alternative to permaculture? *Altern. Int. J. Indig. Peoples* **2018**, *14*, 13–24. [[CrossRef](#)]
36. Fairhead, J.; Leach, M.; Scoones, I. Green Grabbing: A new appropriation of nature? *J. Peasant. Stud.* **2012**, *39*, 237–261. [[CrossRef](#)]
37. Mehmood, A.; Marsden, T.; Taherzadeh, A.; Axinte, L.F.; Rebelo, C. Transformative roles of people and places: Learning, experiencing, and regenerative action through social innovation. *Sustain. Sci.* **2020**, *15*, 455–466. [[CrossRef](#)]
38. Richardson, B. Making a Market for Sustainability: The Commodification of Certified Palm Oil. *New Political Econ.* **2015**, *20*, 545–568. [[CrossRef](#)]
39. Pye, O. Commodifying sustainability: Development, nature, and politics in the palm oil industry. *World Dev.* **2019**, *121*, 218–228. [[CrossRef](#)]
40. Kalfagianni, A.; Partzsch, L.; Beulting, M. Governance for global stewardship: Can private certification move beyond commodification in fostering sustainability transformations? *Agric. Hum. Values* **2020**, *37*, 65–81. [[CrossRef](#)]
41. Brain, R.; Thomas, B. *Permaculture*; Utah State University Extension Sustainability: Logan, UT, USA, 2013; p. 6.
42. Angarova, G.; Ruka, T.; Tsuhah, S.; Mitambo, S.; Guri, B.; Frederick, K.; Haslett-Marroquin, R.; Black Elk, L.; Nelson, M.K.; Greenstone Farm & Sanctuary; et al. Whitewashed Hope: A Message from 10+ Indigenous Leaders and Organizations 2020. Available online: <https://www.culturalsurvival.org/news/whitewashed-hope-message-10-indigenous-leaders-and-organizations> (accessed on 24 November 2020).
43. Kruk-Buchowska, Z. Food Sovereignty Practices at the Oneida Nation of Wisconsin Tsyunhekw Farm. *Rev. Int. Am. Stud.* **2019**, *12*, 111–128. [[CrossRef](#)]

44. Johnson, J.T.; Howitt, R.; Cajete, G.; Berkes, F.; Louis, R.P.; Kliskey, A. Weaving Indigenous and sustainability sciences to diversify our methods. *Sustain. Sci.* **2016**, *11*, 1–11. [[CrossRef](#)]
45. Kealiikanakaoleohaililani, K.; Giardina, C.P. Embracing the sacred: An indigenous framework for tomorrow's sustainability science. *Sustain. Sci.* **2016**, *11*, 57–67. [[CrossRef](#)]
46. Paradies, Y. Unsettling truths: Modernity, (de-)coloniality and Indigenous futures. *Postcolonial Stud.* **2020**, *23*, 438–456. [[CrossRef](#)]
47. Vásquez-Fernández, A.M.; Ahenakew pii tai poo Taa, C. Resurgence of relationality: Reflections on decolonizing and indigenizing 'sustainable development'. *Curr. Opin. Environ. Sustain.* **2020**, *43*, 65–70. [[CrossRef](#)]
48. Reiners, W.A.; Lockwood, J.A.; Prager, S.D.; Mulroy, J.C. Ecological Concepts: What Are They, What Is Their Value, And For Whom? *Bull. Ecol. Soc. Am.* **2015**, *96*, 64–69. [[CrossRef](#)]
49. Eakin, H.; Connors, J.P.; Wharton, C.; Bertmann, F.; Xiong, A.; Stoltzfus, J. Identifying attributes of food system sustainability: Emerging themes and consensus. *Agric. Hum. Values* **2017**, *34*, 757–773. [[CrossRef](#)]
50. Nelson, M. Our Modern Challenge: Exploring Alternatives through Dialogue and Ecological Responsibility. *Trumpeter J. Ecosophy* **1993**, *10*, 6.