SHAPING SUSTAINABILITY – DESCRIPTIONS AND EMIC
PERSPECTIVES ON SUSTAINABILITY AND LANDSCAPE PRACTICES IN TWO
ECOVILLAGE COMMUNITIES

A Thesis in
Landscape Architecture

by
James A. Brosius

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The thesis of James A. Brosius was reviewed and approved* by the following:

Ken Tamminga  
Professor of Landscape Architecture  
Thesis Advisor

Tim Murtha  
Associate Professor of Landscape Architecture, Director of the Hamer Center

Thomas Yahner  
Associate Professor of Landscape Architecture

Eliza Pennypacker  
Professor and Head, Department of Landscape Architecture

*Signatures are on file in the Graduate School
ABSTRACT

Ecovillages are intentional communities with the stated goal of living a lifestyle of environmental sustainability, based upon the formation of strong community bonds. Ecovillages are an emerging approach towards sustainable development that has, so far, received limited attention in the field of landscape architecture. This research describes how communities with the stated goal of living sustainable lifestyles express sustainability through the organization of and interaction with their landscapes. Through case studies that include key-informant interviews, mapping exercises, and document-based analysis, this research identifies and describes the patterns, practices, and processes that influence how groups of people interact with and influence the physical environment in two ecologically-conscientious communities.

This research has found that collective values shape human behavior within these communities, which in turn shape the physical landscape in and around the ecovillage. Collective understandings of sustainability differ between communities, and as a result, different groups go about promoting sustainability with different goals and aims.

The findings of this research are presented as an emic description of landscape, and are evaluated for their potential application in the fields of landscape architecture, community development, and sustainable design.
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Chapter 1

Introduction

Since the 1980s, the notion of sustainability has been steadily gaining prominence in the public discourse (Brundtland, 1987). Concerns with global climate change, dwindling natural resources, and environmental degradation have caused many individuals to reexamine the relationship between their lifestyle choices and the effects such choices may have on the environment and the quality of human life in the broader community (Daily & Ehrlich, 1992).

One approach to sustainable living is the development of ecovillages. Ecovillages are intentional communities (ICs) where individuals looking to live ecologically and environmentally responsible conscientious lives have united around a common vision. Through organizing community life around cooperation and cohabitation, ecovillage dwellers are motivated to shape the landscape they inhabit to reflect their values of environmental, social, and spiritual sustainability. Ecovillages show potential as a space for the evaluation of how conscientious communities can affect positive environmental change in their surroundings. In a sense, they represent prime research grounds for those interested in landscape-based solutions to sustainable existence: a collection of individuals who are highly educated, ecologically motivated, willing to try experimental techniques, and possess the labor and land necessary to implement new ideas (Kozeny, 2005). Moreover, they are typically somewhat insulated from outside inputs that might otherwise complicate controlled research. However, to this point, researchers in the field of landscape architecture have largely ignored ecovillages. The premise of my research is
that ecovillages represent an untapped resource for evaluation of sustainable practices in landscape architecture.

This research seeks to describe emic perspectives on sustainability and land use practices in two intentional communities. What follows is a description of the settlement and land use practices of two ecovillage communities. These communities are actively engaged in living an intentional communitarian lifestyle, motivated by goals of working towards environmental sustainability. Although the goals of these communities are, in some ways, closely aligned, these communities have set about achieving them through quite different means.

This research will describe the landscape of communities that claim to be living sustainably in an attempt to understand what role collective values and understandings of sustainability play in the organization and development of community. Ultimately, this research is guided by the following question: How can people work together with their local environments to live in a way that can support healthy human life into the indefinite future without compromising ecological systems? The guiding assumption going into this research was that collective values of environmental stewardship act as the organizing force behind land use and landscape practices in ecovillage communities.

Through participant observation, key-informant interview, mapping exercises, and document based analysis, this research describes the principles, practices, and processes that influence how human beings interact with an alter the physical environment in ecologically-conscientious communities.

The format of this thesis is as follows: First, a literature review will provide the intellectual background and history necessary for a contextual understanding of ecovillage communities today, as situated within the larger social movement of intentional communities. Relevant reviews will be provided of the most current and
useful academic research specific to the physical and contextual understanding of ecovillage communities. Second, a problem statement outlines how growing environmental concern and the erosion of social and civic engagement have resulted in perceptions of a world that is increasing isolating, fragmented, and perilous, and how community organization based around collective values of sustainability may present solutions to these problems. Third, the methodology of this research is explained, including the methods of site selections, the design of the research instruments, the methods for data gathering, and the strategies for data processing. Next are case studies of the two communities that were selected for evaluation. The case studies provide insight into the understanding of place, as well as a thorough investigation of the social, economic, and environmental systems, processes, and relationships that operate within each community. Lastly, a section of discussion will describe how collective values guide the landscape practices and the physical landscape in each community.
Chapter 2

Literature Review

Background and Context

An intentional community is “a group of people who have chosen to live together with a common purpose, working cooperatively to create a lifestyle that reflects their shared core values. The people may live together on a piece of rural land, in a suburban home, or in an urban neighborhood, and they may share a single residence or live in a cluster of dwellings” (Kozeny, 1996). Intentional communities have a long history. The earliest known examples date back the 6th B.C.E., when Buddha’s followers “rejected wealth, turned to meditation, and joined together in ashrams to model an orderly productive and spiritual way of life” (Kozeny, 2000). Essene Jews from Roman Palestine “formed communities in response to the Hellenization of Judaic culture in the years between 100 B.C. to about A.D. 100” (Zablocki, 1980). Early Christians banded together to live “in communities of good” (Acts 2:44-45, as cited by Kozeny, 2000):

“44 And all who believed were together and had all things in common. 45 And they were selling their possessions and belongings and distributing the proceeds to all, as any had need. 46 Every day they continued to meet together in the temple courts. They broke bread in their homes and ate together with glad and sincere hearts.”

In the twelfth and thirteenth centuries, the emergence of new wealth in Western Europe produced rapid economic and social change, and led to the creation of Christian monasteries and numerous other religious communes. Ideological fragmentation in the dominant religious institutions in Europe during the sixteenth and seventeenth centuries created “pockets of longing for communities of belief” and resulted in what sociologist referred to as a “commune belt” in Western Europe. Religious persecution fueled
migration from Europe to the Americas, leading to the first wave of American communes (Zablocki, 1980, p. 29).

**Utopian Communitarianism in America: the First Three Waves**

“Utopia is the imaginary society in which humankind’s deepest yearnings, noblest dreams, and highest aspirations come to fulfillment, where all physical, social, and spiritual forces work together, in harmony, to permit the attainment of everything people find necessary and desirable” (Kanter, 1972, p. 1).

Three historical critiques motivated the formation of waves of intentional communities throughout American history. During the first wave, which took place from pre-colonial settlement until roughly 1840, many early American communities were founded by European separatists and pietist who sought relief from religious persecution and desired to establish their own communities in accordance with their own beliefs and practices. As Kanter (1972) described, “they wished to return… to a literal interpretation of the Bible, and took as their model the communism of the early Christian Church, with its emphasis on a community of believers possessing all things in common” (p. 4). Often a single charismatic leader who represented a direct contact with God led these groups. Through this divine guidance, it was believed that perfection in society could be achieved (Kanter, 1972).

In 1620, the Plymouth Pilgrims established the first American commune. The Amish arrived in 1727, followed by the Morovian colony in Bethlehem, Pennsylvania in 1741 (Schehr, 1997). This first wave of religious communitarianism gave rise to such German Separatist groups as the Shaker communities, the Harman Society, the Society of True Inspiration, and Zoar; as well as Oneida, an American Perfectionist community (Kanter, 1972).
The second wave is described by Kanter (1972) as the Politico-Economic Wave and took place from the 1820s-1930s, and by Schehr (1997) as the Utopian Socialist Wave and took place from 1824-1848. As Kanter (1972) wrote, the Industrial Revolution resulted in increased “dislocation, mechanization, overcrowding, and poverty” (p. 5).

Groups sought

“in small socialist community a refuge from the evils of the factory system, characterized by dehumanizing competition and the excessive labor of many for the benefit of a few. In the socialist utopia, all would cooperate to ensure the benefit of all, and in time, with proper education, men of higher moral character would emerge. Like the religious utopians, the politico-economic utopians believed in the perfectibility of human society” (p. 5).

Unlike religious communities, who were directed under the leadership of a single charismatic leader, socio-economic communities were guided by ideas, “…notably those of Robert Owens, Charles Fourier, and Etienne Cabet. Again, the original ideas were imported from abroad and were planted in an American soil rich for experimentation: Owen was English, Fourier and Caber were French” (p. 6). The writings and philosophies of these thinkers led to the formation of over forty utopian communities in the 1840s, including the North American Phalanx (1843-1856) and the Wisconsin Phalanx (1843-1856); the Icarian communities (1848-1898); Modern-Times (1851-1866); and the Llano Colony (1914-1939) (Kanter, 1972; Schehr, 1997).

The third wave took place during the 1960s and early 1970s, and is known as the Psychosocial Wave of communitarianism. The 1960s:

“produced the most expansive wave of communal activity in American history, with conservative estimates of over 2,000 communes in thirty-four states. Actors experimenting with alternative community lifestyles were searching for simplicity, reconnection with nature, pursuit of meaningful existence, and spirituality, often with the aid of mind expanding drugs, to counter the prevalence of greed, alienation, violence, and war” (Schehr, 1997, p. 45).

The ideals of the third wave of communitarianism are, in some ways, opposite of the two waves that came before. Communes of the 19th Century were looking ahead,
attempting to create new solutions to the problems of the day. As a result, they were places of innovation. Halcyon (est. 1903) was the site of the first X-ray machine. The New Harmony community cultivated numerous innovations, such as the first kindergarten, infant school, free public school, the first free library, and the first geologic survey in America (Schehr, 1997). The Shakers’ “inventiveness is nearly legendary” (Preble & Hoffman, 2012, p. 27). They saw themselves as “anticipating the next stage of human evolution.” The Shakers were responsible for nearly 140 patents during the 19th century, including the circular saw (Preble & Hoffman, 2012), and created high quality furniture that is still sought after today. By contrast, the third wave of utopian communities were looking to the past, romanticizing the small town, the village, handmade crafts, and the natural foods, and the “back-to-the-land” technologies of the previous century. As a reaction to rapidly changing culture, third wave communalism expressed, as Kanter (1972) writes, a “...longing to return to the more recent past, a nostalgia for the simplicity, innocence, playfulness, and lack of obligation of childhood” (Kanter, 1972, p. 168). Her critique

“revolves around alienation and loneliness, both social isolation and inner fragmentation. It holds that modern society [had] put people out of touch with others and with their own fundamental nature. It [rejected] established society’s emphasis on achievement, and instead adopts as its credo ‘self-actualization or ‘personal growth.’”

In this view, mainstream society was seen to be as forcing people into “narrow roles that [did] not express their total selves nor allow them to explore their deepest and fullest human potential,” which manifested in the promotion of “neurotic behavior at the root of [society’s] most pressing social problems” (p. 7).

These notions were embraced by groups as different as the adherents of the humanistic psychology teachings of Maslow and the behaviourist theories of B. F. Skinner, to the burgeoning hippie culture of the time. Large numbers of small communes
were founded, mainly in rural locations, in an attempt to “promote both greater intimacy and fuller human development” (Kanter, 1972, p. 8).

Despite the obvious differences in motivations, these three waves of American communitarianism shared much in common. Firstly, due to rapidly changing culture, individuals withdrew from society and joined communities. Moreover,

“[t]hey rejected the established order as sinful, unjust, or unhealthy. They stress the possibility of perfection through restructuring social institutions. They seek the recreation of a lost unity—between man and God, between man and man, or between man and himself. They stress immediacy, the opportunity to achieve such harmonies now. They frequently seek to return to the land as the pathway to perfection. And they often lead to a single development: the utopian community or commune. Despite the diversity of origins of such communities, they share many similar features in both their underlying concepts and their resulting lifestyles” (Kanter, 1972, p. 8).

The Fourth Wave: 1990s - Present

Some scholars suggest that we have entered a fourth wave of communitarianism (Schehr, 1997; Smith, 2002). Intentional communities in the 1990s moved beyond the socio-politico motivations of the 1960s, and resulted in a fourth wave of communitarianism characterized by eclecticism (Schehr, 1997). They are not as alienated from mainstream culture as previous movements, and appear to be more adept at balancing community needs (Smith, 2002, p. 111).

As Schehr (1997) writes, “...contemporary intentional communities have as a defining characteristic a “planetary consciousness” framing not only their overt, typically regionally directed political activities but also serving as a significant symbolic affront to dominant cultural capital” (p. 45).
Current intentional communities are civically engaged (Ergas, 2010), and less “alienated from mainstream culture” as were their predecessors (Smith, 2002). Schehr (1997, p. 46) offers eight significant characteristics that define contemporary ICs:

1) They exhibit an aggressive pursuit of innovative modes of enhanced human cohabitation through the application of numerous spiritual, philosophical, psychological, and sociological insights, that is, members are not regressing as they move “back to the land.”

2) They are typically non-hierarchical, often selecting feminist-inspired consensus decision-making models.

3) They are both innovators and practitioners of psychologically sophisticated methods for non-violent conflict resolution and personal growth.

4) They utilize appropriate technology where it is not ecologically intrusive.

5) There is a strong philosophical dedication to community outreach.

6) There is an effort to maintain balance in the pursuit of cultural, economic, and personal liberation and awareness leading to inspired and ostensibly more humane experiences of love, sex, play, work, child caring, self-identity, relationships to time, space, and the like.

7) There is a firm belief in economic self-sufficiency that is experienced in many ways, including innovative efforts at alternative farming cooperatives, food production, circulation of alternative money, and experimentation, production, and marketing of alternative energy devices.

8) There is a firm commitment among communitarians to non-violence, race and gender harmony, and peace.

**Intentional Communities: Current Context**

“Intentional communities are like people – you can categorize them based on certain distinguishing characteristics, but no two are ever identical. Differences among them, whether obvious or subtle, can be attributed to variations in philosophy, in mission or project emphasis, in behavioral norms, or in the personality and style of the leaders (if the group has identified leaders), and the individual members. Each group is somehow unique… Today there are literally thousands of groups, with hundreds of thousands of members, that live in intentional communities and extended families based on something other than blood ties” (Kozeny, 1996).
Intentional Communities Today

Intentional communities today exist in a variety of forms. Smith (2002) suggests that current intentional communities types include: communes, based on income sharing; ecovillages, focused on sustainability; urban housing cooperatives, a type of cooperative corporation in which individuals do not own their individual residences, instead owned by the housing cooperative; residential/community land trusts, legal nonprofit corporations for land preservation; student co-ops, based on the values of democracy, solidarity, self-help, and self-responsibility, and; cohousing, which includes the use of a common house and shared amenities, along with private dwellings.

Meijering et al. (2007), identified four types of contemporary communities based on location, ideology or shared value system, economic withdrawal, and social withdrawal. The first, “religious communities,” are

“...characterized and unified by strong ideological values, based on religious or spiritual beliefs... Economic independence is limited and lower than that of communal groups... only providing basic facilities such as a common kitchen, dining room and garden. A sense of community, and a sense of home, are created between the member through communal ‘rituals’, such as celebrations, religious services, spiritual gatherings, but also common meals and work” (p. 45).

Religion, “regardless of the specific sect or form, is probably the most common inspiration for launching a new community” (Kozeny, 1996).

Meijering et al.’s (2007) second type is known as “ecological communities.”

“Ecological communities withdraw to remote locations, where they attempt to live up to their ecological ideals by unfolding sustainable lifestyles. They actively reduce the necessity of economic relations with society, for example, by reducing the use of consumer goods, by limiting work in paid jobs outside the community, and by aiming for economic self-sufficiency, chiefly by producing food and energy. Being self-sufficient requires that members work inside the community... Communities of this type participate in social life with outsiders, both in and outside of the community. They do this by sustaining social contacts with family and friends, and by giving courses to outsiders, for example on organic farming... Local inhabitants of rural areas mostly do not associate these traditions with their own rural practices, but rather see them as ‘strange’. This
can be because these practices are drawn from other geographic areas, or from times long passed” (p. 45-46).

Kozeny (1996) adds that “[a]mong secular communities, the inspiration is typically based on bold visions of creating a new social and economic order–establishing replicable models that will lead to the peaceful and ecological salvation of the planet” (p. 2).

The third type, “communal communities,” were labeled as such

“...because of its communal ideology, implying that the main ideological focus is on interpersonal contacts between members... Facilities such as a common garden, a dining room and kitchen, a common house, pub, playground, sports facilities, and offices are provided in the community. These facilities function as meeting places, and stimulate interaction between members” (Meijering et al., 2007, p. 46).

The last type are known as “practical communities,” and are

“...the most numerous of the four types... [They] live together for practical reasons: life is cheap in a community, since facilities and goods are shared. Examples are sharing a house, common use of a kitchen, maintaining a vegetable garden, sharing household appliances, and car-pooling. According to their members, practical communities are not unified by a common ‘ideology’ of these communities” (Meijering et al., 2007, p. 46).

The current number of intentional communities in the US is difficult to estimate. Smith (2002) found a huge range in the number of estimated ICs, from several hundred to several thousand. As of March 18, 2015, the Fellowship of Intentional Communities website (FIC.org) listed 843 registered established intentional communities. Of those, 651 were listed as having 5 or more permanent adult residents. Actual numbers are likely higher, as not all intentional communities choose to advertise their existence, or perhaps even identify as an intentional community even if they fit the description.
What is an Ecovillage?

Robert Gilman is credited with popularizing the concept ecovillages in the early 1990s. Gilman (1992) described the ecovillage as “a human-scaled, full featured settlement, in which human activities are harmlessly integrated into the natural world, in a way that is supportive of healthy human development and can be successfully continued into the indefinite future.”

He further dissected this definition to offer insight into each component of the description. By “human scaled,” he envisioned a community small enough that inhabitants can know one another, and where each member feels he or she can influence the direction of the community. He felt the upper limit of such a population would be about 500 members. The idea of “full featured” would include “all the major functions of normal living—residence, food provisions, manufacture, leisure, social life, and commerce—are plainly present and in balanced proportion…” (p. 3).

In describing “human activities” as being “harmlessly integrated into the natural world,” Gilman emphasizes the importance of equity between human and nonhuman life forms, as well as the natural systems that sustain life. In this view, Gilman stresses that the nature is not dominated by human activity, but rather, humans themselves are located firmly within the idea of nature. He stressed emphasis is to be placed on the cyclic use of material resources, rather than a linear approach. It involves “…a balanced and integrated development of all aspects of human life—physical, emotional, mental, and spiritual.” He described human needs as concerning “not just in the lives of individuals, but in the life of the community as a whole” (p. 3).

The last part of the definition is that all of what was previously described be accomplished “in a way that is supportive of healthy human development and can be
successfully continued into the indefinite future.” Gilman expresses a danger in having a community which seems to be “harmoniously integrated and full-featured,” but is actually “in some not-so-visible way living off the capital accumulated in other parts of society... dependent on unsustainable activities elsewhere,” and/or, not inclusive of a major aspect of life, such as childhood or care during the end of life. Gilman’s idea requires “a commitment to fairness and non-exploitation toward other parts of today’s world, human and non-human, and toward all future life” (p. 4).

The Global Ecovillage Network has a somewhat different definition. They describe an ecovillage as “…an intentional or traditional community using local participatory processes to holistically integrate ecological, economic, social, and cultural dimensions of sustainability in order to regenerate social and natural environments” (GEN.org).

The notion of sustainability appears to be a crucial component of ecovillage life, though understandings of sustainability vary amongst both individual ecovillages, as well as amongst residents within particular communities (Ergas, 2010; Kasper, 2012; Kirby, 2002; Meijering et al., 2007). The Brundtland Commission (1987) described sustainable development as “development which meets the needs of current generations without compromising the ability of future generations to meet their own needs.” However, the Ecovillage concept of sustainable development appears to go further. The Brundtland definition (“without compromising”) maintains the status quo, whereas a motivation of the ecovillage is “…the choice and commitment to reverse the gradual disintegration of supportive social/cultural structures and the upsurge of destructive environmental practices on our planet” (GEN.org).

Ergas (2010) found that ecovillage residents “…have a complex vision of sustainability, a word with many broad definitions” (p. 32), and that sustainability was
the main value uniting the ecovillage that she studied. Additionally, ecovillage residents had multifarious understandings of sustainability—everything from “protecting the environment, to internal mental processing, to dealing with conflicts in personal relationships” (Ergas, 2010, p.40). As a result,

“...they go about modeling sustainability in a multifaceted fashion. Their model consists of widely held beliefs about relating to each other and their environment interdependently while maintaining self-reliance, or minimal dependence on dominant institutions and infrastructure” (p. 41).

Kasper (2008) found that ecovillages have an “implicit emphasis on ecology,” and that the design of communities is fundamentally organized around “themes of systemic thinking, ecosystem health, and an overall sense of respect for others, both human and non-human.” The goals of such organizations “are manifest in specific efforts to preserve green space, maximize energy efficiency, and make optimal use of space and materials.” Additionally, Kasper found that what sets an ecovillage apart from other intentional communities is the “expanded notion of community and accompanying ethic” (p. 13). The expanded notion of community is one that “includes not only people, but countless other species, as well” (p. 22).

Kirby (2003) found that “[i]t is the marriage of environmental concern and community building that distinguishes the ecovillage movement from other intentional communities, both historical and contemporary” (p. 323).

There is no definitive statistic on the current number of ecovillages. The Federation of Intentional Communities lists 352 ecovillage communities worldwide, of which 152 are established. Of those, 52 are located in the United State, and have at least 5 permanent adult members (FIC.org).
The Goals of Ecovillages

Ecovillages aim to create an alternative model to mainstream culture (Meijering et al., 2007; Kasper, 2008; Kirby, 2002).

“Although collectively distancing themselves from the mainstream, most communities continue to contribute to it. They adopt various strategies in doing so, ranging from attempting to change the mainstream, to refusing all contacts with it. However, this is a gradual scale, and most communities are somewhere in between... Therefore, it is too simple to argue that intentional communities are completely outside the mainstream” (Meijering et al., 2007, p. 43).

Although ecovillages do desire some amount of autonomy and independence from mainstream culture, particularly in regards to energy and resources, ecovillages do not represent a complete departure from the mainstream. “[E]covillages do not aspire to be completely self-sufficient, nor are they meant to be isolated communities of escape.” Instead, the ecovillages aim to expand connections with the outside world, and to develop “linked in networks of social, economic, and political ties” (Kasper, 2008, p. 13).

Kasper (2008) found that almost all of the ecovillages that were studied expressed

“a desire to demonstrate to others the genuine possibility of an alternative lifestyle... By creating a certain way of experiencing the world, in addition to promoting an intellectual understanding of the reasons for living this way, ecovillages represent the synthesis of knowledge and action, theory, and practice” (p. 19).

The Motivations of Ecovillage Residents

The most common reasons for individuals to join an ecovillage are dissatisfaction with predominant mainstream culture, and the desire to impart positive change (Ergas, 2010; Kirby, 2002). Through the production of a new space, ecovillagers aim to satisfy a sense of psychological dissonance with the “structural constraints that are inherent in a
consumer-oriented environment” (Kirby, 2003, p. 324). By bringing together social, environmental, and spiritual concerns, the ecovillage ideology “provides a focus for those who see conventional social patterns as unacceptable” (p. 324). For some residents, it is a personal sense of dissatisfaction with mainstream consumer society that drives them to the ecovillage. For others, it is the desire to live a life more in line with personal social and environmental concerns, and, through living a life of accord with one’s values, to affect change. Kirby (2003, pp. 325, 327) writes,

“In this way, the intersection of personal concerns for establishing viable community and living environmentally, and more global concerns for the future of our society and the global environment, find expression in the creation of an environmentally oriented community…”.

Moreover:

“Through establishing consensus on the use of space and energy, and foregoing the excesses and privileges of modern individualism by agreeing to the voluntary limits that ecovillage life involves, residents were motivated by the intention to break the destructive cycle implied by Hardin’s (1968) tragedy of the commons.”

However, despite the emphasis on environmental concerns implicit within the ecovillage idea, for many residents, the desire for community is a greater motivating factor than ecological considerations. Many ecovillage residents “describe their former selves as not particularly environmentally-minded” (Kirby, 2003, p. 14). Instead, a “longing for community, a safer environment, and a good atmosphere for children” were primary motivations given for relocation to a new community (Kasper, 2003, p. 14). Kirby (2003) found that “social concerns outweighed purely environmental considerations as a motivating factor” in the decision to relocate by a margin of 10:3 (p. 327). Residents were generally concerned with “establishing a firm connection with other like-minded individuals and generating the sense of trust and reciprocity that a satisfying community life offers.” In recounting their experiences prior to living in community,
residents expressed an evident “degree of disconnectedness and alienation from conventional social patterns and mores...” (p. 327).

In his study of the residents at EcoVillage at Ithaca (EVI), Kirby (2003) found that in living in an ecovillage community, residents were able to develop “a sense of consonance between identity and behavior”, and that this identity of consonance was “based on a sense of connectedness to core elements that promote the experience of a sustainable life” (p. 332). He identified five core elements, known as Kirby’s Five Forms of Connectedness, at EcoVillage at Ithaca.

1) Connection to the wild landscape: This element “underscores a sense of belonging and communion with all life, in its wildest and most spiritual sense.” Connection to natural environments fosters awareness of “one’s place in the larger scheme of things, and may be a unifying factor at the ecovillage in the absence of a universal religious creed” (p. 325). This connection serves as a source of spiritual inspiration and satisfaction.

2) Connection with Community: Social bonds and a strong sense of community within the ecovillage help to foster that same connection with all fellow humans.

“This leads to a sense of belonging, and cooperative communication in realizing a common goal. This connection is further underscored by the contrast between the compact settlement and the expansiveness of the land amid which the ecovillage sits. The physical limit of the building forms a kind of psychic boundary for the community that defines the human world from the wider world of nature” (p. 325).

3) Connection with a cultivated landscape of benign human activity: Through food production and other environmental activities, such as habitat restoration efforts, an attitude of partnership between the living landscape and the community is established. This relationship is dynamic in nature. In addition to providing physical sustenance, the land provides emotional sustenance, as well. “This connection unites the human world
and the world of nature through the common activity of respectful stewardship and
cultivation of the land…” (p. 325).

4) Sense of personal integration: This element

“...is intrapsychic in nature. The recognition that modern life fragments and
compartmentalizes the various components of our lived experience, work,
socializing, family, organizational activity, hobbies, etc., leads to a desire to
reconnect at least some of these in a meaningful way. Involvement in ecovillage
life tends to bring together family, social ties, interests and activities, and in some
cases work, in a way that brings a sense of personal psychological satisfaction to
residents that is often lacking in the wider society” (p. 325).

5) Connection through time/intergenerational sustainability: In embracing
Gilman’s (1992) notion of an ecovillage as being full-featured, the ecovillage provides “a
connectedness through generations, from children to old people” and “forges a temporal
connectedness that implies a commitment to sustainability and dedication to continuity
through time” (p. 325).

The importance of connection was also demonstrated in Sanguinetti’s (2014)
research on practices in intentional communities that “predict enhanced connection to
nature or community, thus building on the theory of transformation through connection in
the context of intentional community.” She found that “transformational practices”, such
as community gardening, spending time outdoors in one’s own community, or other
community focused activities like shared meals, “lead to greater personal well-being and
pro-social and pro-environmental behavior (p. 88).” Building upon Kirby’s Five Forms of
Connectedness at EVI, as well his notion of mutual and reciprocal transformation
between the self and the environment, Sanguinetti (2014) found that “behavioral
mechanics (i.e., “practices” and “lived experiences”) are important antecedents to
enhanced connectedness and transformation” (p. 87). Additionally, “transformation
through connection is a cyclic process”; and “residents’ participation in transformational
practices further enhances connectedness and leads to more sustainable relations between residents, the community, and the environment” (Sanguinetti, 2014, p. 87).

**The Design of Ecovillage Communities**

Kasper (2008) wrote that in ecovillage communities, “one of the most familiar and straightforward ways of aligning people’s behavior with community goals is to establish rules” (p. 15). As intentional communities, their “vision, mission, and goals are clearly articulated and are manifest in specific policies and practices with which residents must comply” (p.15). Mission statements are often used for this expressed purpose. In addition to keeping values aligned, mission statements are useful for attracting new members to a particular community. However, “these documents are open to change through formal process as current members deem necessary” (Kasper, 2008, p. 15).

The physical designs of ecovillages are shaped by the shared goals of the residents that comprise each community. The goals of ecovillages often

“...revolve around themes of systemic thinking, ecosystem health, and an overall sense of respect for others, both human and non-human. These goals are manifest in specific efforts to preserve green space, maximize energy efficiency, and make optimal use of space and materials... Implicit in the physical characteristics of the community are reminders and reinforcements of ecovillage ideals, which include environmental stewardship, high quality of life, and strong community. Ecovillage design should reflect a community’s spiritual, social, and ecological lifestyle, making each design unique” (Bang, 2005, 120; as cited by Kasper, 2008, p. 17).

The maintenance of open space is a common characteristic of the ecovillage. Open space is important for many purposes, including: the preservation of wildlife habitat and wildlife corridors; the detoxification of land; the production of food and energy production; and maintaining the land’s aesthetic value (Kasper, 2008).
Zoning is employed to designate areas for agriculture, commerce, and living spaces. Buildings are often clustered to reduce the physical footprint of a community, provide privacy for residents, and provide opportunities for social interaction. Kasper (2008) found that all of the ecovillage communities she evaluated made a priority to minimize the use of spaces that serve only a single function and require “high energy inputs to construct and maintain” (p. 17). Instead, these communities opted for the creation of spaces that were multifunctional and low energy.

“For example, household lawns and impermeable surfaces for parking and paved roads are kept to a minimum. Universal is the attempt to maximize space for native trees, plants, and the wildlife that inhabits them. In this way, merely walking around one’s community can serve as a reminder that the ecovillage is not just a home for people, but for other species as well” (Kasper, 2008, p. 17-18).

Similarly, Kirby (2002) found that the physical designs of ecovillages are “an attempt to shape the world into a concrete expression of aggregated beliefs, knowledge, understanding, attitudes, values, and feelings.” Ecovillage residents are involved in a process of “ongoing feedback between the structure of the environment and the construal of the self within that environment,” through which “both the physical world and the self are successively and reciprocally transformed as new practices emerge and inform the shaping of the landscape” (p. 325).

**The “Average” Ecovillage**

Meijering et al. (2007) conducted detailed surveys of 496 intentional communities. Through analysis, they created a fictionalized composite of the average response, dubbed “Ecotopia.” In Ecotopia, the members are composed from 8 separate families, with a total of 15 well-educated mostly white adult members from middle class
backgrounds, and 8 children. Sixty percent of the adult members are between the age of 25 and 50. Most members previously lived in cities and towns, but “felt displaced within mainstream society and chose to withdraw to a more rural location” with the common goal to “create a sustainable community that is as self-sufficient as possible” (p. 46).

They collectively own 75 hectares (~185 acres), and are located 25 kilometers (15.5 miles) from the nearest town. All members have their own house, but share a common house that features a dining room, common kitchen, an office, and a meeting room. Dinners are communal, and a vegetarian option is always available. Weekly meetings are held to discuss relevant issues. Decisions are made by consensus, and all adult residents have equal access to participation. However, implicit and/or explicit hierarchies exist, as long term or influential members may have disproportionate influence in consensus procedure. Bonds are strengthened through communal dinners, celebrations, and other social activities.

An ideology based on sustainability holds the community together. Many residents are involved with outside environmental organizations. New members reside in the community for a trial period of six months, after which members decide on whether or not to grant full time membership status. The community is not entirely self-sufficient—members are dependent on outside income to keep the community going. Two members have organized educational courses on organic farming for non-members. A good portion of food consumed is grown on site. Most members spend a considerable amount of time working within the community, mostly on agricultural work. Vegetables, potatoes, and wheat are grown in a common garden; chickens are raised for meat and eggs, cows for milk and other dairy products. Houses have solar powers, and the community has two wind turbines. Enough energy is generated to provide electricity for all. Two cars are shared between all members.
The Cohousing Model

Many ecovillages are based on the Danish model of cohousing, which was popularized in the United States by architects Kathryn McCamant and Charles Durrett in the early 1980s (cohousing.org). The primary goal of cohousing is to “create a rich social environment with enhanced community support” (Sanguinetti, 2014, p. 86). Williams (2005) found that the cohousing model employs many of the design principles that have been identified in architecture and urban design literature as “being crucial to high levels of social interaction in neighbourhoods,” such as high rates of density, good visibility, the clustering of buildings, the inclusion of defensible space, and the restriction of automobiles to the periphery of neighborhood space (Williams, 2005). Cohousing is the fastest growing type of intentional community in the United States (Sanguinetti, 2014).

The Cohousing Association of the United States provides six defining characteristics of a cohousing community (cohousing.org):

1) Participatory Process - Future residents design the community to fit their own collective needs. They may enlist the help of a designer, but the residents provide the primary input to the design.

2) Neighborhood Design - The physical layout and site design encourage social interaction amongst residents with the ultimate purpose to foster a sense of community.

3) Common Facilities - “Common facilities are designed for daily use, are an integral part of the community, and are always supplemental to the private residences.”

4) Resident Management - “Residents manage their own cohousing communities, and also perform much of the work required to maintain the property.”

5) Non-hierarchical decision structure and decision-making - All residents have a voice in the decisions made within the community. Many communities use consensus-based approaches to decision making.

6) No shared community economy - Individual households hold separate incomes.
In their survey of cohousing communities in the United States, Margolis & Entin (2011) found that all communities featured a Common House, a separate building used for community functions. Almost all Common Houses had a kitchen and a place for shared meals. Eighty percent of cohousing communities had additional common space, such as exercise room, laundry facilities, children’s play rooms, or workspaces. Three quarters had guest room for visitors. Most often, these facilities were located in the community Common House.

Additionally, Margolis & Entin (2011) found that most cohousing communities (80%) operated with a consensus model for the decision-making process. The remaining one-fifth “primarily uses a modified form of consensus, such as a fallback to a super-majority vote or sociocracy. No community uses a simple majority vote for decisions” (Margolis & Entin, 2011).

The cohousing model is aligned with ideas of sustainable living. The “size and cooperative structure” embedded in cohousing organization promotes sustainable practices. The structure of cohousing results in an “enhanced sense of connection among residents, nature, and community,” as well as “a greater understanding of the interdependence of self, society, and environment,” and thereby results in lifestyles that are “more socially and environmentally sustainable” (Sanguinetti, 2014, p. 86).

Meltzer (2000) performed in-depth research on 346 households in 18 cohousing communities, with particular focus on the role of “community” in establishing environmental awareness and practices. He found that about half of the cohousing communities had mission statements, all of which referred to “living in a pro-active, caring relationship with the environment.” Additionally, all communities displayed “implicit, but strong support for environmental values and practices” (p. 221).
Site planning is one of the most distinctive characteristics of the cohousing typology. Because the residents are a consensual intentional community, aspects of land-use, density, infrastructure, and landscaping can be rationalized and integrated beyond that which is possible in conventional residential developments. Typically, cohousing communities adopt a “stewardship” role in relation to site, clustering buildings and limiting vehicle access so as to increase efficiency, maximize open space, and preserve valuable features and qualities of the property. Most cohousing communities have common spaces for gardening, and most feature shared walking paths. About half of the communities surveyed have recreational fields, woods, and orchard areas, and about one quarter have a pond on the property. Three quarters of the surveyed communities feature edible landscaping and/or permaculture designs. Over half have systems in place to capture rainwater. Nearly one quarter of the communities have conserved land permanently through conservation easement (Margolis & Entin, 2008).

Additionally, most cohousing communities adhere to “smart growth” concepts. Most feature convenient access to public transportation, and are located within walking or biking distance to features such as grocery stores, school, libraries, and restaurants. Almost half are within walking distance to a significant number of cohouser’s jobs. The majority of communities feature limited parking spaces, averaging less than two per residential unit. Regular carpooling was reported by more than half of the communities, and about one third have systems or programs in place for the sharing of privately owned automobiles (Margolis & Entin, 2011).

The density of suburban cohousing developments is similar to many tract condominium developments, but exhibit greater efficiency of land-use through the clustering of buildings and the limitation of automobile traffic. Because of increased access to common facilities and robust community, cohousing residents are able to live in
smaller homes while also reporting increased quality of life. With an average dwelling size of 1,267 square feet, cohousing homes are slightly more than half the size of the national average (Margolis & Entin, 2011).

Cohousing residents noted “the existence of particular systems in cohousing had markedly improved their pro-environmental practice” (p. 7). Nearly all residents participate in composting and recycling programs. More than ninety percent of the communities have community gardens for vegetable production and use this produce for shared common meals. Eighty-seven percent of the communities support local farmers or CSAs, seventy-three percent feature an orchard, forty-one percent raise chickens for eggs, and thirty-three percent have bulk buying programs for food (Margolis & Entin, 2011).

The single greatest influence on pro-environmental practices for cohousing residents was found to be “the convenience of managed systems” that support environmentally minded practices. The development phase of community was found to be particularly important in promoting pro-environmental behaviors of those who were previously less committed. This influence can be exerted “overtly via discussion, education, or leadership, or covertly through socialization and/or behavior modeling” (Margolis & Entin, 2011, p. 7). Many residents found that the support of neighbors, friends, and the larger community were highly influential on their environmental practices (Margolis & Entin, 2011).

Cohousing residents are highly educated (Mulder et al., 2006; Margolis & Entin, 2011). Eighty percent have completed undergraduate degrees, with forty percent holding graduate degrees, and ten percent having completed a doctorate (Margolis & Entin, 2011). Mulder et al. (2006) found that nearly twice as many cohousing residents held or were pursuing a graduate degree in a community examined in Burlington, VT. “Given
that Burlington is a college town, this suggests a much higher level of education than the national average” (p. 15-17).

The sharing of resources “enable efficiencies to be developed and mutual benefits to be derived” in cohousing developments (Margolis & Entin, 2011, p. 12). While sharing helps to promote the establishment of social relationships, it is also dependent upon them. The “degree to which residents are willing to share depends upon the trust and goodwill they establish” (p. 12). Sharing results in overall reductions in household consumption, such as reduced energy use, fewer household appliances, reduced water use, and reduced outputs of solid waste (Margolis & Entin, 2011; Freeman, 2007; Walker, 2012; Kasper, 2008; Palmer & Manning, 2014).

The Benefits of Living in Community

Living in intentional community has also been shown to result in reduced environmental impact while also improving overall quality of life. Mulder et al. (2006) wrote that

“...alternative living patterns being crafted by [intentional communities] may be demonstrating one method for reducing our reliance on built capital and its associated throughput of resources and waste. Our results imply that ICs successfully substitute social capital, and to a lesser extent human and natural capital, for built capital indicating a more substantial path to a high quality of life can be had” (p. 13).

Additionally, “some elements of [Mulder et al.’s] survey certainly suggest that ICs enable their residents to pursue a more sustainable lifestyle” through the substitution of social capital for built and financial capital” (p. 20). Though residents of intentional communities were found to have lower per capita incomes than the control group, they were found to score higher on quality of life indices. “By converting private goods into
public goods, it is feasible that ICs enable all to live better with less capital” (Mulder et al., 2006, p. 20).

The residents of intentional communities that were studied also exhibited greater levels of reliance upon their communities “not only for social support, but also for economic support, with many residents reporting they worked at home or nearby” (Mulder et al., 2006, p. 20). In working in close proximity to where they live, residents were also more likely than control subjects to use more sustainable modes of transportation (Mulder et al., 2006).

Mulder et al.’s study also revealed some interesting results with regards to the importance of natural capital. While natural capital was found to be important to both intentional communities and the control groups, for intentional communities:

“...a second question asked what emphasis the community placed on the preservation of natural areas. While respondents were not correlated with individual QoL, they were strongly correlated with community QoL... This is one of the strongest correlations seen in our study suggesting not only the importance of natural capital but also the linkage between community involvement in conservation and community well being within ICs” (p. 19).

Overall, intentional communities were found to “have a better balance between built, human, and social capital than unintentional communities,” and that “individual QoL was statistically higher amongst [intentional community] residents” (Mulder et al., 2006, p. 13). Much of this increase in quality of life was attributed to substitutions of forms of capital. “Intense community bonds and interactions” present within intentional communities serve as substitutions for traditional familial and friendship bonds (p. 14).

Compared to the control group, “IC residents were more likely to identify community interactions as important with 88% saying such interactions were ‘Very Important’ or ‘Important’ to their QoL versus only 52%” in the control (p. 18).
Challenges Facing Intentional Communities

Intentional communities are not without their share of problems and challenges. The literature identified difficulties relating to economic concerns, institutional and regulatory oversight, inter- and intra-community issues, diversity, affordability, and environmental conditions.

Economics, in particular, are a source of strain in intentional communities. Kasper (2008) found that “the biggest initial challenges are finding the land, money, and people to realize the idea once it is hatched” (p. 20). For some communities, low or no interest loans provided by interested benefactors were necessary to get communities up and running. In several cases, these debts ultimately had to be forgiven in order to keep these communities from going into foreclosure (Walker, 2005; Kinkade, 1994). Provided that these initial concerns of investment can be overcome, communities often face difficulty in developing a viable economy. Many communities find difficulty in providing work opportunities on site.

“For communities that are closer to cities, this is less of a problem. In these communities, most people have a short commute to work, but they, too would like to see more on-site employment and additional commerce…” (Kasper, 2008, p. 21).

Additionally, local laws in the form of housing codes and neighborhood zoning are often at odds with the design aspirations of the community (Ergas, 2010). Additionally, “many groups reported being restricted by the requirement of regulatory and financial bodies” (Meltzer, 2000).

Ecovillage residents sometime faced challenges in maintaining amicable relationships with neighbors and the larger outside community (Ergas, 2010). Groups
also face difficulties in the construction of the strong boundaries necessary to create a cohesive group. As Kanter (1972) wrote:

Whereas it was relatively easy for groups to develop clear cut boundaries in the nineteenth century, it relatively difficult today. Although the strength of [an intentional community] today is still contingent on the presence of commitment mechanisms, the problems of employing these mechanisms have been exaggerated by the difficulties of developing and maintaining boundaries in an urban era of mass communication, easy mobility, and rapid social change” (Kanter, 1972, p. 169).

Boundary issues can exist within communities as well. Kirby (2003) found that individuals reported challenges of living in close association, though “all of those interviewed (18 of 18) expressed that the benefits outweigh the drawbacks” (Kirby, 2003, p. 329). If differences and confrontations are not adequately address, they can lead to “…resentment, isolation, and non-communication even in the midst of closeness. For example, some felt challenged by the unequal participation in upkeep or other community obligations, and the perception of unequal participation. Differences in standards of upkeep, cleanliness, and organization tend to affect those with higher standards more negatively and create resentments” (Margolis & Entin, 2011, p.10).

Getting work done in a way that is viewed as equitable and just is one of the greatest challenges for many communities (Margolis & Entin, 2011; Mulder et al., 2006).

“The problem was stated in many ways: fulfilling work obligations; work motivation; teams taking the leadership necessary to getting projects done; completing what was started; managing the workload; meals preparation. Closely related is the lack of trust by some that things will get done; the lack of trust that people are participating and contributing as much as they can; following through with consequences and support when people are having trouble participating enough; and accepting different levels of involvement and participation” (Margolis & Entin, 2011, p. 9). Indeed, Mulder et al. (2006) found that “a full 10% of a resident's happiness is determined by their satisfaction with how fairly a community divides up jobs and acknowledges effort” (p. 18).}

Intentional communities face difficulty in achieving both ethnic and social diversity. They are composed of mostly white, middle-aged, well-educated, middle-
middle class residents (Kasper, 2008; Meltzer, 2000; Margolis & Entin, 2011; Walker, 2012). There are a disproportionate number of adults in their thirties and forties, as compared to all other groups, and a dearth of residents in their twenties (Meltzer, 2000). Specifically regarding cohousing, Meltzer (2000) found that:

“Most cohousing groups have limited diversity of background. In the groups studied, the vast majority of members are of European descent (95%), whilst most adults have a university education (80%). These data, in combination with moderate-to-high personal income levels... place cohousing residents squarely within the white middle class.”

Intentional communities may also be prohibitively expensive for adoption for a wider audience. Margolis & Entin (2011) found that “many lower and moderate-income families and individuals simply cannot afford to purchase a cohousing unit” (p.11).

Meltzer (2000) found that cohousing is “generally no more affordable” than typical housing in the United States.

Lastly, Moos et al. (2006) warned that many ecovillages are “built on greenfield sites that contribute to leapfrog style sprawl” (p. 197).
Chapter 3

Problem Statement

There is growing concern amongst scientists and policy makers about human induced threats to the life support systems of the Earth. The Millennium Ecosystem Assessment published in 2005 found that, over the past 50 years, human induced change to ecosystems has resulted in a “substantial and largely irreversible loss in the diversity of life on Earth” (p.15). Moreover, the degradation of ecosystem services may grow much worse in the upcoming future (MEA, 2005).

The spread of globalization has also contributed to the erosion of social institutions. Putnam (2000) found a decline in social interaction and civic engagement over the course of the last sixty years, noting that

“...there has been an increasing sense of the breakdown of community principles as modern life has become ever more segmented. This has resulted in feelings of isolation and disconnectedness, and further withdrawal from traditional forms of political and social participation” (p. 4).

Ecovillages may offer a solution to both of these problems. The ecovillage movement is an attempt “to integrate a supportive social environment with a low-impact way of life” (GEN.org).

However, researchers in the field of landscape architecture have so far largely ignored ecovillages. A search of published titles containing the term “ecovillage” for the last ten years of Landscape Journal and Landscape Urban Planning Journal returned no results. This study is an attempt to understand what application scientific understanding of ecovillage communities may hold in the field of landscape architecture.

This research is guided by several main questions:
1) What does the landscape of an ecologically conscientious community look like?

2) What role do collective values play in influencing the physical landscape of ecovillage communities?

3) Do these values change over time as understandings of ecological conscientiousness grow? If so, does the physical landscape follow suit?

4) Can the ecovillage model allow humans to work cooperatively with their local environments to live in a way that can be maintained into the indefinite future without compromising ecological systems?

5) How can these findings be applied to more mainstream community development models?
Chapter 4

Methods

This chapter presents the methods used to gathering data and information regarding resident’s perceptions of ecosystem functions and sustainable practices at ecovillage communities, and a comparison of findings with the stated mission or purpose of each community.

Site Selection

The word “ecovillage” has neither inherent meaning, nor any restriction on its use. Since the term has been used to describe a wide range of communities and collective living arrangements, it was necessary to limit the scope of the possible communities for investigation to include only those that met the criteria outlined in Kozeny’s (1992) definition of an ecovillage of being “human-scaled” and “full featured.” I chose to focus on mid-scale, ecologically-minded communities whose design and social structure represent a departure from mainstream community development. The communities considered for study were limited to those that:

1) explicitly use the term ecovillage in advertising or describing the community;
2) have a mission statement, a set of bylaws, or established guidelines which emphasize or demand a commitment to ecological principles;
3) have been in continual existence for at least 10 years;
4) have at least 50 full-time adult residents;
5) would allow site visits for observer/participation for a period of at least two weeks and would allow me to conduct interviews with residents.
Through these constraints, two ecovillage communities were identified in the eastern half of the United States for examination (Fig 4-1). The communities chosen were:

1) Twin Oaks Community, Louisa, VA; and
2) The EcoVillage at Ithaca, Ithaca, NY

Fig. 4-1. Map showing the location of the two communities chosen for study.

Mixed-Methods Approach

In order to answer the questions outlined in the problem statement portion of this document, a qualitative mixed methods approach was devised that included participant-observation, key-informant interviews, evaluative mapping, and document-based analysis.
Participant-Observation

Contact was made with visitor coordinators at each of the selected site, and arrangements were made for site visits. Ecovillage at Ithaca was observed for a period of two weeks from July 25 to August 8, 2012, and a visitation period was conducted at Twin Oaks for a three-week period between August 10 and August 30, 2012.

During my visitation periods, I lived in each ecovillage and participated in community life in a variety of ways, including community work opportunities, community and social events, and less formalized social interaction. At EcoVillage at Ithaca, community work opportunities included weeding gardens, helping a family pack and load belongings as they prepared to relocate from the village, helping to prepare for and lead a student field trip around the community, helping families to set up a potlatch event, cleaning of the common houses, and preparations for a communal meal. While this work was not an explicitly outlined component of participant-observation, it was a useful opportunity to make connections with ecovillage residents. During my stay, I circulated a flyer, advertising and exchange of one hour of my labor for an approximately one hour-long interview. This approach was useful for gaining access to residents, some of who admitted to feeling a certain degree of “research fatigue”. I also attended numerous community events including several communal meals, a birthday party, a musical performance, a presentation on a resident’s recent vacation, as well as numerous spontaneous gatherings, including nature walks and a late night swim in the pond.

At Twin Oaks, the community offers a three-week visitor period so that interested individuals can experience what community life is like. Any person interested in joining the community as a resident must undergo the same visitor program as a prerequisite for residency application. During the three-week stay, all visitors take part in
work within the community, and are expected to fill a work quota of 42 hours per week - the same as any full time resident. Work opportunities were numerous, and included tasks as varied as: weaving hammocks, picking vegetables, preparing meals, planning a party, cleaning bathrooms, making tofu, processing seeds, attending informational meetings, transporting trash to the dump, canning tomatoes, preparing an outdoor site for a conference, and many other tasks. Additionally, the researcher took part in various social events such: as a yoga class, a party at a neighboring community, a movie night, several games of ultimate Frisbee, night swimming at the pond, nature walks, a sauna, and dozens of common meals.

These experiences, as well as many less formal encounters and observations, helped to inform an understanding of the community and the relationship to their landscape.

**Key informant Interviews**

**Key Informant Selection**

During my stay at Twin Oaks, informal interaction was the sole method for recruiting interviews. When meeting residents, I expressed my research aims, and the need for interviews with residents who possessed expertise or special knowledge about landscape practices of the community. Several residents volunteered themselves for interview, while other residents were suggested as potential interview subjects.

At EcoVillage at Ithaca, two interviews were arranged through the village's visitor coordinator with founding members thought to have an interest in landscape related activities. Subsequent interviews were established through participation by the researcher...
in communal activities, through introduction by previous interviewees, and through responses to a flyer posted by the researcher advertising an hour of my work in exchange for an interview with those “interested in discussing landscape practices” at EVI (Fig. 4-2). Thus, the interviews resulted in a sort of key-informant snowball sample. Interviews were conducted with three founding members of the community, two residents who serve on the Land Partnership Committee (LPC), one former LPC member, a manager of one of the on-site farms, two sustainability educators, and a certified permaculturist.

Among those interviewed at Twin Oaks were the farm manager, the herb garden manager, the seed business manager, a dairy manager, the visitor coordinator, the poultry manager, a member who is currently establishing a sister ecovillage community, a land manager, a former land manager, and a commercial wildflower grower.

In total, twenty interviews were conducted with key-informants, with ten from each community, representing approximately 9.2% of the full time adult residents at EcoVillage at Ithaca, and approximately 11.1% of the full time adult residents at Twin Oaks. This approach may not have resulted in a representative sample of all those who reside at EVI. However, the focus of this research was on the landscape and landscape practices at EVI, and my research sought those with particular knowledge or expertise in this area who would best be able to answer the questions posed. That said, care was given to ensure equal voice to both male and female participants.

Participants were chosen had to meet the following criteria:

1) full-time resident of the ecovillage for a minimum period of 2 years;
2) over the age of 18;
3) expressed or demonstrated interest in landscape/sustainability/food production.
**Interview Process**

Prior to the interview, key informants were given an overview of the interview process, informed of the efforts to protect their anonymity (as outlined in conditions of IRB approval), and asked for consent to be recorded during the interview.

The interview consisted of a total of thirty questions, grouped into four sections; demographic/background questions, questions relating to the respondents perception of the mission or purpose of the ecovillage, and questions regarding the landscape and sustainability at the ecovillage.

Included were such questions as:

1) Does the landscape of the ecovillage demonstrate sustainable practices? If so, how?

2) How are decisions regarding sustainable landscape alterations made? Who makes them? How is this information shared with the community?

3) Would you call this ecovillage a “model” for sustainable development? If so, what particular physical elements of the ecovillage could be adopted by more mainstream community developments?

A complete set of interview questions can be found in the Appendix of this document.

One question asked key-informants whether they agreed or disagreed with a particular description of what defines an ecovillage. When asked this question, respondents were provided with a printed copy of this question and instructed to read along while I read the question out loud.

Interviews typically lasted from 45 minutes to an hour-and-a-half, depending on the length of response given by subjects. During this time, I took notes for later evaluation. Interviews were recorded on a digital recorder, and later transcribed.
Evaluative Mapping

Interview subjects were then asked to participate in an exercise designed to help me understand how the community members value, interact with, and are supported by their physical environment. For the mapping exercise portion of the interview, participants were provided with 11” x 17” color printouts of an aerial image of their respective ecovillage. Due to the availability of higher resolution images, as well as a site design that allowed for all dwellings to be shown on a single map, participants at EcoVillage at Ithaca were provided with two differently scaled maps; one which showed the entirety of the site, and one zoomed in to show a more detailed view of the residences and their immediate surrounding.

Participants were instructed that they would then be given a “five-minute crash course on ecosystem services” and then asked to mark on the map where they thought these services occurred. Participants were then asked to mark on the map the location where they currently were, in order to make sure that they could read the map correctly and were properly oriented. Once it was established that they were oriented correctly, participants were given a printed copy of the “crash course” on ecosystem services and asked to follow along while it was read out loud to them. The crash course consisted of definitions and examples of ecosystem services, as taken from the 2005 Millennium Ecosystem Assessment Report produced by the United Nations.

Once it was read in its entirety, respondents were given a purple paint marker and asked to describe out loud and to mark on print outs of their respective communities:

1) how and where their local environment may provide provisioning services to their community;

3) what, if any, steps have been taken by residents to modify, enhance, or alter these services;
4) and if and how shared community values guide such changes.

Participants were encouraged to mark the maps in any way that they wished, to make notes in the margins of the maps if they so felt, and also to ask questions if subjects needed clarification or further information about ecosystem services. Once the participant indicated they had completed marking all provisioning services, they were then given an orange paint marker and asked the same questions regarding supporting services. This process was repeated for each ecosystem service category with each once marked in a different color.

Data Processing

Interviews were transcribed using ExpressScribe software. During the process of transcription, any personal or identifying information was scrubbed or made anonymous in order to protect the privacy of respondents. Once transcribed, interviews were broken apart, sorted, and reassembled by interview questions.

Maps from the mapping portion were digitally scanned. Using Adobe Illustrator, the maps were traced to produce vector layers representing the participants’ response for each ecosystem service. These were analyzed in order to identify patterns in response, and illustrated through figures and drawings.

Document Analysis

For triangulation purposes, community documents were examined. These included mission statements, bylaws, planning documents, and first-hand accounts of
founding members. The purpose of such investigation was to understand what and how collective values were formed amongst founding residents, and if and how they have changed over time. Moreover, it was speculated that these documents would provide insight towards how collective values, once established and codified, directed human action in the physical shaping of the environment.

Data Analysis

Interview responses were coded, categorized and sorted in order to pull together related information and useful quotations within each question across all respondents, and, when applicable, across interview questions. Interview data from each respective ecovillage were kept separate in order to better understand how responses may differ between communities. Once completed, the categorized and coded responses were reassembled in an attempt to form a logical multi-person narrative response to the interview questions. Through this process, patterns and contradictions in response were identified. Takeaway points were gleaned from the data, and form the basis of the analysis, and are supported by related interview quotes.

Mapping data was analyzed for patterns in response within each community, and compared across ecovillages to understand similarities and differences in respective community values and practices, especially as related to the implementation or reevaluation of collective values. Mapping data was also analyzed to illustrate how concepts like proximity to and frequency of ecosystem services may impact local environments and access to resources.

The findings were then organized into different categories and subcategories for analysis. Findings were compared with information available through community
documents. Participant-observations were used to confirm, refute, add to, or expand upon these findings. Relevant interview quotes were highlighted to allow resident’s own voices to add depth and nuance to my findings.

The results were then organized into a cohesive narrative, aimed to:

1) provide an accurate portrait of each place;
2) triangulate official statements, expressed community values, and observed phenomena;
3) understand the relationship between the people, systems, processes, and the physical landscape; and
4) determine how collective values guide landscape practices.
Chapter 5

Case Study: The EcoVillage at Ithaca

Fig. 5-1. New York State map showing the location of EcoVillage at Ithaca.

Site Context

The EcoVillage at Ithaca is located in Tompkins County in the Finger Lakes region of New York State (Fig. 5-1). The 176-acre site is located on a former dairy farm 2.5 miles from downtown Ithaca, a vibrant city renowned for its stunning natural waterfalls, progressive social and environmental values, and as the home of Cornell
University. As of 2012, there were 109 adults and 58 children living at the EcoVillage (Walker, 2012).

The EcoVillage at Ithaca

“...has been recognized nationally and internationally for its pioneering work in developing a mainstream, green community that appeals to middle-class Americans while cutting resource use by more than half. It is the largest and one of the most well-known EcoVillages in the U.S.... While many contemporary design projects focus on mitigating the impacts of development using green infrastructure, the EcoVillage community has focused on preventing development impacts from the planning stages of the project” (Palmer and Manning, 2014, p. 3).

Fig. 5-2. Map showing the property limits of the EcoVillage at Ithaca.
In 1990, a walk across America, known as the “Global Walk for a Livable World,” was organized by activists Joan Bokaer and Liz Walker as a format to raise awareness about environmental issues. During this time, the two organizers first learned about the Danish model of cohousing, and felt inspired to form their own community near Bokaer’s hometown of Ithaca.

The parcel chosen for development (Fig. 5-2) had previously been slated for development into 150 homes on one-acre lots. However, the developer went bankrupt before development could occur. Walker (2012) wrote that the site had been chosen for many reasons, including

“...being close to the vibrant cultural, educational and economic life of Ithaca, having good agricultural land, having south facing slopes for solar gain [Fig. 5-3], and open meadows that required few trees to be cut down. It was also quite beautiful, with long vistas of the mountains beyond, and the city lights at night” (p. 61).
EVI held four “Land Use Planning Forums” between September 1992 and March 1993, “in which future residents, architects, landscape architects, students, professors, planners, ecologists and energy experts met in task groups” (Guidelines for Development: EcoVillage at Ithaca, 1993). Through these meetings, a series of guidelines for development was produced. On October 7, 1993, the EcoVillage Board of Directors approved community guidelines for the development of:

- residential neighborhoods
- agriculture
- transportation
- energy
- water and wastewater
- natural resources
- recreation
- solid waste
- culture
- diversity
• and education.

These guidelines provide much of the founding vision upon which the community was based, and acted documented the community’s commitment to shared ideas and values. What follows is a summary of the most important information regarding landscape and site planning from the official community document known as the Guidelines for Development: EcoVillage at Ithaca.

**Residential Neighborhood Guidelines**

Goals for the neighborhood included the creation of community within both individual neighborhoods and the village as a whole, while also maintaining privacy for the residents. Other goals were to support sustainable relationships among residents; to establish a sustainable relationship between human habitation on the land and the living matrix of plant and animal life; to encourage pedestrian and bicycle circulation, and to restrict vehicle access into residential areas; and to maximize open space.

In order to achieve these goals, a series of objectives were created. First, it was determined that housing would be clustered, with a maximum area of two-and-a-half to three-and-a-half acres per neighborhood. Each neighborhood would accommodate 25-35 houses, plus a Common House that included facilities for community dining, laundry, and other neighborhood-wide activities. The neighborhoods would surround an open, vehicle-free village green, and be tied together by a continuous pedestrian loop that passes through the central part of each neighborhood. Neighborhoods would have a pedestrian emphasis, and exclude automobiles. Parking would be limited, and relegated to the periphery of the neighborhoods (Fig. 5-4). The village would provide for the opportunity for residents to work from home, and support cottage industries.
The first neighborhoods were to be modeled after Danish cohousing precedents. All future neighborhoods would have the freedom to plan their neighborhood’s housing, exterior spaces, and amenities according to their needs and desires, but they must provide at least as much basis for community as co-housing. All future neighborhoods must support the needs of children, the elderly, and the differently abled.
Agricultural Guidelines

A goal was established to produce a substantial part of the food for Eco-Village on-site, including a diverse range of fruits, nuts, and vegetables, with the possibility of eggs and dairy products. Additionally, EVI would strive to develop, demonstrate, and teach sustainable technologies and methods, including organic farming with minimal use of fossil fuels, and building long-term soil fertility. Economic vitality and affordability were to be sought through providing livelihood for people and by providing affordable food. Emphasis would be given to fostering natural systems and native species, and community involvement would be encouraged as a focal point for raising awareness of the resident’s ties to the land.

Transportation and Circulation Guidelines

It was determined that the community would encourage pedestrian and bicycle circulation, and the reduction of the impact of motor vehicles.

Energy Guidelines

The goal was specified that EVI would demonstrate a comprehensive approach to more sustainable energy use. Objectives included the reduction of energy consumption through efficient transportation system and strict conservation practices to minimize energy use. Energy would be provided by the most environmentally benign sources, particularly renewables including solar, wind and biomass. EVI would seek a smooth transition toward renewable energy while maintaining an acceptable level of comfort and convenience.
**Water and Wastewater Guidelines**

The community aimed to create systems in which as much water as possible will be recycled on-site, and to minimize water use through strict conservation practices, allowing water to be supplied in sustainable quantities. Furthermore, water systems were to be designed for the “relatively wet” climate of Ithaca, NY.

**Natural Resources and Recreation Guidelines**

Goals were stated to preserve, restore, and create natural areas to the greatest extent practical, including wetlands and woods, to foster non-human life and vitality and diversity. Objectives included the establishment of wildlife habitat preserves, and a rich interface for pedestrian interaction with natural areas through an extensive system of trails. Access to the trails and preserves would be open to all, while also ensuring some measures for the privacy of residents. Care was to be given to regenerate the forest through extensive plantings in designated areas. The guidelines also called for the creation of a Natural Resources Archive to gather information about natural areas as they are named and developed historically.

**Solid Waste Guidelines**

Goals were established to reduce the amount of solid waste generated on-site, and to promote reuse, recycling and composting. This was to be accomplished through the support of village-wide bulk-buying programs, the provision of convenient facilities for source separation and composting, and the reuse of unwanted goods and materials. An
objective also called for exploration into the feasibility of an on-site material processing and recovery facility, and the development of a market for recovered materials.

**Cultural/Ethnic Diversity Guidelines**

The guidelines sought the creation of a living and working community that would reflect the diversity of the City of Ithaca and Tompkins County, and include groups seeking to maintain or create a distinct cultural identity.

**Education Guidelines**

Goals were set for EVI to serve as a venue for education about sustainability in all its aspects; to provide a source of inspiration for people who would like to replicate the model of EcoVillage; and to support educational programs, including continuing work with Cornell classes, international conferences, week-long workshops, summer apprenticeships, an alternative elementary school, and other programs. A research center, known as the EcoVillage Education and Research Center, would be built to support research activities, such as permaculture applications, aquaculture, bioshelter design, building materials, and other activities. Facilities would be built in phases as resources become available.
The Neighborhoods

The First Resident Group, known as FROG, was constructed in 1992. It was designed with community input by local architect Jerold Weisburd and his wife, Claudia.

Fig. 5-5. The courtyard at SONG, modeled after Danish cohousing design principles. Image source: Neighborhood. Digital image. Neighborhoods | EcoVillage at Ithaca.

As described in the Guidelines for Development, the neighborhood was built around Danish cohousing principles (Fig. 5-5). It featured thirty clustered townhomes around a shared courtyard, a 5,000 square foot common house, parking restricted to the periphery of the neighborhood, and shared pathways.

The residences are individually owned, and feature amenities typical to conventional homes such as kitchens and baths, “but residents also have access to extensive common facilities such as open space, community gardens, play areas and a
community center called a common house with a neighborhood laundry” (Palmer, 2014).

The homes range in size from 900 square feet to 1,650 square feet (Walker, 2012).

The Second Neighborhood Group, known as SoNG, was constructed in 1996. It features 30 homes, again designed based upon the Danish model of cohousing and with community input. Rod Lambert, a FROG neighborhood resident and builder, built SoNG neighborhood. Although it is organized in much the same fashion as the first neighborhood, the second neighborhood differs in two notable ways. First

“An early decision made was to spread the houses further apart than FROG in the site plan. This has led to a noticeable difference in interior space between the two neighborhoods. There is more gathering space for children to play, and for neighbors to hang out together. At the same time, the spacing cuts down on some of the natural daily interactions between neighbors across the street” (Walker, 2012, p. 12).

Secondly, the homes in SoNG are significantly larger than those of the first neighborhood.

Site preparations for a third neighborhood, known as TREE, began in 2012, and construction of homes began in 2013. Plans for the third cohousing neighborhood call for standardization of design and building, going back to the FROG model (Walker, 2012).

In total, the entire built form of EcoVillage at Ithaca is contained within a 10-acre footprint, and the rest of the land remains as dedicated open space.

“The decision to draw the houses together and cluster the community in the midst of an open and wild landscape creates a living metaphor for the ecovillage philosophy. The compactness of the dwelling space amid the immense openness of the natural environment serves to turn the attention back toward the village itself. The houses look inward to the central ribbon that connects them, a safe, pedestrian space that encourages chance encounters. In such a setting, establishing and maintaining connection with others becomes easier. The houses also look outwards, away from the community to the land amid which they sit, the gently rolling hillside and the distant forested landscape. A sense arises from this of the place the community in the wider natural setting, and the responsibility that this implies toward the natural environment. The absence of traffic in the village, and the paved roads that accompany them, bring nature right to the door” (Kirby, 2003, p. 326).
The concentrated building footprint and preserved open space greatly contribute to
the overall sense of place at EVI.

On-Site Agriculture

Fig. 5-6. A CSA share from West Haven Farm. Image source: *CSA Share*. Digital

EcoVillage at Ithaca is home to two successful commercial scale organic farms.
Both farms lease land from the non-profit for the cost of the taxes paid on the land. In
1992, two residents founded West Haven Farm as a 3-acre Community Supported
Agriculture (CSA) operation (Fig. 5-6). The site has since grown to encompass 10 acres.
West Haven Farms provides fresh produce to 250 shareholders per week, and also
operates a popular stand at the Ithaca Farmer’s Market on Saturdays during the growing
They grow over 250 varieties of vegetables, fruits, flowers, and herbs. The farm is certified as organic by the Northeast Organic Farm Association (NOFA). West Haven has plans to expand the farm to 22 acres in the near future “to allow more land to lie fallow between plantings, as well as to expand the existing orchard” (Walker, 2012, p.8).

Kestrel’s Perch Berries is a five-acre U-Pick farm with six kinds of berries. The owner is also an EcoVillage resident. The farm is also set up as a CSA, and is frequented by customers from around the area (Walker, 2012).

**Open Space/Natural Areas**

Natural areas include approximately ten acres of forest. Additionally, another 15 acres of meadows are being encouraged to become woodland through the process of succession. The remaining areas, which comprise about half of the entire property, are designated for agricultural use (Fig. 5-7). Fifteen acres are currently being used as farmland, with plans to extend agricultural production to an additional twenty-two acres (Walker, 2012).
Academic and Scientific Research

Due in part to their partnership with academic institutions, as well as rigorous effort on their part to serve as demonstration community for research, a growing body of scholarly research on EVI exists. Though much of this work may be useful in developing an understanding of certain characteristics and phenomena of some ecovillage communities, and perhaps even intentional communities as a whole, the findings of the following academic research are unique to the EcoVillage at Ithaca, and may not necessarily be reliable when taken out of context. Therefore, the academic research that is
specific to the EcoVillage at Ithaca is presented within the case study portion of this paper.

Quantitative Measures

Moos et al. (2006) compared the ecological footprint and other environmental measures of households at EVI with estimates of the original one-acre subdivision plan, as proposed by the site’s former owner. The study found that the landscape plan at EVI resulted in substantial differences in landscape performance and resource consumption from the original subdivision plan.

The original development, known as Rose Hill, was planned as a fairly typical suburban development. The plan would have

“...completely covered the site with roads, garages and houses. He left 10 percent of the site for open space, as mandated by the town of Ithaca. Thus, by developing EcoVillage, we were in effect preserving green space and farmland that would otherwise have been paved over” (Walker, 1996, as quoted by Moos et al., p. 208).

The design of EVI, however, “preserves lands in a way that allows linkages of different ecosystems to remain intact,” such as the waterways that flow through the site, as well as the preservation of farmland and woods. The Rose Hill subdivision “would have acted like a large barrier to what are otherwise mainly large tracts to agricultural and wooded land in the surrounding area” (Moos et al., 2006, p. 211).
Additionally, the increased density of the ecovillage plan resulted in more open space, and less land consumed through development. The homes at EVI are much smaller than in those proposed by Rose Hill. Even the largest homes at EVI are smaller than the smallest homes at Rose Hill. The total footprint of buildings at EVI was found to be 3.0 acres, less than half of the 8.2 acres used at Rose Hill for the same number of units.

Private yards at EVI are miniscule—only 0.1 acres. At Rose Hill, private yards are the largest use of land at 117 acres total, the exact same figure as public open space at EVI. Due to the restricted use of cars at EVI, it also featured about only one fifth of the amount of land necessary for roadways and parking (Moos et. al, 2006).
Table 5-1: Physical Footprint of EcoVillage at Ithaca vs. “Rose Hill” Development. Figures taken from Moos et al. (2006).

<table>
<thead>
<tr>
<th></th>
<th>Ecovillage at Ithaca</th>
<th>Rose Hill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of units</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>Unit size</td>
<td>900 sf – 1,650 sf</td>
<td>1,875sf – 2,625 sf</td>
</tr>
<tr>
<td>Buildings</td>
<td>3.0 acres</td>
<td>8.2 acres</td>
</tr>
<tr>
<td>Private yards</td>
<td>0.1 acres</td>
<td>117 acres</td>
</tr>
<tr>
<td>Roadway and Parking</td>
<td>5.3 acres</td>
<td>25.3 acres</td>
</tr>
<tr>
<td>Public open space</td>
<td>117.6 acres</td>
<td>10.0 acres</td>
</tr>
</tbody>
</table>

This study also found drastic reductions in per capita resource consumption at EVI as compared to regional averages. Compared to Rose Hill, the per capita EcoVillage at Ithaca figures represents a sixty percent reduction of natural gas consumption, a forty percent reduction in electricity use, a fifty-six percent reduction in water use, and a twenty-nine percent reduction in fuel use (Moos et al., 2006).
Table 5-2: Resource Consumption of EcoVillage at Ithaca vs. “Rose Hill” Development. Figures taken from Moos et al. (2006).

<table>
<thead>
<tr>
<th></th>
<th>EcoVillage at Ithaca</th>
<th>Regional Average</th>
<th>% Reduction at EVI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Gas</td>
<td>15.7 CCF/mo.</td>
<td>26 CCF/mo.</td>
<td>60</td>
</tr>
<tr>
<td>Electricity</td>
<td>138k/mo.</td>
<td>232k/mo.</td>
<td>40</td>
</tr>
<tr>
<td>Water</td>
<td>1000 gallons/mo.</td>
<td>2300 gallons/mo.</td>
<td>56</td>
</tr>
<tr>
<td>Fuel</td>
<td>32 gallons/mo.</td>
<td>45 gallons/mo.</td>
<td>29</td>
</tr>
</tbody>
</table>

The design of the homes were responsible for much of the savings in energy:

“All homes are duplexes, which are grouped in four south-facing clusters. All homes have crawl-spaces, and are linked by pipe chases to one of four “Energy Centers” which contain central natural gas-fired boilers that heat hot water (for back-up space heating and domestic hot water) for homes on an on-demand basis. The energy centers allow for a type of district heating, in which each cluster of six to eight units share the hot water, and there is only one utility hook-up, thus saving thousands of dollars in meter charges annually for the neighborhood. Energy use is sub-metered, and billed by the Cooperative on a per household usage basis. This system takes all of the combustion out of the homes, contributing to excellent indoor air quality. It also has the advantage of allowing the neighborhood to easily retrofit to a renewable fuel system in the future, by only changing the fuel source of the four energy centers” (Walker, 2012, p.12).

Smaller and better-insulated buildings, low-flow toilets and faucets, and native landscaping with very little lawn area were found to have contributed to the reduced water consumption. The site development at EVI “…reduces irrigation needs for turf by 95% compared to the conventional residential subdivision planned for the site.

EcoVillage contains only 3.62 acres of turf” (Palmer & Manning, 2014, p. 2). Moos et al. (2006) found that “indeed, it would appear that many differences between EVI and the regional average for the utility component of the EF are due to design” (p. 215).

Much of the savings in gasoline consumption have been attributed to EVI residents working on site, with estimates of 26% to 45% of residents working from home (Whitfield, 2001; Moos et al., 2006; Walker 2012). Community practices of car sharing,
the wide availability of communal activities available on site, and the restricted use of vehicles within the community have also facilitated lower car use (Moos et al., 2006).

“As such, it is difficult to know how much of the savings in transportation can be attributed to design, but it seems reasonable to suggest that design plays a role.” (Moos et al., 2006, p. 215-216).

The study by Moos et al. (2006) resulted in three main findings:

1. Compact developments like EVI are “likely to result in lower environmental impact than… estate-style developments… entirely because of built form.”

2. The behavioral patterns that exist within communities are “as important, or possibly more important, than physical parameters” as related to their environmental footprint.

3. Although “interest in creating community for social reasons outweighed environmental considerations as a motivating factor in relocating to the village...” (see also Kirby, 2003) “communal activities that many residents value also appear to play a role in decreasing environmental impact (Moos et al., 2006, p. 216).

Additionally, the landscape at EVI provides excellent stormwater retention and significant sequestration of carbon. The site

“...retains 100% of storm water runoff from developed areas of the site for up to a 100-year storm with no impacts on or connections to the municipal storm-sewer system... The site runoff is infiltrated through sheet flow through meadows or captured in a manmade stormwater wetland...” (Palmer & Manning, 2014, p. 3).

In the first two neighborhoods, stormwater is directed to and collected in a one acre pond capable of detaining 1.8 acre feet of runoff. The runoff is treated through “filtration, sedimentation, biological removal and particle retention across the natural vegetation of lawn and meadow” which improves water quality (Palmer & Manning, 2014, p. 3). Additionally, EVI shows significant reduction in stormwater runoff, as compared to the original plan to develop the site into one-acre subdivisions. EVI:

“...generates an estimated 61% less runoff than the conventional residential subdivision proposed from the site. Predicted runoff for EcoVillage is 42.1 acre-feet per year compared to 108.3 acre-feet for the conventional subdivision. [The
reduced runoff rates lead to a decrease in...annual nitrogen loads by an estimated 14%, phosphorous by 32%, and suspended solids by 10%, compared to the conventional residential subdivision proposed for the site” (Palmer & Manning, 2014, p. 4).

The design of EcoVillage at Ithaca is responsible for other environmental benefits. The development strategy at EVI “avoided the release of approximately 1,330 tons of CO2 by preserving 20 acres of woodlands” which are responsible for the sequestration of 43 tons of carbon dioxide each year (Palmer & Manning, 2014, p. 4). Ground-mounted solar arrays produce about 60,000 kWh per year, more than 40% of the energy used in the FROG neighborhood (Palmer & Manning, 2014).

Additionally, there has been found to be significant cost saving associated with development at EVI. “The EVI development’s estimated cost is $2.4 million for materials and activities related to the site and landscape. A conventional suburban development of 100 homes would cost $8.3 million for the site/landscape. This represents a 70% savings” (Palmer & Manning, 2014, p. 3).

The Mission or Purpose of the Ecovillage

The official mission statement of the EcoVillage at Ithaca is

“to promote experiential learning about ways of meeting human needs for shelter, food, energy, livelihood and social connectedness that are aligned with the long term health and viability of Earth and all its inhabitants” (ecovillage.org).

During the interview process, residents were asked to describe what they felt was the mission or purpose of EVI. The responses were generally aligned with the village’s official mission statement. More than half of the respondents emphasized EVI’s mission to demonstrate or model sustainable development by living through example. Half referenced the goal of using fewer resources, or otherwise living lightly on the land, with
three specifically using the word “sustainable” or “sustainability” when describing this idea. Other responses included the outreach and education; living with an ecologically-focused intention; living happier or more fulfilling lives; the creation of community; preserving open space; wildlife preservation; and the creation of an alternative culture.

When asked how the mission/purpose related to the idea of sustainability, half of the responses expressed the idea that the goal of living sustainably was experimental in nature, or that sustainable living was an ongoing process of learning. In answering this question, responses included both physical characteristics and social components. The physical characteristics mentioned of EVI included: the production of local food; the clustered design of the houses; having a smaller physical footprint in the landscape; the preservation of wildlife habitat and farmland; shared energy systems for heating and cooling of buildings; and the sharing of resources.

Responses that suggested the social components of sustainability included: creating an alternative model for living; increased social connectivity; the spreading of information about sustainable living through education; improving or creating a culture of sharing; building trust amongst people; creating a relationship with nature; and serving as a source of community inspiration.

Self-development

Many residents viewed the creation of the community itself, particularly the model of self-development, as a successful and necessary first step towards sustainable living. As noted earlier, the residents who currently inhabit the community designed EVI, in large part. The model of participatory development was instrumental in all stages of development: from the initial vision, through the planning process, the construction of
each individual neighborhood, and the maintenance of the site today. This model of
development stands in stark contrast to the typical developer model, as clearly evidenced
in the current site design as compared to the original 1-acre subdivision development
proposed by the site’s previous owners. Without the concerted effort of this group to
come together and create a vision of ecologically oriented development, this site would
very likely have been developed in the typical fashion of urban sprawl.

Many residents expressed that community-directed development has not been an
easy process. The initial planning phase of the ecovillage faced many difficulties,
including: disagreements of where to build the community, exhaustive hours spent in
meetings and discussions, financial insecurities, difficulties in creating common vision,
cost overruns in the building phase, regulatory hurdles and bureaucratic red tape (Walker,
2005). Despite these difficulties, EVI has successfully navigated the model of self-
development through the construction of three neighborhoods.

“What I find impressive is the level of planning that has gone into building a
community like this. Ordinary people: schoolteachers and computer people, one
or two engineers, a doctor, a lawyer, a couple farmers, and people in
construction. You’ve got a range of professions… and everybody comes together
and becomes their own developer.” – EVI 8

This idea of strangers coming together was repeated several times when
interviewees spoke of the initial stages of building the community.

“There were a lot of difficulties in the beginning. I feel like even this
neighborhood went through a difficult time when it was all new, and I think the
way that we’ve worked through that where we all feel like a family, feel really
close now, and feel the whole energy here is much better. I think that is a real big
achievement.” - EVI 8

“The model of development, where individuals get together and plan and put up
the money and basically self-develop the neighborhoods is amazing that it works.
You really can’t take away from the accomplishment of the many ways this place
could have failed to gel, so I really have a lot of admiration for the people who
put it together.” - EVI 1
One of the original guidelines for development stated that neighborhoods would be organized around the Danish cohousing model. These guidelines resulted in the tight clustering of homes around a common courtyard (Fig. 5-9), the creation of a Common House, the restriction of vehicles to the periphery of community, and a series of shared pathways to provide pedestrian circulation. These features are intended to promote social interaction by providing opportunities for neighbors to stop and chat. The desire for a strong sense of community was a motivating factor for several of those interviewed to relocate to the EcoVillage at Ithaca.

“For me, the initial purpose was community, and we really have people who care about each other… and go out of their way to make sure that others are doing okay if they think they might not be. We had one member [who was] dying. She had people invited over, and it was just so touching the way she shared what her experience was and people listened and cared about her. …[T]he women here in particular just go out of their way to find out how the seniors or people who struggle health-wise are doing. There is an actual seeing of that caring manifested.” – EVI 3
One resident, who was not a founding member, spoke about the benefit of relocating into a well-developed social community.

“It’s really hard to work together with people. I have seen so many stupid squabbles or lack of process or not enough shared vision. We’re not well trained in how to bring our passion to something and also leave our ego and need to control all these other things behind. So, I’m impressed with the frequency which good things happen among groups of people here. I’m a little cynical about human nature in general, and living here reinforces that cynicism in many ways, but it also shows there are real alternatives if you can get the right culture. I feel lucky to have inherited a pretty functional culture that way.” - EVI 1

This creation of community has helped to foster individuality amongst residents at EVI.

“We’ve learned a lot on how to do participatory democracy and reach a skill level where it’s not tedious and draining. That’s the key thing. People are afraid that if they have to collaborate or make decisions together or live together that they are going to get strangled by regulations and loss of freedom. That they are going to lose the wanted American individualism that they have. I think that we have enough of a track record to show that you actually become more differentiated, that you actually become more robustly yourself when you are around other strong people. You’re actually rubbing off on each other, you don’t lose who you are. You bring out more of who you are [when living in community] than when you are protected by your garages, your fences, and your lawn. You don’t really bring out your best deepest and highest self in that environment.” - EVI 10

For some residents, this “deepest and highest self” is expressed through a desire to restore and strengthen the relationship with the local environment. Because the community is tasked with environmental stewardship, those with a particular interest or knowledge about land management are able to gain leadership positions through empowered committees, and exert greater influence over the landscape practices of the entire community.

One such development was the creation of the Land Partnership Committee (LPC). Prior to its creation, individual neighborhoods or land owner groups made decisions regarding land use and practices. The LPC was established so that one committed and informed group can examine the landscape, in totality, and make
recommendations regardless of which entity owns the land. They are tasked with restoration of ecological conditions that have been degraded by years of conventional farming. According to the community’s website (ecovillageithaca.org), the chief goal of the LPC is to preserve and restore wildlife on their lands in a number of ways:

- by consciously and consistently learning about the land we live on, the living things we share it with, and the interactions and ecosystems that hold it all together
- by sharing our learning with our fellow villagers, nurturing their interest in and understanding for the land
- by developing a land-use plan that includes a healthy and extensive forest cover as a climate buffer
- by creating wildlife habitats (including woods and wetlands) to the greatest extent possible
- by implementing a species management plan
- by establishing respectful interrelationships between human habitation on the land and the living matrix of our surrounding plant and animal life.

One resident spoke about how groups like the Land Partnership Committee help to strengthen knowledge within the community:

“We also know who really cares about this stuff, and who is getting smarter at it in an accelerated way. We have more expertise. There are more people watching it for longer, and more consultation with outside experts. We have more internal expertise that is going on, and more involvement.” – EVI 10

The EcoVillage at large is informed by the work of the LPC. Through this relationship, the concerted effort of a small but concerned committee can inform the collective community. Several respondents expressed noticing a “greater awareness,” or a “more sophisticated understanding” of the “relationship to the landscape,” as well as an increase in “internal expertise” during the years since the community was first formed.

“I think that we’ve gotten a more sophisticated understanding of our relationship to the landscape than we had. Not everybody, but certainly that has been a gradually improving process. I think that people are more sensitive… People are more prone to notice impacts, and to think things through a little more carefully before they more through with stuff. There has been a gradual process of mutual education around it.” – EVI 10
Residents cited changes in specific land management practices, including changes to the management of the grassland meadows. Initial efforts were focused primarily on keeping all open meadows mowed on a rotating schedule. Currently, however, strategies are being employed to designate and program the meadows for a range of use, including the planting of fruit trees, the establishment of native grasses, and promoting the process of succession.

“We are trying to keep certain areas of the land clear, and we’re trying to allow other areas to go through natural succession and become woodland again. I think our understanding of that has grown over time.” – EVI 9

Residents also suggested an increase in the focus of agricultural pursuits, and an increased application of permaculture principles.

Several of the interviewees expressed the idea that all aspects of community life were improving as residents gained experience working together. As one resident expressed simply:

“The longer we are here doing this stuff, the better we get at it.” - EVI 5

The creation of new neighborhoods is also seen as an important source of new creative energy that further fuels the community’s environmental practices.

“I think, actually, that having TREE come into the mix is going to be very energizing for people here. I know that it’s a little frustrating for people to have construction going on. There are some people who are not thrilled at all about the village growing. I think that it will be good having a new cohort of people who are very ecologically oriented and very spiritually oriented, I think more so than that the other two neighborhoods. There will also be more retired people, so there will be more people here who will have more time for gardening, for childcare, for doing special events, and for taking care of the land. Just as once SONG was developed, certainly there was a lot more attention to the broader mission of the ecovillage, I think that when TREE is developed, that will happen as well.” - EVI 9

Another resident had a similar view:

“I would consider the creation of the third neighborhood an element of our success. We are really going to be modeling very super efficient low-carbon usage buildings. Having the third neighborhood here is going to allow us to do a
lot more with respect to educating about the model that we have created…” - EVI 4

One founding member provided the observation that with the construction of new neighborhoods comes an injection of enthusiasm and energy that is vital for strengthening and expanding the ecological and social goals of the ecovillage.

“I have noticed that there is sort of a honeymoon period… where you have more burning souls coming forward, and then you have a settling-in effect. So it’s very dependent upon new people coming in with these passions.” - EVI 2

This model of self-development through enthusiastic residents is a vital driver of community development at EcoVillage at Ithaca. However, despite its merits, the community driven design process has its own shortcomings. One founding member expressed feelings of discord between the original vision and that that was ultimately built:

“Well, a master site plan for the whole village was once drawn up before anything was built. It was somewhat inspired, I think. It certainly was inspiring when people could see wetlands and fishponds. Very intricate, so it inspired people. In the beginning, it quickly became obvious that planning and reality were diverging farther and farther… I was sort of sorry to see the plan go, because it was fairly artistically done, and was replaced with something that I thought was more accurate, but clunkier and less inspiring.” - EVI 2

That said, responses, overall, expressed satisfaction with the community design process. In total, seventeen responses were coded in reference to the community design process, with fourteen noted as viewing the process positively, and three viewing it negatively.

The design of the community was influenced by ecological principles. Interview respondents noted that an extensive planning period lasted nearly two years before ground was broken on the site. This planning stage included a site inventory, where studies were conducted to map winds, drainage patterns, soils, and microclimates. As a result, care was taken to not build the houses on best soil.
“Before they decided where to put the buildings, they actually analyzed the soils. The location of West End Farm is one of the nicer views and a pretty nice place to have a neighborhood, but it also has the best soils. They took that [area] out of consideration for building homes because of that.” - EVI 7

Homes were clustered in the center of the property to maximize open space, provide scenic views, and limit the overall footprint of construction. No forested areas were cleared to make space for houses (Fig. 5-10).

Fig. 5-10. A map showing site features of EcoVillage at Ithaca, including the location of the densely clustered neighborhoods as they relate to the intact woods, open meadows, and community pond.

Efforts were made to preserve existing streams, wetlands, and swales. Wetlands were mentioned by four interviewees as providing an important function in cleaning and filtering water on site. Ponds and swales were constructed to help manage stormwater. A one acre-pond was created to capture and hold any stormwater runoff from buildings, as well as to provide wildlife habitat and recreational opportunities.

Several interview subjects expressed that the village was designed to maximize multifunctional usage.
“We try to minimize impacts by concentrating our footprint, and by concentrating resources. We take the water and we collect it, then it becomes a habitat for other wildlife and plants, and it has multi-functionality. One of the many ecological principles, which are also permaculture principles, is looking for ways to concentrate energy so that you can create multiple functions, rather than specializing in things and needing high-energy inputs. Like, taking the water and keeping it nearby, using [it] for fire suppression, habitat, and recreation.” - EVI 10

Similarly, the homes are all oriented to maximize passive solar gain. The houses are oriented with southern facing windows. Grape vines are planted on trellises and pergola structures to provide shade and privacy during the summer months, and allow light to penetrate in the winter.

Several EVI residents noted sustainable practices inherent to co-housing design, particularly those gained from having clustered buildings concentrated in one location such as increased open space that functions as wildlife habitat. Residents also cited energy efficient buildings, shared energy systems, and on site food production as sustainable practices.

The most commonly cited example of a sustainable landscape practice at EcoVillage at Ithaca was the clustered design approach to housing. Five of the ten interviews featured some iteration of the idea of:

“We’ve got 10% of our land focused on building and 90% open space.” - EVI 8

Many residents saw the fact that EVI has preserved so much open space while still providing a high quality of life as a major achievement.

“If you take the perspective of showing in an inspirational way that there is an alternative to suburbia that significantly reduces your impact and increases your quality of life, which I would say is the minimum bottom line mission, we have definitely shown that we don’t have to use up a lot of land to have a rich experience of land and community. In that sense, it is a success.” – EVI 10

The clustering of housing was cited as having many positive environmental benefits, including the reduction of the heat island effect. The most common benefit cited
by interviewees was that the concentrated building footprint allows for much more open space. Woodlands have been preserved, and are others are being restored. As noted above, a conventional one-acre subdivision would have likely eradicated any existing woodlands. So, too, have meadows been preserved. Residents value the recreational opportunities and the scenic views that the meadows afford. Additionally, the meadows provide space that is dedicated for current and future agricultural use.

**Food Production**

The next most commonly cited example of a sustainable landscape practice at EcoVillage at Ithaca was the growing of food on site, particularly through organic techniques. A common sentiment given was that food production improves the land while also improving the overall quality of life of the residents.

“We try to find ways of meeting human needs for food in ways that actually leave the land in better shape, primarily through organic techniques.” - EVI 1

Food is produced on several scales at EVI. Two commercial organic farms operate within the bounds of EVI: West Haven Farm and Kestrel Perch Berry Farm. Additionally, food is also grown on a neighborhood scale, as ecovillagers work together to grow vegetables in one of the several community gardens. Each neighborhood has its own community garden located within the respective neighborhood footprint. Interview responses indicate that, in addition to providing a place to grow food, the community gardens act as an important place for residents to socialize, share information, and to connect with the land.

“We see ourselves here as part of this whole robust local foods movement which is really emphasizing eating local. I think that is so key to the health of the environment and the health of the people on this planet.” - EVI 9
Additionally, many members grow food in personal gardens located outside their houses (Fig. 5-11). Each home is allotted two small beds, one in the front of the home in the shared courtyard, and one directly outside the back door. Only a few members grow vegetables in these plots, though many grow herbs for cooking.

**Permaculture**

Several of those interviewed cited a growing community interest in permaculture. One resident spoke of how community members worked together to develop an
underutilized plot of land into a permaculture based community garden, known as the Berm Garden.

“...This area here, it was basically just a pile of dirt left over from construction. Some of the people... wanted to develop it for gardening. So, we got a committee together, spent a fair amount of time envisioning what it should be, and made a proposal to the FROG neighborhood. One, can we use this land? And two, can we get some money to develop it? That proposal was approved, and money was set aside to do it. We hired a contractor to remove some of the trees that had been growing there and to flatten the land to extend the plateau, and make it more useable. The residents who were part of this berm garden then did sweat equity. To build the fence we hired one person who knew how to build fences... He bossed crews of us digging holes and putting up the fence. [It was] backbreaking labor, but it worked well.” - EVI 1

A team of residents, including three members who are certified permaculturalists, designed the Berm Garden.

**Incubator Farm**

The educational objective of EVI’s mission includes an agricultural component.

“We are doing a lot around organic farming. Not just modeling though the existing businesses we have, but educating about it through the non-profit corporation.” - EVI 4

The Land Partnership Committee has helped to launch a program called the Groundswell Center for Local Food and Farming, with the aim to make organic farming opportunities available to those who are interested, regardless of their background.

“[Groundswell is] another way of using the place to serve people who have traditionally been marginalized from the farming and agricultural world.” - EVI 10

“Groundswell is a fairly new program that has only started in the last three years, and it has really taken off very nicely. We do a lot of training of young people who are interested in farming. It includes a lot a teaching and demonstrating on our two farms, and farms around the area.” - EVI 9
Participants are allotted a quarter acre lot of the 5-acre deer-fenced site, and given shared access to a tractor and water supply. Mentorship is provided by experienced local farmers, who offer participants guidance in farming techniques and in the creation of viable business models and management skills.

The aim of Groundswell is to:

1) Create an environment that is inclusive of all cultures and backgrounds, and tailor training, mentoring, and policies to meet the needs of diverse producers with limited resources
2) Support the development of new, certifiably organic farm enterprises that enhance healthy growth of the regional food system
3) Offer a managed, experiential learning pathway for those with limited alternatives to gradually refine their farm business model, learn and apply necessary management skills, and position themselves for ownership of land and other production resources
4) Help bridge relationships between beginning farmers and diverse mentors, resource people, consumers, and markets, and further develop the peer network among new farmers in the area.
5) Support successful transitions of Incubator Program participants from the Incubator site to other farmland within the region (groundswellcenter.org/).

Interviewees viewed the Groundswell program as a means to empower others while also strengthening regional food security by supporting local organic farming. As one member said, “through Groundswell, there will be more farming.” - EVI 8

Environmental Partnership

Several interview subjects described the culture at EcoVillage at Ithaca as having embraced an attitude of peaceful partnership with environment.

“Probably the number one way is to try and leave the ecosystem operating, rather than dominating them out of existence. Layered on top of that is an attempt at stewardship of those spaces. We try to intervene for the health of the environment, but it mostly takes care of itself.” - EVI 1
An earlier strategy of simple conservation has been adapted to now provide stewardship interventions in order to promote and strengthen existing systems.

“Part of what we try to do is get out of the way of these natural systems and leave space them, to keep poisons and other things from interfering with them. If we do modifications to the land, [we] try to [have the modifications be] in support of life, more robust, more variety.” – EVI 1

“People had more of a hands-off conservation perspective, early on. Now, they have more of a hands-on, interventionist partnership perspective.” – EVI 10

One example of such an intervention included recruiting the help of a professional forester to assist in the creation of new wooded areas and promote the overall health of the existing forest.

“The other thing is the attempt to steward the forest. Our forests are actually pretty degraded. They were heavily logged and you can really see they’re really not that healthy. So, we’ve been trying to manage them in ways to bring them back. We’ve allowed some areas that had been farmland, particularly to the west of SONG, to start to go through the transitions of reforestation. It’s poplars now, but it’s starting to fade out and come to the next succession of trees. Part of what we’re doing is working with [a professional forester] to help us select species and do these plantings in the transition zone to… influence how this budding forest area develops.” - EVI 1

Another resident expanded on how the service of an outside expert was useful in educating the community, at large:

“We’re getting tutoring in forest restoration because this forest is fairly degraded. We have a regular contact with somebody who is very good at reading the forest and making interventions that are subtle but persistent and valuable in terms of increasing its health and diversity.” - EVI 10
Several members cited further reforestation efforts as an example of a successful community initiative that would likely continue into the future. The Land Partnership Committee was responsible for spearheading the plan, organizing tree plantings (Fig. 5-12), and establishing funds to continue the project as part of the yearly budget.

“We have [a] land partnership, which does tree planting events [utilizing] work parties that involve people working together… Our reforestation efforts are really starting to take off now. We are probably planting about 50-75 trees per year, paid for by the fees that all of the residents pay.” - EVI 4

“When we moved here, there were no trees. All the landscaping you see here, all the trees, we did all that. People from the community.” - EVI 7

“I think [it is a good thing] what we are doing with the Land Partnership Committee over the last two years with our tree planting parties… learning the land. That has been a real achievement. It’s lovely to see. We’ve planted over
fifty trees now, and we’ll probably be planting that many each year. We have this program in the budget, and I think that is just great.” - EVI 8

Most of the trees planted in at EVI were done so by volunteers from the community. EVI commonly employs a mechanism known as “work parties” as a means of capitalizing on on-site labor while promoting community involvement in landscape alterations. Work parties are coordinated events where many residents volunteer to work during a focused period, usually of an hour or two in duration. In some cases, contractors are hired to perform work, or to direct work parties.

“If [a group] feels like some work has to be done, somebody calls for a bunch of people to go out and do the job. Folks go out and do it.” - EVI 5

“...[I]f it’s a really decent sized project, somebody will put together and organize a work party. Work parties are great because, even at this ecovillage, most people are spending too much time in front of a computer or sitting at committee meetings… Then you have a work party and you have to dig together or build together. Something primal happens that helps you to connect at a tribal level. That is much more fun and interesting that what usually happens at when you are sitting at meetings. Work parties are a lot of fun. …[Committees] move the process forward, and then all of a sudden, Boom! Let’s do a tree planting. Suddenly you have 20-30 people to come out and get a lot done. Everything is ready for everybody. You take it and you go and work for an hour or two. You feel good, there is some lunch for you, maybe some pizza. Everybody feels like they did something great. You’ve put in 40-60 hours in two hours time.” - EVI 10

“You’d think that something called a work party is something that people would shy away from, but we all love them. It’s a chance to do community work together and play at the same time.” - EVI 9

The Land Partnership Committee is also making efforts to extend the notion of partnership to the larger community through establishing relationships with neighboring landowners in order to coordinate stewardship efforts that extend beyond property boundaries.

“Building connections with our neighboring landowners and their trail systems is going to help with the recreational aspects and the educational aspects of our landscape. We’ve got two big landowners, Cornell Plantations and the YMCA right next to us who are now paying more attention to their land. Collaborating
with them is going to allow us to be connected to a broader effort at taking care of the landscape.” - EVI 4

**EVI as a Model for Sustainable Development**

When asked if residents viewed EVI as a model for sustainable development, seven of ten participants said that it was, though half of the respondents gave some form of caution that the model is not 100% translatable, and may serve more as an inspiration than a direct model.

“‘I think that people can come here and get something from it in order to start their own communities. There is inspiration here.’” - EVI 2

“A developer could take a look at what we’ve done here and plan developments based on these concepts, if they were motivated to do so.” - EVI 5

One member agreed that it was a model:

“‘...but with the caveat that they should start by doing a proper permaculture influenced design to begin with.”’ - EVI 8

Another member said that EVI was not a model for sustainable development, though the disagreement was specific to the term “model.” That resident’s perspective was that most good solutions are very local and specific in nature, and cannot be directly translated. That resident did express that EVI can serve as a good resource for sustainable community design.

“I think that is a horrible word. It’s a useful example, a useful learning center, and inspiration, but, the word “model”, there is such a lack of humility in it.” - EVI 10

Two respondents felt that some aspects of the community served as a good model while others did not.

“‘Yes, in the sense of the physical environment. If in sustainable development you also include the sense of community, I don’t think that we are a model... [In] our social environment, we are not quite as advanced as we could be.”’ - EVI 4
“I think it is in many ways, and I think is has many area that are not up to model status. It’s a combination.” - EVI 9

Other residents very strongly felt that EcoVillage at Ithaca was a model for sustainable development, and that making a name or establishing a reputation was an important function of EVI.

“…[W]e are actually very well known within the ecovillages, the international community, we are so well known, and, I think, respected.” - EVI 8

“This place has developed a name for itself. A reputation that is worldwide. We were aiming for that from the beginning, but didn’t know how to achieve it. But, it has kind of happened on its own. I think it is largely because of a number of factors. One, it is a good place to live, so that speaks for itself. Another is that we really have consciously tried to integrate many different kinds of best practices into one holistic model that is a practical working model of trying to be more sustainable. Because it is set in North America, the United States, because it was consciously chosen to appeal to mainstream Americans, all of those things have made it highly visible.” – EVI 9

Indeed, EcoVillage at Ithaca has been recognized by the EPA as a model for sustainable development.

“[W]e were the recipients, along with Tompkins County Planning Department, of an EPA Climate Showcase grant. The grant is a three-year grant, and we’re a year and a half into it. We are trying to find ways to help replicate this kind of model.” - EVI 9

When asked what particular physical elements could be adopted by more mainstream communities looking to heighten their degree of sustainability, half of the respondents felt that a clustered housing approach could easily be applied to mainstream development, improving energy efficiency of the dwellings while allowing more land to be dedicated as open space. Three of the interviewees suggested developing with a central pedestrian zone, with cars and parking confined to the periphery. Three members suggested the incorporation of opportunities for sharing. One member proposed that even though sharing can create conflict, conflict can play a role in the development of community:
“Tool sharing. That would be a catalyst for working together on projects and deciding what tools they needed, and repairing them and maintaining them and you build community through that. You get a lot out of having those opportunities to come together instead of doing it together instead of doing it ourselves… And you could add in the squabbles, too, like, Shithead over there broke the sledge hammer and didn’t fix it. And so, you’re mad at them for it, but, hopefully, it starts a conversation.” - EVI 1

Communication was found to be an important component of EcoVillage that respondents felt could be adopted by mainstream communities.

“Having some type of gatherings, whether it’s committee meetings, or meals, or events where folks who are interested in a particular topic can get together and share their knowledge. Where people can learn from each other, or learn from others outside the community. And maybe also having some place where people can work together and learn from each other by doing things together.” - EVI 4

“We learn a lot when we do our meetings. We learn how to communicate and negotiate and make decisions effectively. We learn a lot when we are actually involved in a team… We see each other doing things, which is different than most Americans. It’s easy to see each other doing things. That is an important thing: visible proximity.” - EVI 10

Other ideas included: common infrastructure such as shared energy centers, space allotted for food production, green building techniques, renewable energy, and provisions for walking and biking.

The Land Use Process

There are layers of ownership at EVI, which dictate how decisions are made.

“Generally speaking, there are committees of residents who initiate projects. Someone will propose a change, or someone will want to make use of the land for a particular purpose. They’ll make a proposal, and it will be discussed in those various bodies.” - EVI 1

At the neighborhood level, small decisions are made by empowered committees that operate under guidelines reflective of the overall mission of the larger group (Fig. 5-13).
“There is now a level of trust, so that the small stuff they don’t have to bring to the large group. The bigger stuff they usually do bring to the group. The bigger stuff usually involves some financial investment, as well.” - EVI 10

“If it’s small enough, the empowered committee can do, because it’s reflecting the overall mission of the larger group, as interpreted by the committee.” - EVI 10

Larger decisions are decided by residents through a consensus process at neighborhood meetings.

“If it deals with the land, and is within a neighborhood footprint, then it is [decided] by the neighborhood, and by consensus.” - EVI 4

Fig. 5-13. An empowered committee meets outside the SONG Common House. Image Source. *Consensus Decision-making and Community Work*. Digital image. *Village Life | EcoVillage at Ithaca.*
Village level decisions include those related to roads, parking lots, gas and sewer lines, and ponds. A non-profit group called EVI Inc. owns all land outside of the neighborhoods. The non-profit Board of Directors makes decisions, but with the recommendation of the Land Partnership Committee, a group composed of residents.

Information regarding landscape interventions, or really any community decision, is shared through a variety of means. The most cited example was through an email listserv, although formal and informal meetings were also commonly cited.

“One important aspect is letting everybody know what is going on. Good communication shares concerns and intentions and accomplishment.” - EVI 3

One member felt that the community’s reliance on email to inform the community about decisions was inadequate, and that greater effort needed to be taken in order to have an informed community.

“It’s often shared just by email, which is utterly insufficient. Some people don’t have email, and most people just blur on it, or don’t take the full range of options of email. If you do it just by email, you are fooling yourself, and you’re not really doing a full democratic process.” - EVI 10

The same resident later noted that this greater effort was often taken when the community was facing important decision.

“When it’s a big enough issue, I think people realize that that [they] need to put a little thing on people’s doors, or a print out [informing the residents] that there is a meeting coming up and we would really like [their] input. Or, actually print out this proposal. Here’s a plan. We want your input.” - EVI 10

Additionally, loosely structured group discussions, known as “salons” sometimes are employed to educate ecovillage residents about upcoming projects that might impact the community.

“There are what we call salons to talk about what the plan is, what people think about it, how it might impact the residents, how it might impact the land, what kind of changes to expect, what timetable to expect, what the budget is, and who is going to be doing it. Because we use the consensus process in the village, this can take some time.” - EVI 9
More often, though, information is simply shared by way of mouth. Common areas were cited as an important design component for providing residents with informal streams for staying informed.

“Again, that’s a big advantage of living so close together and not having cars in the middle. There is just so much contact.” - EVI 7

Interview responses also expressed that the culture of self-government at EVI allowed for a different of levels of involvement in community affairs. A certain level of trust has been established in neighborhood and village committees to take charge of areas of interest, without the need to seek community wide approval for every minor decision.

“I think that we are at a point right now [where] people have figured out whether it’s a big deal for them, or not. For some people, it’s just not a big deal what happens with the landscape because they know the landscape committee is going to be watching over invasives, or trees that are going to be too big and shade out something or block the view, or whatever. There is more a sense of I don’t have to have say in everything because there are people who really care about that whom I trust that are watching over it.” - EVI 10

As noted above, empowered committees are free to make decisions, as long as it is viewed to be in line with the community’s overall mission. EVI tends to have a culture that favors planning and process over spontaneity. This is unsurprising, considering all of the land is under shared ownership, and the community has developed a robust and well regarded planning process.

“There is very little spontaneity. Because most of the landscape is owned by some group, whether it is a neighborhood, village, or not-for-profit, it almost always goes through an extended process of meetings and discussion.” - EVI 4

This view was mostly consistent across interview responses.

“Generally, it leans more towards planning, because everything that you do has an impact on other people.” - EVI 10

“Over the years, we’ve moved from being more spontaneous to being more planned, for better or for worse. It has become more bureaucratic. …[T]here are more people involved and more organizational entities involved, so usually there are a number of months of planning.” - EVI 9
However, some residents can and do avoid community process.

“I do a lot of wild gathering. I know what I’m doing, so I’ve never asked permission. If I raised it as an issue, people would say that we have to have guidelines for how you do it.” - EVI 10

Additionally, charismatic individuals may skirt the system on low-level personal scale projects, such as one individual’s building of a rock wall.

“If it is something that we just feel is not a big deal and people are going to appreciate it, we’ll just go and do it. Usually one person won’t act on their own, but then you get something like [Don’s] beautiful stone wall that he built. And he just did that on his own... I remember just coming along one piece of it and I just kept saying, “What is this? It’s beautiful!” I asked him about it, and he said it was just like therapy, and he kept doing it. That is one example of just one person spontaneously doing something on his own, but it wasn’t a large intervention. It was just an additional really nice thing.” - EVI 8

Occasionally, even some larger scale projects with village wide impacts escape community oversight.

Fig. 5-14. Residents pose for a picture after completing construction on a bridge connecting SONG and FROG neighborhoods. Image source: Bosjolie, Jim. Ecovillage at Ithaca, NY. Digital image. We Are Craving Community. Small Living Journal, 2 June 2009.
“Amazingly, the bridge between the neighborhoods, that little wooden bridge, that was done without any design review. The person who did it is sort of this cool maverick guy. Everybody is really thrilled with it. We have a great picture of everybody on the bridge with their hammer and saws and nails, and it just looks like one fantastic group experience [Fig. 5-14]. If you went back, you’d think, Holy Shit! That guy pulled that whole thing off with no meetings, no reviews, nothing. He just got it started and everybody liked it and it happened. That is an anomaly.” - EVI 10

In fact, numerous interviews highlighted the importance of individual initiative in moving projects forward. Four separate interviews referenced a certain type of enthusiastic and spirited ecovillage archetype, termed a “burning soul.”

“I think we believe in planning, but we don’t practice it that much. It’s mostly somebody gets an idea and some energy, and they drive it… Spontaneous is maybe not quite the word, it’s more like we call a Burning Soul.” - EVI 1

“I think we all learn by example. We’re very dependent on what we call burning souls: people who have a passion and a goal and feel really strongly about something and getting it done.” - EVI 2

Interviews suggest that nearly all new landscape projects or practices that get implemented are spearheaded by the efforts of one motivated individual. The community values Burning Souls, and is generally supportive of their efforts. However, there is acknowledgement that the planning process often has the effect of sapping the enthusiasm and energy of motivated individuals.

“I often feel that spontaneity is quite difficult because we do have to take into account so many people’s views. We just have a culture of consensus. A lot of times we’ll get a Burning Soul who wants to do something, and then they have to go through this whole lengthy process, and by the end of it, they are no longer burning about it.” - EVI 8

One resident expressed a belief that fatigue in leadership is also to blame for lack of initiative in creating new projects.

“It’s surprising how many people fade out. I think it’s partially because the leadership is not inspiring people who have been here for a very long time. It gets harder to do, of course. It’s hard to be an inspiration to people who have been here for 16 years. I think… it’s a mistake to keep the same director for all the
You get new blood in. If you’re trying to be cutting edge, even bleeding edge, you have to bring in new ways of thinking. I think that is part of what is actually missing here. It’s doing fine, it’s okay, but it’s not inspiring the old timers.” - EVI 2

**Ecosystem Services**

The concepts of ecosystem services was utilized in this research as a starting point for the evaluation of how ecovillagers interact with and manage their local environments. Because the aim of the ecovillage is to establish “a human scale, full-featured settlement which integrates human activities harmlessly into the natural environment, supports healthy human development, and can be continued into the indefinite future,” it stands to reasons that any such development would attempt some measure of environmental reciprocity, stewardship, or management to ensure that these benefits continue into the indefinite future. For this research, participants were asked to note any positive benefits that they receive from their local ecosystem so that these benefits may be examined for evidence of community based landscape practices or interventions that, in turn, promote the functioning of said ecosystem services.

**Provisioning Services**

Two organic farms produce food on site: West Haven Farm, and Kestrel Perch Berry Farm. Nine of the ten interviews cited the community run greenhouses. The Groundswell Incubator Farm was also cited as a source of food production within the community. Individual neighborhood Community Gardens were also commonly mentioned, including the FROG community garden, the SONG community garden, the
Berm Garden, and the Kitchen Garden, which provides food designated specifically for community meals.


Responses were also given citing orchard areas for fruit and nut trees (Fig. 5-15). Additionally, individual or private spaces are used to grown food, primarily the small plots located outside of the main entranceways to households where herbs are most commonly grown. Chickens are a source of eggs and/or meat for community members. Goats living on site provide milk. Bees are used to produce honey. Wild foods found on site include berries (blackberries, black and red raspberries), wild fruit trees (apples and cherries), and wild ramps.
The municipal water supply is the primary source of water to the site, originating from Cayuga Lake. One member provided the location of a well located on site, but noted that it is not currently functioning. Ponds on site provide irrigation water for agriculture, including the West Haven Farm pond, and the FROG pond.

Building materials provisioned from the site include lumber harvested from locust trees, and cordage made from dogbane. Fuel sources include wood fuel harvested from the forests natural gas from a hook-up to the grid, and solar energy from a ground mounted array.
Regulating Services

Carbon sequestration was described as occurring in a number of different areas at EcoVillage at Ithaca, including forested areas, the meadows, trees that have been planted as part of reforestation efforts, in the hedgerows between agricultural fields.

Trees planted to provide shade as mechanism for climate regulation. Vines planted on trellises in front of south facing windows that appeared to function as a shading mechanism for solar oriented architecture.

Fig. 5-17. The woods provide regulating services at EVI. Forest Walk. Digital image. Ecovillage at Ithaca.

Water purification was noted to occur on site through the maintenance of wetlands, and through filtration at the FROG pond. Planted trees and forested areas were each noted as providing water filtration. The purification of air was noted to take place through trees on the property.
Erosion and flood control was noted to occur through the construction of ponds to hold water on site:

“...[One] of the really important values from the beginning was how to store water on the land... The very first act was to dig the pond. The dirt from the pond went to build the road. All the roofs on this half of the neighborhoods, the water flows from the roofs to a culvert. That’s the roof water runoff going to the pond. The pond was intentional, and it really works. We’ve had this really hot summer - a huge drought - and that pond provides water for the community gardens. I know they’ve used that water for the chickens. [The pond] has attracted huge amounts of wildlife and diversity. And that was intentional. That pond was not here when we got here. But we dug it in August, and by April it was full of toads mating. Immediately animals came right to it.” - EVI 7

The entire site has been graded to direct runoff from houses to gardens and the ponds. One respondent noted the construction of swales to address flooding problems:
“There were some flooding problems from the [agricultural] pond going into the stream. As a non-profit, we paid for the creation of a swale to lessen the flooding, and a bridge over the stream so that people weren’t disturbing the stream.” - EVI 9

The maintenance of wetlands was noted as another mechanism for controlling flooding and erosion. Other responses included the creation of hedgerows, the planting of trees in areas affected by erosion, the maintenance of riparian buffers, locating buildings in way that preserves forest, and the use of cover cropping in agriculture.

Waste decomposition and detoxification occurs through community-wide composting programs. Two interviewees also noted the existence of composting toilets in community buildings.

Pollination occurs through both honeybees that are housed near agricultural areas, and also through wild pollinators native to the site.

“One thing I feel really pleased about is there are a lot of bees on this land. There are some actual honeybee hives down here, but there’s a lot of wild bees. Even though bees are going under such incredible onslaught [with colony collapse disorder], we seem to have a pretty healthy set of bees.” - EVI 9

Two members noted that the managers at West Haven Farm and some individuals in the community plant vegetative species with the expressed purpose of attracting wild pollinators.

Pest and disease control is done, in part, through the maintenance of natural areas to preserve habitat and biodiversity.

“The fact that we are restoring some kind of balance ever so slowly means that there is more resilience in the system; that it’s not as vulnerable to one pest taking over. But, that’s really slowly, indeed.” - EVI 10

Companion planting and cover cropping are also used to repel pests and attract predator species as an alternative to chemical controls. Monitoring of pest species, such as the Emerald Ash Borer and the Wooly Adelgid take place regularly throughout the property.
Supporting Services

Nutrient dispersal occurs on site through the spread of compost to agricultural areas. “We’ve spent a lot of time getting the soil back to good soil.” - EVI8

Nutrient-rich muck from dredging the pond will be used as fertilizer.

“We will be digging out the pond, so we’ll be getting a lot of nutrients out of the muck from the pond that we’ll use on site.” - EVI4

Seed dispersal is impacted through human activities at EcoVillage at Ithaca.

Efforts have been taken to reintroduce native species throughout the site.

“I have a rain garden here from which I have spread seeds. These are native plants. I planted them because the diversity of plants on this land is not what it once was since it’s been used for agriculture for so long. As things turn up, or I acquire local things, I put them back.” - EVI 5

Other attempts have not been so successful.

“There was an effort a few years ago to do native grasses. I’d say 10-15 acres was plowed up very carefully and native grasses were planted. If you went there now, you couldn’t tell what where it was planted. It looks just like the surrounding area. The plants were there, just waiting on the edge of the field, waiting until the farmer left and dispersed their seeds back in again. It was almost a pointless thing to do. Unless you’re willing to pull the weeds. You’re pissing into the wind because you cannot stop nature from taking over unless you’re willing to put in huge amounts of work, and nobody was.” - EVI 2

Additionally, invasive species have been targeted for elimination throughout the community, including both the forested areas and the woods.

Cultural Services

As mentioned above, the community was designed to promote social interaction through the use of common spaces.

“You have the commons right here, and the common house. The cultural stuff just happens because people sit around and the next thing you know they’ve planned a dance or a party or an event. It’s just non-stop. There’s a little group of girls standing around and things start happening because they’re all just all there
and they have such easy access to each other. It’s so safe and there’s no cars. It’s just non-stop wonderful things happening.” - EVI 7

Fig. 5-19. The FROG Common House. Image source: FROG Common House. Digital image. Ecovillage at Ithaca.

The Common House was specifically mentioned as a place where community happenings take place (Fig. 5-19, 5-20).

“The common houses both serve as a place to meet on neutral ground and to be able to exchange knowledge, discuss topics of interest, cook together, a variety of things like that.” - EVI 1

Many activities were described as taking place at the common house, including yoga, music, celebrations, and meetings.

Community gardens were also mentioned as a place for community development.

“Lots of fun stuff and sharing happens there; talks that would be happening over a garden fence, but we don’t have any fences.” - EVI 9

Interviewees also described the site of EcoVillage at Ithaca as a source of inspiration for inhabitants.

“One things that comes to mind is the reverence for the land. It’s not like a religion, but it’s an appreciation that we know our neighbors share. We feel sort of a bond. We feel privileged to be in this beautiful spot, and a sense of stewardship over it.” - EVI 1

The woods, in particular, were cited as place where such inspiration takes place.

“We have a lot of young people who like to use these woods as a place where they can spend time both away from us, but also they really like to be in the woods. There has been a real development in a sense of stewardship in those young men. My son is among them. So that has been a way for them to express themselves. A way of stepping out of childhood and being irresponsible to saying, “This is our place, too. We care about it as much as you do.” - EVI 1

“Well, all of it is inspiring, but everybody’s got their own special place. We’ve got a great sauna spot over there. A place people go for solace and comfort.” - EVI 10

A theme of inspiration through regeneration was observed across multiple interview responses.

“I’ve been here 14 years, and every time Spring comes around everything is… you know how things are over the Winter. In Springtime, everything becomes abloom! It’s sort of miraculous every Spring to see that.” - EVI 3

“I think the garden is a source of cultural, spiritual, and intellectual inspiration. The pond certainly is. This area here has a mix of forest and open space. It gives the feeling that the forest is coming back and regenerating. It’s not just an old abandoned dairy farm, there’s a lot more aliveness and interest to it.” - EVI 10
The land also serves as a source for spiritual inspiration. Responses described the land as a fundamental component of spiritual festivities, rituals, and gatherings.

Additionally, the land plays an important role in the development of heritage values.

“We make our land available to a non-profit program [named Primitive Pursuits] that works with young kids. It’s run out of the [Cornell] Cooperative Extension. Some of the kids here and a lot of the kids from the outside come here. They especially like to do things in the woods. If you wander around in the woods you’d see primitive shelters. They also teach kids how to build fires just using sticks, and they teach them how to weave cordage from dogbane. Kids growing up here, most of them, have been through the Primitive Pursuits program so they’ve learned how to do solos overnight with no sleeping bags and no flashlight or tent, and they’ve been able to build their own fires. It’s very cool. I wish I had that as a child.” - EVI 9

Interview subjects frequently described the natural beauty of the site as a source of spiritual inspiration.

“It’s a beautiful site. It’s fantastic to enjoy it. For many of us, it really does provide a huge amount of inspiration to just walk and sit on the land… I think that just having this amount of open space is really a delight. It’s not something that everybody has.” - EVI 9


The grounds of EVI also offer benefits in the form of tourism opportunities.

“They have a tour package and tour coordinator who coordinates all that stuff. They bring those people in here, take them on a tour of the whole village. They give talks and explain what the community is all about, the farms and everything
like that. Potential tourists are directed to the bed and breakfast. They didn’t just fall into it—it’s part of the outreach, too. It’s part of saying, “Here we are. See the good things that we are doing. Maybe you can adapt.” - EVI 5

“Typically, we have many visitors and students and tour groups who come through here. Often, no matter who they are, be they high school students from the Bronx, or businessmen from China… one of the things that they get out of coming here is this sense of, “you know, I could see myself living like this.” It’s a visceral feeling that people have. Those of use who live here are sort of bemused by that because it is so much a part of our blood and bones that we can’t necessarily see it, but because I work so much with the educational side of things, I hear it all the time.” - EVI 9

“Ecotourism? Tons. Oh my god, so many people. You’re just one of thousands. We get busloads of people that come up and spend time here. Large groups, classrooms, they camp or sleep in the common house.” - EVI 7

“There are some bed and breakfasts up here, and they target the ecotourism market. People who come to see Ecovillage will stay at one of those B and Bs.” - EVI 5

Recreation is another cultural service provided through the local ecosystem at EVI. The pond is place for swimming, ice-skating, bonfires, and parties. The hill is used for sledding during the winter. The trail system, however, was the most commonly cited source for recreational activities.

“In the years where we’ve had a lot of snow, the ski trails are really well groomed because so many people are using them. Because of all of the people up here, the land gets loved. The trails are maintained. People build bridges over the water through the woods. Over the bogs. There are a lot of recreational activities because of the trails.” - EVI 7

“Certainly there is widespread practice to use the trails, walking outdoors as a way of entertainment. There is a network of trails pretty much throughout the entire site. You see people constantly on the trails. It’s a way for individuals to refresh themselves, but it’s also enjoyable seeing your neighbors using the same land.” - EVI 1

The trails also serve as points of connection to other areas surrounding the community. Connections exist to a nature preserve, pedestrian corridors to downtown, and to a bus line. The trail system is open to all, not only to EVI residents.

The landscape was also cited as a place of scientific discovery and for education.
“The wonderful thing that I find here is, aside from the social relationships, is that the bank of intellectual knowledge and expertise that we have here is just great. You can put out an email with a question that can be very obtuse, and there always seems to be somebody who is able to answer it. To have this kind of diversity of skills and knowledge here, and also the artistic and creative talent... We’re constantly creating events and sharing what we’re doing.” - EVI 8

EVI was described as a local center of permaculture knowledge.

“There’s a woman across the way who knows a lot about permaculture. She’s made herself an expert in it.” - EVI 5

Education and community outreach also occur through the grounds at EVI. As part of my work exchange for an interview, I assisted residents with a field trip from an Ithacan low-income childcare facility. We gave them a tour of the property, then lead them on a foray through the fields, where the children collected black raspberries and wild mint. I heard several of the kids remark that they had never eaten wild berries before, and one child who said that she had no idea that one could gather wild foods. We took them back to the Common House, where we made smoothies and iced tea. The children then went swimming in the pond. In some ways, it is difficult to quantify the benefits that such a field trip may have for a child, but it seemed entirely likely that, at least for some of those children, the experience was entirely unique.

Academic partnerships have been established with nearby institutions, and the site of EVI serves as an outdoor something like an outdoor laboratory or learning environment.

“EVI is pretty heavily involved with education for sustainability, primarily at this point, through partnerships with Ithaca College.” - EVI 6

“We’ve done educational work with the local colleges, and now we’re trying to work much more with our local communities, as well. That is really important.” - EVI 10
“One of the residents felt like we really needed a root cellar. She worked with a class at Ithaca College and got the students involved to design root cellars and figured out how to build it. Then the whole community got together with the students and built it [Fig. 5-22]. They used sandbags, rubber tires, and earth. It was a big community project, and now we have a root cellar.” - EVI 7

EcoVillage at Ithaca is also a frequent place of study. As the literature review demonstrates, EVI has been the source of many academic studies. However, learning and discovery takes place in many different forms.

“Scientists come up here. I remember the fellow who used to live in that house was always measuring things. Energy use. Things about the pond. Whatever happens here, it’s because of the people who move here: what their interest is, they make it. Someone may organize craft activities or something with the kids. Someone might organize craft activities or something with the kids. Someone might organize walking around counting birds in the spring, or identifying birds. Someone else might be measuring this or that about the pond, or carbon use. There is unending opportunity.” - EVI 7

The woods were frequently cited as a place of discovery.
“In the woods we do a fair amount of knowledge transfer. Some people whom we’ve come to have work with us to go through the woods and teach us about the trees, or do some culling and selecting of desirable species. Kids come out and learn about the plants. We plant trees in large work parties of all ages. There is a lot of that stewardship and sense of understanding the environment better, that I think has really wide ranging benefits way beyond the transfer of knowledge.” - EVI 1

“Down here is a wild natural area called Coy Glenn. That’s like a 20 minute walk to there. It’s very inspiring. This is all part of an area that Cornell is studying. They’ve got over seven hundred species cataloged there that they are studying. There is definitely scientific study happening that way.” - EVI 10

The farms were also commonly mentioned as a location where knowledge is transferred and/or gained.

“West Haven farm is more involved with the Groundswell trainees and the local craft program, which is, basically, a program of field trips for agricultural apprentices that go around to different farms. I host school groups in the berry fields fairly frequently.” - EVI 6

“I’m collaborating with a couple graduate students who are doing research in entomology. One is trying to recover information that has been lost about a very specific pest of gooseberries… There is also a Cornell student who is doing a project to explore the difference in pollination between strawberries patches with and without habitat strips for beneficial insects.” - EVI 6

And, lastly, some interview responses touched upon the idea that the entire experience at EcoVillage at Ithaca was an experiment in community.

“I see it mostly as a social experiment. An experiment in how to make it work, and how to not make it work. And the idea that it’s as much an attitude as anything. It’s not like we’re super green, we got it all figured out, we know what we’re doing… I see [the social experiment] as a way of just being able to see a variety of styles and having enough relationship amongst people that the best practices can be identified. Can be seen. I’m sure that a lot of people who live out in the country, out west of us, who are doing a lot of great things, but I don’t know what they’re doing because it’s all spread out. Here, you get to see and know what your neighbors are doing because… it’s visible to everyone, and we make them visible to the outside world in the ways that we can.” - EVI 1
Chapter 6

Twin Oaks Community Case Study

Fig. 6-1. Virginia State Map Showing the Location of Twin Oaks Community.

Twin Oaks Context

Twin Oaks is a rural intentional community located in Louisa, Virginia, roughly halfway between Richmond and Charlottesville (Fig. 6-1). Founded in 1967, the 476-acre site is home to approximately 90 adults and 15 children (twinoaks.com). It is one of the oldest income-sharing communes in America.

Although founded decades before the notion of an “ecovillage” existed, Twin Oaks began using the term to describing themselves in the early 2000s, as many members felt the definition was an accurate portrayal of their way of life (culturechange.org).
The Community Today

The land is composed of 476 acres, most of which are of gently rolling agricultural land and mixed hardwood forests (Fig. 6-2, 6-3). Roughly 45 acres are set aside as pasture land or hayfields for the community’s herd of cattle, used for milk and meat production. Prominently featured near the community’s main entrance is a 3-½ acre
Twin Oaks is currently home to around 85 full-time adult members and approximately 15 children. Residents live in clustered housing units that in some ways resemble a dormitory model. Throughout the site are 8 residences, known as Small Living Groups (SLGs) that house anywhere from 8 to 15 individuals (Fig. 6-4, 6-5, 6-6, 6-7, 6-11).
Fig. 6-4. Tupelo SLG. Image source: *Tupelo Residence*. Digital image. *Twin Oaks Intentional Community*.

Fig. 6-5. Kaweah SLG (L) and Beechside SLG (R). Image source: *Kaweah-Beechside Kitchen*. Digital image. *Twin Oaks Intentional Community*. 
Members have their own rooms, but share common space, such as living rooms with other residents. Additionally, every SLG features areas of designated use open to all members of the community, such as a library, an exercise room, or a recreational space.

Fig 6-6. Oneida SLG. Image source: Oneida. Digital image. Twin Oaks Intentional Community.
Fig. 6-7. TaChai SLG. Image source: TaChai from Herb Garden. Digital image. Twin Oaks Intentional Community.

Four of the SLGs are clustered around a common outside space, known as the Courtyard (Fig. 6-8). These SLGs share a common house that features a kitchen and eating area. Open pastures, meadows, an orchard, and the community’s organic farm surround the Courtyard area. Nearby is a one-acre pond, complete with a sauna and beach area for swimming. The Courtyard cluster is the location of the community’s laundry facilities, woodworking and tool shop, and a building used for the commercial production of hammocks (Fig. 6-9).

Fig. 6-9. Map Showing Main Site Features of Twin Oaks Community (1)
The other four SLGs are located a short walk away, along a forested dirt path that bisects the community. These SLGs are nestled in the woods, and provide a greater sense of privacy than the Courtyard area, which has a more open and social feel (Fig. 6-10).
One of these residences, Nashoba, is designed for accessibility and to meet the needs of the community’s more senior residents, or those with health conditions (Fig. 6-11). Two rooms are designed specifically to accommodate end of life care. Additionally, Nashoba is the only building in all of Twin Oaks to feature air conditioning.
Along the wooded path is the community center and dining hall (Fig. 6-12) known as ZK, short for Zhankoye, a pre-Zionist community in Russia. Almost every building at Twin Oaks is named after a historic community: Oneida, Harmony, Llano, Modern Times, etc. Lunch and dinner are served here twice daily. Although most of the members eat an omnivorous diet, vegetarian and vegan options are always provided.

Past the SLGs, the dirt path leads through a densely forested area, and emerges on the south end of the property at Emerald City, the community’s industrial complex (Fig. 6-13). Here, Twin Oakers produce rope and wooden stretchers for hammocks, mill and dry lumber, store finished goods in warehouses, and process fruits and vegetables for the community’s heirloom seed company (Fig. 6-14).
Fig. 6-13. Emerald City Industrial Area at Twin Oaks Community.

Fig. 6-14. Outside view of Emerald City. Image source. *Emerald City Industrial Area*. Digital image. *Twin Oaks Intentional Community*. 
Twin Oaks resident live and work on site. Each member is expected to spend an average of 37.5 - 45.5 hours per week, depending on the season, to fulfill his or her labor quota. Residents have a great deal of flexibility in how they spend their work hours (Fig. 6-15).

“We use a trust-based labor system in which all work is valued equally. Its purpose is to organize work and share it equitably, giving each member as much flexibility and choice as possible. Work is not seen as just a means to an end; we try to make it an enjoyable part of our lives” (twinoaks.com).

Fig. 6-15. A group of residents weaving hammocks in the Courtyard. Group Weaving. Digital image. Twin Oaks Intentional Community.

In addition to working in one of the community’s income producing businesses, such as hammock making, soyfood production, book indexing, or heirloom seed production, residents can perform domestic duties like cooking, gardening, cleaning, doing laundry, or any other task deemed beneficial and necessary for the community as
part of their work obligation. All work is valued equally; an hour spent picking
vegetables counts the same as one spent weaving hammocks or cleaning bathrooms.

“Most people prefer doing a variety of work, rather than the same job day in, day
out. We work about 45.5 hours a week, including domestic chores often not
valued as "real work" in the mainstream culture. Over half of the work we do
involves non-income activities ranging from caring for our children to milking
cows to networking. We particularly seek to open work areas to women and men
that are not easily accessible to them outside of community because of lingering
prejudices about what "women's work" or "men's work" should be”
twinoaks.com).

Members are encouraged to spend at least some time each week working in areas
that help generate income for the community.

Shared Values

Twin Oaks is organized around four shared common values: cooperation/sharing,
nonviolence, equality, and ecology (twinoaks.org).

1) Cooperation/Sharing: To practice community of property, sharing all that we
are and have and can produce with one another.

2) Nonviolence: To practice non-violence in our personal, interpersonal and
political lives.

3) Egalitarianism: To eliminate hierarchy in relationships between people. To
eliminate classism, racism, ageism, patriarchy and other forms of oppression,
both in ourselves and in other people.

4) Ecology: To respect and preserve the natural environment for the use of our
own and other species, now and in the future.

Twin Oaks as an Ecovillage

Twin Oaks was not originally founded as an ecovillage. The term ecovillage only
came into popular usage in the 1990s, long after the community was began in 1967,
during the Third Wave of Communalism in America.
Behaviorist Foundation

“Twin Oaks was started by eight people who met at a 1966 conference on Walden Two, a novel by B.F. Skinner about an imagined utopian community based on the principles of Skinner’s behaviorist psychology. These eight individuals were eager to form a real life version of Walden Two. In 1967, with the financial investment from one of its members, purchased a former tobacco farm in rural Louisa, VA. The site composed of 123 acres of fields, woods, pastures, creeks, and river. Within four years, the group had grown to thirty six full members, with an additional ten visitors at any given time” (Kanter, 1972).

Transition to Egalitarianism and Environmentalism

High turnover and difficulty attracting behaviorist-minded individuals led to an open admission policy within the first three years (Kinkade, 1994). The group quickly abandoned Behaviorist principles, opting instead for a culture of egalitarianism and agrarianism (Fig. 6-16).

However, the modified elements of the Behaviorist foundation remain today, most notably in the community’s structured but flexible labor system. Founder Kat Kinkade has stated her belief that this labor system allowed Twin Oaks to survive while so many other commune floundered, as the labor system addressed many of the issues faced by other communes of the time, particularly laziness, freeloading, and excessive lack of structure (Kinkade, 1994). Zablocki (1980) estimated that, by 1970, there were roughly 1,000 rural communes in the United States. Today only a handful remains.

Over the years, Twin Oaks attracted many residents who were looking to create a culture that reflected their personal values. During the 1970s, as environmentalism gained support through the countercultural movements, environmentalism became an increasingly important belief at Twin Oaks.

"We were started way back when people weren’t paying as much attention to this. Our founders didn’t give a shit, frankly. We ate bologna sandwiches on Wonder Bread for the first five years, or whatever. But, again, as everybody in the Western World got ecological consciousness throughout the 70s, 80s, 90s, so did we.” - TO 3

On their website (twinoaks.org), Twin Oaks offers the following definition of an ecovillage: “An ecovillage is a human scale, full-featured settlement which integrates human activities harmlessly into the natural environment, supports healthy human development, and can be continued into the indefinite future.”

The Community Bylaws (1979) provide structure and support for meeting this definition:

Article I, Paragraph Two: Purpose: “Together our aim is to perpetuate and expand a society based on cooperation, sharing, and equality:

Section A: “Which serves as one example of a cooperative social organization, relevant to the world at large, and promotes the formation and growth of similar communities;”
Section C: “Which assumes responsibility for maintaining the availability of natural resources for present and future generations through ecologically sound production and consumption;”

Section G: “G. Which strives to be self-reliant by producing for itself the goods and services necessary for the maintenance of the Community.”

Today, Twin Oaks views efforts to attain ecological sustainability as an ongoing process, and invite the help of outsiders in helping to achieve that goal, as stated on the community’s website (twinoaks.org):

“We pursue the development of our land and resources with a whole systems approach. Site planning now in place includes clustering of dwellings. We cultivate gardens and orchards for our own food. We protect local endangered species, and strive to protect our land from any toxic chemicals… Like other existing ecovillages, we're by no means ecologically perfect. There's still a long way to go and lots to be done. We didn't start out in 1967 with the idea of becoming an ecovillage. But as time goes by, we're placing more and more emphasis on our need to live harmoniously with the natural world as well as with one another. We welcome assistance from those with expertise in sustainable systems design, and anyone can help by joining the community and working with our Ecovillage Committee to improve our environmental practices.”

**Why Twin Oaks?**

Interview subject were asked what made them choose to live in this particular community. The responses were generally in line with Kirby’s (2003) research, which found that dissatisfaction with “the status quo” and a psychological dissonance between personal beliefs and the “structural constraints that are inherent in a consumer-oriented environment” were common motivations for joining an ecovillage community.

In her response, the visitor coordinator described how many of those seeking to visit the community are seeking to find an alternate culture that is more in line with their personal beliefs.

“Over and over, I read in the visitor [program application] letters, “Mainstream life. Rat race. Been there. Done that. Not working for me. I’m looking for
something different, more engaging, and I think it might be at Twin Oaks. They come here, and for a bunch of them, it is. That is who is living here.”

Half of the interview respondents expressed the desired to live in a community that was an alternative from the mainstream, and six of the ten felt that the common values at Twin Oaks were aligned with their own personal values. More than half were drawn to the communal lifestyle. Three expressed a desire to live in community, though not explicitly in one that practices income sharing. Only two members explicitly mention the desire for a sustainable or environmentally-minded lifestyle, though this may be underrepresented, as it may have been implicitly expressed as one of the common values of the community. Two members had undergone through the community’s visitor program and decided to live there as a result, while four members said they were in need of a place to live. Other reasons cited included the desire to live a lifestyle that was agriculturally-based, rural, or free from automobiles.

The Mission or Purpose of the Ecovillage

During the interview process, members were asked to describe what they felt was the mission or purpose of Twin Oaks. The most common response, given in seven of the ten interviews, was that Twin Oaks sought to create a cultural alternative to the mainstream. Six of those seven responses added that Twin Oaks served as example, a model, or place of demonstration of alternative culture. The qualities of such an alternative culture were said to include egalitarianism, cooperation, and sustainability or ecologically-focused principles; each quality mentioned in five responses. Other common responses included: to live freely; to strengthen social cohesion; to practice non-violence; to consume fewer resources; and, to share income. In general, the overall responses were
reflective of the community’s stated common values of cooperation, sharing, nonviolence, equality, and ecology.

When asked how the mission/purpose related to the idea of sustainability, seven of ten responses claimed that living at Twin Oaks allowed members to use less resources, particularly through systems in place which promote sharing (as described in six interviews), and therefore reduce individual and collective ecological impact (also noted in six interviews).

As one member said, “by pooling and sharing resources we are able to reduce our expenses and the subsequent impact on the earth.” -TO 7

Another residents described:

“dramatic reduction in fossil fuel use, particularly through reduced car use and sustainable heat for the buildings… the various sharing technologies, bikes, clothes, cars. Collective childcare responsibility would also be very high on my list, that we’re able to have more generous family programs than many richer countries do because we are more cooperative. The United Nations says we need to cut our carbon footprint down 80% by 2050, and [Twin Oaks] is already there! When you talk to the people in the mainstream they say 80%! We’re never going to cut down 80%! It’s just not possible. We can get 20% out of renewable energy and we can get 20% out of increased efficiency, but we’re never going to find that last 40%. And, it’s because people are addicted to this idea that 99% of their material wealth needs to sit idle 95% of the time. If you don’t share anything, you can never get rid of that 80%.” – TO 9

Income sharing was also seen as being closely aligned with the value of sustainability through providing both physical and social support for its members while improving their overall quality of life.

“[Income sharing] is a more economically just way to live in relationship with each other. It avoids a luxury economy and many of the pitfalls and tragedies of the class system and of economic privilege.” - TO 9

Because the group assumes collective responsibility for providing basic needs such as housing, food, and clothing, residents claim a greater efficiency is achieved than would be compared to each individual providing for themselves. One member saw
income sharing as a means to “free up energy and resources in the group to pursue other activities, especially ones more closely tied to the values mission of the community.”

Certain amount of labor hours are reserved for members to do things like political activism, attend educational workshops (like seed-saving), or spend time promoting the community and their values to others. Furthermore, by collectivizing their resources, the group believes they can have access to more resources than each individual could alone.

"Sauna, yoga studio, woodworking workshop [Fig. 6-17]. It is highly unlikely that any one of us would have these in our lives otherwise, but we do here because the group has had the resources and chosen to provide them for ourselves” (twinoaks.com).

Fig. 6-17. A member works on a project in the woodworking shop. Image source: Woodworking. Digital image. Twin Oaks Intentional Community.

Members also mentioned greatly reduced use of automobiles, in large part due to working and living on site and sharing income, as being related to the community’s mission of sustainability.
Twin Oaks allows residents live a largely car free lifestyle. Residents work almost exclusively on site, and work facilities are only a short walk or bicycle ride away. Bicycles are supplied for all to use (Fig. 6-18). The community provides meals and clothing for all residents. Social and cultural events take place daily within the community. Even medical care can be provided on site through doctors who make house calls to Twin Oaks. There is very little actual need for residents to travel outside the community if they do not wish. Indeed, one member is rumored to have not left the property in years.

Like EcoVillage at Ithaca, cars at Twin Oaks are restricted from the interior of the community. However, Twin Oaks’ policy goes even further by prohibiting ownership of cars by individuals. Twin Oaks has a fleet of 18 vehicles that are shared among all residents. The community has a garage where all vehicle maintenance is performed on
site, resulting in reduced costs. A trip to town is made daily so that one resident can perform the shopping for the whole community, including the personal needs for individuals in the community. This job title is known as “tripper”, and is creditable towards labor quota. Residents who need to go to town for any other reason are free to tag along at no cost. If residents need a car for personal use, they are charged a fee to cover gas and mileage. Carpooling is highly encouraged, and incentivized through cost sharing. The community pays for the fees for trips to Charlottesville and Richmond if residents who would also like to make the trip can fill one of the larger vehicles, such as a multi-person van.

Overall, these systems result in Twin Oaks residents having a greatly reduced per capita consumption of gasoline. In 2007, Twin Oaks consumed a total of 15,267 gallons of gasoline. Spread amongst their yearly average of 96 residents, that works out to 159 gallons per person. Compared to the average Virginia resident’s use of about 530 gallons per year, that represents a reduction of roughly 70% (thefec.org).

Using less energy, growing food on site, and the reduction of waste, were also cited as sustainable examples of living in accordance with the mission of the community.

Twin Oaks’ buildings are designed to be highly energy efficient. Many of the residences are highly insulated, and utilize solar energy to preheat water. The community uses wood, selectively harvested on-site, as well as scrap wood leftover from hammock production, to centrally heat all buildings.

In 2007, Twin Oaks consumed a total of 268,065 kWh of electricity, or roughly 2,792 kWh per resident (thefec.org). The average Virginia resident used 13,860 kWh during the same period (eia.gov/electricity/, as quoted by fec.org, 2009). That represents about 80% less electricity consumed per Twin Oak resident. Additionally, a 10-kilowatt
photovoltaic solar array was completed in 2010 to provide additional energy to the community, likely leading to further savings in electricity used from the grid.

Similar findings hold true regarding use of natural gas. In 2007, Twin Oaks consumed a total of 16,221 therms of natural gas, or about 186 therms per resident (thefec.org), compared to a statewide average of 767 therms per household (www.eia.gov/, as quoted by article), or 302 therms per person. This represents about 38% less gas used by the typical Twin Oaks resident. These savings in natural gas are, in part, achieved by cooking large meals to feed all members at each mealtime, as opposed to the numerous smaller meals that would be required to feed the same number of people in smaller groups.

Fig. 6-19. The vegetable garden provides much of the food consumed by the community. Photo by the Author.
Practices concerned with food result in other increases in ecological efficiency. By producing much of the food consumed within the community on site, Twin Oaks avoids most of the packaging waste that accompanies purchased food products (Fig. 6-20). The food that is purchased from elsewhere is most often bought in bulk, again reducing the amount of solid waste that enters the property.

“...one of the biggest components for the waste stream in the mainstream is food packaging. We buy stuff in bulk, which minimizes the external packaging. The stuff we grow here has no packaging at all. The corn comes from the garden and goes into the wok and then goes into the steam table. There are a lot of examples of [sustainable practices], and not always because ecology is at the top of the list.” - TO 9

Also, very little food goes to waste. Leftovers from common meals rarely go an additional day without being eaten. Even dishes found to be not especially delicious are typically eaten by some willing residents, and if not, the it goes to the chickens who tend to be even less picky than the most iron-stomached Twin Oaker.

Additionally, receptacles for compost are placed next to every garbage can in the community. Compost is viewed as a valuable commodity at Twin Oaks, and great efforts are made to capture any compostable material for reuse in the garden. As a result, very little organic matter leaves the property as waste. The average American produces 1460 pounds of solid waste per year. In 2007, Twin Oaks produced 18,780 pounds, or 196 pounds per person; about 87% less than the national average (thefec.org).

“We do bring stuff to the landfill, but compared to the American average, we are doing very well.” - TO3
Sustainable Landscape Practices at Twin Oaks

Interview responses indicate that Twin Oaks practices a “hands off” conservation strategy that still allows for measured intervention where necessary. A long-term member described the community’s approach:

“We let thing be as much as we possibly can. If there’s a way in which we need to interact with the landscape, we do it in a way that’s the least impactful as possible...“ – TO 3

Reforestation

This “least impactful” approach described above can be observed in the community through an increase in tree cover, especially around the Courtyard, the site of the original farmhouse residence as well as the first four SLGs. Twin Oak respondents most often cited care given to the community’s forests as an example of sustainable practices.

“It’s interesting when you look back at Twin Oaks, when the community first started 45 years ago, this whole area had been clear cut. We’ve grown all those areas back, even in the inhabited areas. It’s really striking when you look back at photos from the Courtyard from when the community started and there’s only a few spindly trees. All the big ones now are the ones that we’ve grown.” TO 1

Four of the respondents referred specifically to reforestation on the property since the community’s inception.

“A lot of the land we bought was purchased when it was clear cut... I’ve lived here for 17 years, and the land was bought maybe 15 years before I got here. That space, between 15 and 30 years of growth is significant. There was one day when I was walking in the woods and I realized how tall the trees had gotten, and that was almost spiritual for me. “Wow! Trees grow!” I don’t think that people really think about it. I think they just think “Oh, there is the big tree,” and they don’t realize that the big tree was once 15 feet high. So when you look back at the trees and they are 20 feet high, and you go back a couple of years later, or maybe 15 years later, then they are like 70 feet high, you are like, “Wow!”: So, I don’t feel that we really get enough credit for the fact that we don’t develop our land. And it helps clean the air because there are trees.” -TO4
The reforestation efforts are visible when comparing aerial images of the property today with images of the land from when the property was first purchased in 1967 (Fig. 6-20).

Fig. 6-20. Map showing reforestation at Twin Oaks Community.

Much of the land was forested when the original property was purchased, and subsequent wooded parcels have increased the overall wooded area. Twin Oaks practices selective harvesting to promote the health of the forest while providing fuel for the community.
“We use 100% wood heat for heating our buildings, which is all sustainable forestry.” – TO 5

Another interview response pointed to the woods as providing wildlife habitat.

“Having forest ecosystems that are getting older and more mature… Eventually, we’re going to have a really mature forest here… that would provide habitat for all kinds of birds and animals that wouldn’t be elsewhere.” – TO 4

However, despite claims in several interviews that Twin Oaks practices a “hands off” approach in dealing with the landscape, the community actively shapes the landscape in many ways, including through systems for food production and nutrient cycling.

Fig. 6-21. A map showing agricultural productivity at Twin Oaks.

*Twin Oaks Agricultural Productivity*
**Food Production**

Food production is particularly important in the mission of sustainability at Twin Oaks. This is clearly stated on the community website (twinoaks.com):

“By growing and producing a large proportion of our own food we reduce our impact on the Earth (including the energy needed for transportation and refrigeration) and provide healthier food for ourselves. Using organic methods, we reduce the level of toxic materials released into the environment…”

During interviews, half of the participants mentioned agriculture as an expression of sustainable practices. A significant amount of land at Twin Oaks is dedicated to support the production of food (Fig. 6-22).

Fig. 6-22. Land use and land cover map of Twin Oaks Community.
Agriculture plays a large part in the identity of the community. Indeed, the garden and orchards are the very first thing one sees when entering the property. Twin Oaks maintains a 3.5-acre vegetable garden, as well as a hoop-house used to extend the growing season, from which they derive a large portion of their food (Fig 6-23).

Twin Oaks has been practicing organic agriculture techniques since the founding of the community. Interview subjects expressed a sense of pride in the transformational quality of the agricultural landscape. Residents described that when the property was first purchased, the soil was of diminished quality from years of tobacco farming. Over time, the community has improved the health of soils on the property through organic farming techniques while feeding residents high quality ethically produced food.

“We’ve taken the red hard clay and made it into really nice fields.” – TO 7

Three respondents described that during their time at Twin Oaks, the community has transitioned towards greater focus on agricultural pursuits, and more opportunity for experimentation with agricultural techniques.

“[The garden manager], she is more structured and scientific and keeps records. Really intense records. Especially with the watermelons and the Roma [tomatoes], she does seed saving. She goes through and specifically selects the primo fruits and seeds them so we have a crop for next year.” - TO 6

“We’ve become much more agriculturally focused, we didn’t even have a chicken program when I moved here. At first, we didn’t have one, then we had this one that was kind of substandard, and at the moment, we have this big flourishing chicken program. We didn’t have the seeds business, and that has put a lot more of our land and energy toward agriculture and all the new orchards.” - TO 1

“I think during the time I’ve lived here, a lot of people have moved here with a value of local food and food self-sufficiency. Our landscape has changed a lot around that energy and those values.” – TO 1

In recent years, the community has worked to establish a series of orchards. Cherry, apple, fig, persimmon, and pear trees have been planted around several of the residences.
“There is a big enthusiasm for more fruit trees. That is about achieving a greater level of food self-sufficiency.” - TO 1

Four responses referenced the benefits of locally produced food, notably, higher quality produce, reduced dependency on fossil fuels, and the ethical production of food derived from animals.

“There might be complaints from people in the community about how we garden, and what we get from the garden, but the reality is that we eat a lot of our own food. The fact that I can sit there and watch them pick a tomato, and I’m going to cook it later that day. I was sitting at the farmers market the other day selling some flowers, and someone is there with a big pickup truck full of corn, selling it by the dozen. And that corn is not as sweet as the corn I had last night because I got mine the day it was picked, when it was still in the peak of sweetness and freshness. The sugars hadn’t broken down and it was just wonderful. We get food that is actually picked ripe… I don’t think people here realize. People say we could buy food for cheaper than we could grow it, for the amount of labor that we put into it. But you can’t buy this kind of food. You just can’t! I don’t think people realize that not just their bodies, but their souls and emotions are fed by our gardens. The food they’re eating here is ripe and at the peak of when you should be eating it, and I think that has an impact on people’s physiological selves that we don’t think of because of our scientific rationale. But I think there is something more primitive than that.” - TO 5
The immediacy of fresh local produce is a daily experience during the growing season at Twin Oaks. As partial fulfillment of work requirements, this researcher spent one morning as a member of a team harvesting Roma tomatoes. The crop that year had been exceptionally bountiful. By noon, loads of tomatoes had been hauled in hand-carts (Fig. 6-23) up dirt pathways from the garden directly to the community center where they were subsequently washed and handed over to the kitchen. Some of those tomatoes were served in salads for lunch that same day. More were incorporated as a main component of dinner that evening. The rest were processed and canned later that evening, to be used over the course of the following year.

The community also reduces their dependency on fossil fuel inputs by growing their own food. Although tractors and other heavy farm equipment are used at Twin...
Oaks, much of the labor is done through human energy. Teams plant seed, weed, and harvest by hand. Because food is produced and consumed on site, energy costs associated with food packaging and transport can be avoided altogether. Additionally, compost produced by the community provides most of the nutritional input needed for agriculture, thus avoiding the use of fossil fuel derived fertilizers, as well as the energy costs that would be required to transport such fertilizers to the community.

Ethics, too, play an important role in the production of food at Twin Oaks. Only about 10% of Twin Oak residents adhere to a strictly vegetarian diet. Somewhat surprisingly, a higher percentage of members identified as vegetarian prior to life at Twin Oaks, but began consuming meat after joining the community. Previously, they had refrained from eating meat for ethical reasons; members felt that commercial scale meat production, even meat labeled as organic or grass fed, resulted in conditions in which animals were treated cruelly, contributed to environmental degradation, or lead to unsafe conditions for the workers involved. However, living at Twin Oaks allows, for those who are interested, to participate firsthand in all aspects of meat production operations. If they are not motivated to work directly with the animals, they can still be involved in shaping the systems and practices of raising and slaughtering the animals. Even if they do not wish to be involved in any aspect of the process, they know and trust that those who are involved are cognizant of issues like animal, environmental, and worker welfare.

**Themes of connection**

The theme of connection to the land presented itself several times over the course of the interviews.
“Being sustained by the land and having [a strong] connection to the land I think are definitely successes that would have to do with what an ecovillage represents.” - TO 4

One interviewee expressed the belief that the desire for connection is an underlying motivation for people to relocate from the mainstream to community.

“I think what drives people to community, what I don’t think they’re really cognitive of, is that they have no connection to the land. We’re so mobile in the world. We’re in our cars, we move from house to house, from apartment to apartment, from city to city, from job to job. I think that part of us miss staying in one place. A place where we watch trees grow. A place where we can watch our food grow. You measure time by season, not by calendar. I think, for me, that is one of the biggest things about Twin Oaks, what fulfills me spiritually is staying here.” - TO 7

During my stay at Twin Oaks, I experienced the connection to place, time, and purpose, as well as a deep physical and spiritual nourishment through working to help produce food. The late summer at in central Virginia can be quite hot and humid. Much of the work during this time takes place outdoors, and is physically demanding. One morning, halfway through a shift harvesting beans in a field, the team leader called for a break. One member of the team walked a short distance, grabbed one of the dozens of watermelons that had been carefully stacked in piles the shade of the building (Fig. 6-24), produced a knife from her pocket, and doled out juicy slices of the sweet melon to everyone in sight. I listened as sweaty communitarians sat together in the shade of tree, congratulating each other on work well done, reminiscing of the days spent the year prior harvesting the melons that provided this year’s crop. It struck me that, in a very literal sense, they were enjoying the fruits of their labor. Through such efforts, one can achieve a tremendous sense of purpose and satisfaction in work not easily found in a nine to five job.

Fig. 6-24. Watermelons are abundant toward the end of summer, and can be found in large number outside all residences. Image source: Melon Abundance. Digital
Systems for Sustainable Practices

Systems and practices that support the cycling of nutrients were also seen by interview participants of an expression of sustainable practices at Twin Oaks.

Fig. 6-25. The composting area. Image source: Compost Pile. Digital image. Twin Oaks Intentional Community.
As mentioned briefly above, Twin Oaks supports a developed culture of collecting and composting organic food waste. The site has a large area devoted to composting, located near the dairy barn. Here, food scraps, garden waste, grass clippings and landscaping debris are mixed, along with nutrient rich byproducts from Twin Oaks’ industries, into huge piles. A tractor is used to mix and turn the piles, and create rich compost. Several Twin Oakers noted that compost is considered extremely valuable in the community, as the limited supply is divided amongst many work areas, including the vegetable garden, seed gardens, herb garden, orchards, wildflower gardens, and general landscaping.

A large amount of the solid matter for compost production is produced as a byproduct from one of the community businesses, Twin Oaks Community Foods. This business produces over 1,100 pounds of tofu per week. Okara, also known as soy pulp, is the insoluble part that remains after pureed soybeans are filtered during the production of tofu. Okara has several uses at Twin Oaks.

“So, the other thing that happens with the tofu business is we get all this okara, which is the solid waste from the tofu making process… We’ve done different things with it. Sometimes we’ve fed it to our cows [Fig. 6-26]. Cows love it! The tractors bring a bin, and when the cows see it coming they run across the field. They are so excited. These big huge cows, running for this stuff! But there’re some problems. I guess it’s high in estrogen so can’t feed so much of it to the cows. The other thing that we do is compost the bulk of it with the regular compost.” -TO 3
Okara is high in nitrogen and trace minerals, and is seen to improve the tilth of soils. Because finished compost is so highly valued and in such limited demand, some members and work teams have begun to experiment with ways to speed up composting with okara, or to use it directly in the soil.

“What we do is, I’ll go up and grab a wheelbarrow full of okara, and we’ll collect some leaves and toss it around, and put a shovel full of okara on it and move a couple feet. It’s quick compost, but it’s just doing it in the ground. It’s [much easier] than having to do it in a big pile and toting it everywhere.” – TO 6

“I’m just learning how to work with the okara, which is great because that is one of our bio-products. It’s almost pure nitrogen, with a few other nutrients. I use that efficiently in the garden, where I can take that plant material and turn it into compost of pretty high quality pretty fast.” - TO 10
However, the community still ends up producing more okara that is able be used on site. A partial solution to this problem has been found through trading this organic matter with other local farmers who also use the okara as a compost supplement.

“The other thing we’ve started doing is trading it with our ex-member neighbor who runs a composting business. He has lots of carbon and needs more nitrogen, so we give him some okara and he gives us some wood chips, which we need more for various things. That’s a great interactive use and benefit.” - TO 3

Tofu production also results in another major nutrient waste stream, one that has been a source of difficulty for the community. Tofu production requires a large amount of water.

“It begins with washing soy beans and soaking them in water for 6 hours. After soaking, the beans are ground and mixed with more water to form slurry. This mixture is then boiled and filtered to separate the liquid starch from its dregs. Acetic acid solution is then added into the liquid starch, where it forms clumps of tofu. Using pressing equipment, these clumps of tofu are then pressed out, yielding liquid wastewater and tofu itself as a product.

In the end, about 60 kg of soybeans and 2700 liters of water are required to produce 80 kg of tofu. The vast majority of the water – in this example approximately 2610 liters - ends up as wastewater. Its main components include reductive sugar, sucrose, starch and volatile acid, making tofu wastewater a serious environmental pollutant (REEEP, 2012).
Tofu was first produced at Twin Oaks on a small scale, enough only to provide for the community needs. However, in 1991, the community purchased a commercial scale operation from an ex-member. Since then, production has steadily increased to the point where the soy foods business surpassed hammock production as the community’s main source of income in 2011.

In the early days, tofu wastewater (TWW) was simply dumped into the woods behind the building where it was produced.

“One thing that has been a great source of frustration, that I think is finally going better, is we’ve had a lot of trouble with the water from the tofu business. This is tied to how much the tofu business has grown, which is great for us economically. When we started the operation, it wasn’t really a problem to dump
the wastewater into the woods because the quantities weren’t such that it was doing any harm. But, the business grew and grew.” – TO 1

Although this practice of discharging untreated tofu wastewater into the environment was, and continues to be, in line with local and state regulations, many resident felt uncomfortable with the potential impacts the wastewater might have on downstream water quality. The issue was elevated to a community-wide concern when residents began to notice that the TWW was negatively impacting their own land, resulting in the death of a patch of forest behind the tofu hut.

An effort was made to process the wastewater in the community’s own sewage treatment plant, but the biological load overwhelmed the system.

“...[W]hen we were doing that, putting the [tofu wastewater] into our own sewage treatment plant, it was actually a huge biological load on the sewage treatment plant.” – TO 3

Fig. 6-28. High nutrient tofu wastewater is used to irrigate hay crops, turning a waste product into fertilizer. Tofu Wastewater. Digital image. Twin Oaks Intentional Community.
Twin Oaks hired a number of outside consultants in order to devise a solution, but for years, no solution was found. Eventually, a solution was devised by one of the residents to transform this industrial waste into an agricultural product that may actually benefit the community. Although toxic in large amounts, the TWW was found to act as a fertilizer when applied to plants in dilution. The current strategy is to capture the wastewater in large water tanks that are stored on trailers, and spray the TWW onto pastureland on a rotational schedule.

“The tofu wastewater is saturated with nitrogen and phosphorous… It’s good fertilizer in small quantities, and kills everything in large quantities. So, we had a couple of years where that was a really big community controversy of how we can call ourselves an ecovillage when we’re destroying this chunk of woods behind the tofu hut. Some people spent years trying to come up with better solutions. Finally, we bought this truck, and we now pump the wastewater into a tank… and we spread the wastewater on the fields.” - TO 1

“There was a tofu waste water problem for a long time and we couldn’t figure out how to fix it. We’ve figured it out now, but [for a long time] it was like “Well, no one knows what to do, but we’re still gonna make tofu.” I think we’ve come up with a really good solution for that, which is spraying it on agricultural fields. I think that is an ecological solution that is good for the watershed, a good way to use those nutrients. There’s a lot of other ways that a food system could be set up. You could question the centralization of tofu production in a way that it creates such excess liquid nutrients. I think that our new system is dealing with it in a very good way.” – TO 6
An interview subjects suggested that the application of TWW has greatly improved both the quality and yields of hay crops to the point where the community has begun evaluating the potential to sell hay (Fig. 6-29) as a commercial product.

“If you put tofu wastewater in the stream, it’s extremely bad for the watershed, for the stream. But, if you put it on the fields, the plants obtain nutrients and grow and use it. Especially if you cut hay… Right now, we’re using the hay, but at some point we might start selling it just because we’re going to start having better hay crops… That is really big. It is basically allowing our tofu production to exist.” - TO 4

“We’re taking a waste product and making it back into a fertilizer, which is great as far as I’m concerned.” – TO 7

The system for TWW distribution and application is currently being expanded to create more permanent infrastructure in order to reduce future dependency of fossil-fuel power vehicles for the transportation of the wastewater.
“So, we’re now just in the process of laying underground pipes to pipe it directly to the fields.” - TO 3

Responses from three of those interviewed referred to the community’s longevity of existence as a characteristic of a sustainable community, particularly in its ability to endure while still retaining its core values as a proof of its success.

“Early on, one of the values was to be an example of people living in a different way, and I think that by managing to be one of the longest existing secular income-sharing communities, we have really been successful. This isn’t something that comes and goes in five years, or can’t work beyond a small group. It is possible for a large group of people to live together this way for a long time.” - TO 1

“It’s still here! There were thousands of income sharing communities in the 1960s. Not just hundreds—thousands. Most of them tanked. All of them gone, almost. So the fact that you are one in a thousand, you’re automatically a success if you bear any resemblance to what you started out… The fact is that we’ve held on to income sharing. The fact is that we haven’t been privatized. We haven’t broken up our communal economy. That is a huge success.” – TO 7

One interviewee pointed to the importance of maintaining social order as a crucial element on the community’s staying power:

“I keep coming back to the whole social organization aspect of an eco-village. If you don’t have [social order], the whole thing is going to fall apart and it’s not going to matter how eco-groovy you are. We have a really good system. Part of it is our decision making system. Part of it is our labor system. We make sure that things get done. This is the backbone of any society, and if it is not functioning, it’s going to collapse.” – TO 3

**Land Use at Twin Oaks**

Interview subjects were also asked to describe how the physical design of the community at Twin Oaks was influenced by ecology. Because Twin Oaks was originally founded as a Behaviorist community, and not an ecological community, responses tended not to point out any specific physical feature as being influenced by ecology. Instead, responses pointed more towards systems that had been developed that were thought to be
environmentally and ecologically minded, and how these systems were developed less through an initial set of shared environmental values, and more through the efforts of individual initiatives backed by community support.

“Like I’ve said, probably [when the community was first formed] the focus was social justice. But people were not stupid. Obviously, this way of living was very efficient… People are not driving to work. Your food travels from the garden to the kitchen and you eat it, instead of being cooked, packaged, refrigerated, shipped. Just go down the list. There are so many things here where production and user are this close together, and out there they are that far apart. If Twin Oaks were serious about it, Twin Oaks could in fact be much more radical than it is. But, even just to the extent that it is, it’s far more environmental than most organizations.” – TO 2

The Land Planning Process

Twin Oaks adheres to a formal policy, The Land Planning Process, for any change to the land or a building. The process first involves posting a written proposal to a public bulletin board, known as the Opinions and Information Board (O&I Board), detailing the proposal along with any impacts and costs associated with the proposal.

“You gotta make noise if you want people to notice anything you’re doing. For example, [the garden manager], she writes long [informational papers] about what is going on in the garden. That’s smart. You want people to notice what you are doing. People can be surprisingly disconnected in a community of this size if you don’t keep them in touch.” - TO 7

The paper is posted for a period of 10 days, during which time other members of the community may express their written support, opposition, or concerns. Although elected planners have the ultimate authority, the community aims for a lesser consensus, so controversial proposals are rarely approved. A community override function exists, but is very rarely needed.

“If enough people were pissed off about it, if it was super insane, it could go to override. The way an override works is you have three weeks from the day that the planner’s decision went public to have 40% of the full member population
sign [an] O&I paper that specifically spells out what you are attempting to appeal or overturn. It’s very divisive, but it rarely goes to that.” - TO 6

If approved, implementation of approved decisions is the responsibility of the resident or group of residents who proposed the change, as well as those who have been recruited to help make the change. Resources (money, materials, and/or work hours) for making the change are allocated in the proposal.

“Usually, the same person or people who wrote that paper informing the community would be the people in charge of making it happen, and they would have resources allocated by the community or the planners to make it happen.” - TO 4

One resident relayed a story of how a group of two Twin Oak members saw a need to improve the poultry program:

“We had not been raising our chickens very well. We had the idea that the flock was going to be in a mobile coop, but it’s just a lot of trouble to move the chickens around. They weren’t getting to graze in the fresh grass. They were basically living their own shit. It was not a good situation. So [two members] decided to radically overhaul our chicken program and actually do the mobile chicken coop thing. It’s a lot of work, but it’s much healthier for the chickens and the land. They have been moving them from orchard area to orchard area. The chicken fertilizes the ground and they eat the pests. So, after you go through the whole process, you do the work yourself or recruit other people into doing it.” - TO 1

It is not uncommon that approved proposals go unfinished because individuals do not follow through.

“The person who put up the proposal does it. Everything at Twin Oaks is done because somebody does it. It doesn’t matter what papers are put up, or what policy… or decision gets made. If somebody doesn’t actually do it, it doesn’t get done. Whoever has the energy and the vision, and if they get permission, then they do it. Sometimes people can have the energy and the vision, but they don’t do it. We’ve agreed to these things, but they don’t get done.” - TO 5

“People have to have the perseverance to talk to everybody whom it would impact and convince people. It’s a continuous process… Probably less than half of the projects that get started come to fruition.” - TO 1

Part of this difficulty may be attributed to the somewhat transient nature of membership. However, enthusiastic individuals can and do impact change.
“We have so much turnover that it makes long term planning difficult. If a group of people make a long-term plan, chances are that ⅔ of them will be gone. So more often, change happens just by somebody saying [they] have an idea, and the energy to implement it.” - TO 1

Fig. 6-30. This 3”x 5” display board is an important mechanism for communication at Twin Oaks. *Image source: Communications.* Digital image. *Twin Oaks Intentional Community.*

Information about decisions is shared with the community through the O&I Board, as well as the 3” x 5” Board: a display board of index cards that features general community announcements (Fig. 6-30).

“Usually just a card or a paper will go up saying: Planners have approved dedicating one more acre to seed production near Tupelo, or something like that.”

“It would probably be posted as a 3x5. If it was a really contentious point, [there] would probably be an accompanying O&I paper explaining why they made the decision.” - TO 6

Information is also shared through informal discussion. However, not all information is publicly shared, necessarily.

“If it’s a managerial decision, then usually it isn’t [shared] because it is part of running their area, day to day, week to week, month to month, year to year. If it’s
a planner decision, it’s also not necessarily posted. Only certain big deal planner decisions are posted. It’s publicly available in the planner notebook which anyone can go read. Anyone can go to the planner meeting and sit in, but almost nobody does.” - TO 3

Twin Oaks values the planning process over spontaneity. Changes made without community oversight will often lead to conflict.

“There isn’t a whole lot of room here for spontaneity here if you’re making large changes. At least, if you’re not trying to avoid large amounts of conflict in your life.” - TO 2

“We’re all about planning.” - TO 5

“We don’t do spontaneity.” - TO 6

Indeed, avoiding conflict is implicitly stated as the main goal of the Land Planning Process, as stated in “Space Use and Land Planning Process at Twin Oaks.” The community document summarizes the process thusly: “the bigger goal is that the members of the community change our surroundings in ways that work well for the community as a whole.”

However, charismatic individuals can and do skirt the system.

“We have some people who are really great at asking for forgiveness [rather] than permission, and there are some people who are really good at getting stuff done.” - TO 2

“What’s also true is that decisions get made by random individuals. Like, the plumbing manager put in a low flow showerhead in the shower. Some communard who water more water flow just took it out. Now, tons and tons of potable water go down the drain because some random anarchistic members don’t agree with that decision, don’t go through process, and nobody cares enough to change it back. There’s official decisions which are also practical and real decisions, but then there are decisions of individual action…” – TO 3

One respondent gave a good overview of what is necessary to successfully navigate the Land Planning Process, which can sometimes be political. It can be useful to
recruit allies in one’s cause, especially members considered knowledgeable about the relevant issues, as well as those well liked throughout the community.

“[Name withheld] is this guy who lives here. There’s 10Kw of solar panels out there. He did that. The timing is such that it came along with federal support money, but what he had to do is put up a paper saying that he was interested in it, but that it might cost too much money. But, he did the math. He came to me [and another technically minded member] to get support. We did a bunch of work… to support him. We made sure he had good numbers and could present himself to the community in a way that sounded coherent… There is a status system here It’s not a perfectly egalitarian system, and it shouldn’t be. People who know about an issue are respected by the community… If you want to do something, it helps to get allies. So that is what [name withheld] did. He did it well, and we built the system. It’s publicity and gaining allies. Advertising, if you want to call it that… It’s extremely rare when there is a spontaneous mass movement, it’s pretty much always one enthusiastic individual.” - TO 7

Fig. 6-31. Solar hot water heaters and photovoltaic panels on Kaweah residence. Image source: Kaweah Collectors, Digital image, Twin Oaks Intentional Community.

Another member spoke about the how a motivated person can influence the entire culture at Twin Oaks.
“Individuals who come in can create a lot of change if they are the right kind of person. We had one person in particular... who had a very strong interest in alternative energy... He came in ‘72. He is like the eco-freak. He really exerted his influence of “let’s put solar hot water panels on our buildings,” and “let’s build a solar PV powered residence [Fig. 6-31].” Really, because of the way our culture is, one person can exert a lot of influence. He came, and he had a combination of the skills, [both] the technological skills and the political navigation skills.” - TO 3

Overall, responses tended to agree that, over time, there have been very few, if any, major changes to land use practices.

“Big picture, it hasn’t changed that much. There’s been no drastic changes.” - TO 3

“In the 15 years that I have been here land practice has not evolved. The Land Planning Process uses the same form now that it used 15 years ago.” - TO 9

Three themes emerge to explain this. First, Twin Oaks has had a Land Planning Process in place for a long time, which seems to be functioning well and respected by the members.

“I think there is a bit more process around land use now than there was, but not a whole lot.” – TO 10

Secondly, the landscape is organized around systems and practices that have been in place since the founding of the community. It, too, appears to be functioning well, and therefore unlikely to receive much effort to change it in any drastic fashion.

“It pretty much hasn’t changed all that much. We were organic farming in the 1970, and we still are. We were a community where people didn’t own cars in 1970, and we still are. The basic design of the community, which is shared housing, dictates a lot of the land use, and that hasn’t changed much.” - TO 7

And third, because most members do not arrive with any farm experience, the land use practices are instilled in workers through training programs. As a result, land use practices are inherited and passed on.

“I think we’re doing the same things we’ve always done. Part of it is because of the fact that we’re city kids, so we do things as we’re trained to do them. And then, we either have the skills to add to that, or we just keep doing it as we’re trained.” - TO 8
“When I grow flowers, I make it up as I go along. You’ll notice every single garden is treated differently. The practice of how it’s worked is different. It’s all based on the people who are working and what they’re comfortable with, their level of knowledge. We approach how we work the landscape of Twin Oaks in this sense of discovery. We didn’t grow up doing this. We’re not farm kids. There are exceptions, kids who [grew up on farms], and they tend to be much more productive in managing the landscape and our natural resources. But most of us are making it up as we go along.” - TO 5

However, this does not preclude the possibility for change.

“So many different individuals have said, “Hey! Why don’t we do things this way?” If you can get enough people convinced, you can do it.” - TO 1

The Role of Experimentation in Shaping Land Use and Practices

Interview responses fell into two categories in regard to the role of experimentation at Twin Oaks. Members felt that, while Twin Oaks was an experiment in the living of alternative lifestyles, the community is actually somewhat conservative in the application of experimental techniques on a community wide scale. However, several responses indicate that there is some room for experimentation and modification when it comes to work responsibilities, especially regarding agricultural practices.

Many at Twin Oaks view the community as existing in contrast to the mainstream. Any efforts that would improving the quality of life for residents or increase efficiency would be welcomed by the community, provided they upheld the set of core common values. However, resources at Twin Oaks are limited, and the community is wary of investing large amounts of capital in projects or ideas that may not pay off.

As one long-time member said:

“The whole thing is an experiment. But at the same time, we try not to do experimental. We’re not really that interested or focused on doing experimental techniques. We don’t really do cob or strawbale [houses] because those are relatively unperfected techniques at this time… and it’s a poor use of resources to build something that’s gonna fall apart in 9 years… So, we tend more towards
the conventional kinds of things… Simultaneously, everything we do is experimental and nothing we do is experimental.” - TO3

Furthermore, as mentioned above, projects to improve, alter, or enhance land practices are often approved by the community but not completed by the members who have initiated the project. One could understand the community’s reluctance in the pursuit of projects that may require large amounts of time, money, and/or labor in the absence of guarantee of completion or return on investment. Still, small tweaks to systems or methods of practice are welcome.

A few respondents expressed a viewpoint indicating experimentation as an important component of successful agriculture practices.

“[There is] constant experimentation in the garden and dairy and poultry, tweaking what we’ve been doing, trying different methods and varieties of vegetables” - TO8

One member put it more succinctly:

“A lot of it is trial and error.” - TO 6

One member, the manager of the permaculture-influenced herb garden, cited her whole approach to gardening as based on experimentation and observation.

“I’ve been experimenting in ways to take care of large areas. I have huge areas I take care of without ever using anything but a sickle and scythe and pruners and my little digging tool. And I don’t break my neck doing it. Have you ever read the book One Straw Revolution? I read that book back in the 60s. It was about a Japanese man. He definitely dealt with ecosystems and how to make that work. He just started working and figured out ways to grow rice in his space without and of the usual tractor methods. It was just fascinating. So I was like, if he can do it, anyone can in their given geographic location with whatever it is that they are trying to grow. It’s just a matter of fine tuning your systems over and over again until you find ways that work.” - TO 10
Is Twin Oaks a Model for Sustainable Development?

All of those interviewed said that Twin Oaks could be viewed as a model for sustainable development, though half added that the model is not perfect.

“I’d maybe call it a model, but not the model.” - TO 2

“Not perfect, but a model? Yeah.” - TO 8

One response expressed the belief that the Twin Oaks model is superior to the mainstream approach, but that this approach, in itself, was not a tremendous achievement.

“We’re a model, not so much because we are super brilliant, but because what we’re modeling against is super fucked up.” - TO 9

When asked what particular physical elements could be adopted by more mainstream communities looking to heighten their degree of sustainability, half of the residents emphasized resource-sharing as an exportable feature of the community, particularly car, bike, clothing, and tool sharing.

“In terms of real environmentalism, sharing resources is what works.” - TO 7

The next most popular suggestions involved growing one’s own food and supporting locally grown food, as suggested in four responses.

“Having food production close in hand so that people interact with it and understand it and take part in it helps people feel more connected to it.” - TO 4

Co-housing was also seen as a strategy that could be adopted by mainstream communities.

“I think that cohousing is a good development in terms of something that is halfway between what we are doing and how mainstream people live.” -TO 1

“There are a lot of things that we don’t have to individually buy: washing machines, lawn mowers, vacuum cleaners. I think that cohousing communities are developing things like that.” - TO 1

“The sharing of large energy consuming machines would be a good start.” - TO 2
One respondent emphasized that much of what makes Twin Oaks sustainable could not be easily taken and applied to the outside world without also bringing many of the underlying culture and systems:

“...it’s not that anything we do is not exportable, it’s just a completely different paradigm, and you can’t export that. You’d have to change the underlying structure of everything.” – TO 3

Another interview subject expressed a similar view in the difficulty required to change mainstream individualist consumer culture, and adopt more environmentally benign collective behavior:

“Mainstream environmental groups are trying to sell you on supply side energy. That’s political, and it doesn’t work. What really works is human resources. I give them the numbers in terms of per capita energy use of different lifestyles. You can have a bunch of people who don’t give a shit using really crappy technology and really crappy buildings, and if they’re sharing resources, they will do a much better job than people would with the most complicated expensive stuff and try to do it by themselves. Politically, that is difficult because most Americans want their own private mansion and their own private car.” - TO 7

Economics at Twin Oaks

As mentioned previously, Twin Oaks runs several communally owned and operated businesses that provide the income for the community. Because of the economic benefits of income sharing, the community can rely on industries that produce a relatively low hourly wage and still provide a high quality of life for members.

Hammocks

“Twin Oaks Hammocks has been making hammocks in our rural Virginia facility since 1967, and has over all those years continued to offer them for sale at craft fairs, through retail outlets, and online” (twinoaks.com) (Fig. 6-32).
For many years, Twin Oaks Hammocks was the community’s primary stream of income. The community had a lucrative contract producing hammocks for Pier One Imports beginning in 1975 (Fig. 6-33. This contract has been described as being the “backbone” of the community, and credited with allowing expansion of both Twin Oaks, and the communities movement, as a whole (Kinkade, 1994).
Tom Freeman, a Twin Oaks resident, wrote in 2007:

“There was a sense of irony in the relationship between Twin Oaks and Pier 1. Twin Oaks is an egalitarian, income-sharing intentional community that prides itself on creating small footprints on the land, a voluntary labor system, and social consciousness. Pier 1 is a multinational conglomerate that sells overpriced consumer goods imported mostly from developing nations. Yet, we attribute our longevity and growth at Twin Oaks to our relationship with Pier 1.

And we were not the only community to benefit from this relationship. As Pier-1’s hammock sales increased, we were able to offer the excess production to other communities, first bringing East Wind in Missouri into the business as a partner, then contracting with other smaller communities to also create hammocks. Making hammocks for Pier 1 was like pennies from heaven dropping into the pockets of the communities movement.”

However, as Pier One requested a large increase in the number of hammocks as well as changes to product production and design in the mid-1990s, the demand caused strain on the community. Freeman continued:
“Pier 1’s changing product needs brought new uncertainties and tension to the communities involved. The managers of our hammocks business could not anticipate from season to season what Pier 1 would want. Hammock production returned to a seasonal nature. Many individual community members felt dismayed at what they perceived as Pier 1’s dominance of their lives and the communities they lived in. Members of Twin Oaks began to voice concern about the negative impact of the Pier 1 relationship on our community.”

To address growing concerns regarding perceptions of dependence upon a single retailer and industry as the primary of income, the community began development of the “Pier 1 Strategy”, a plan to reduce reliance on Pier 1 through expanding other community enterprises, such as the community’s fledgling book indexing services and new business producing tofu. This was a perspicacious decision, as Pier 1 dropped Twin Oaks as a hammock supplier in 2004. Although the community experienced a drastic drop in income, Twin Oaks was able to survive the change through austerity measures and through shifting efforts to the other cottage industries. In the two years that followed, the tofu business tripled in size, and the book indexing service increased profits by 45% (Freeman, 2007).

As Freeman writes, dependence on a single industry or revenue stream can create vulnerabilities that may threaten a community’s very existence. He offers this insight:

“If there is a moral to this story I think it lies in learning the danger of creating a community economy dependent on one large customer. If we were a traditional business we could just keep expanding to buffer the dependency on a Pier 1-type customer. We could produce our product with cheaper labor in other countries, as our competitors do. We could expand our product line to other casual furniture. We could do these things and more. Instead we’ve chosen to be a community but not a business. We have businesses in order to support our community; we’re not a community that exists to support our businesses. It’s an important distinction.”

Twin Oaks continues to produce hammocks, though the scale of the operation has been reduced considerably. Today, the community has a more diffuse spread of income producing businesses, allowing for greater resilience when confronted with
changes to economic circumstances, and increasing the chances for the community to sustain, prosper and grow.

**Tofu**

As discussed previously, Twin Oaks operates a facility that produces tofu and other soy products on a borderline industrial scale. Production takes place in a building aptly named The Tofu Hut. It is the only building at Twin Oaks not named after a historic community. The business operates five days per week, and as noted previously, produces over 1,100 pounds of tofu each week. Twin Oaks Soy Foods’ products are available at many stores in the Mid-Atlantic and Northeast regions of the United States, including Whole Foods. Members often provide in-store product demos and promotions to customers, a practice that the community has found greatly increases the volume of sales, likely due to the enthusiasm members display in promoting their own product, and the personal connection such face to face meetings promote. In 2011, the soy food business surpassed hammocks as the source of the largest share of Twin Oaks’ income of all its industries.

**Indexing for Books**

Twin Oaks has also run a service providing book indexing since 1982. An experienced academic book indexer, and admirer of the community, offered to teach Twin Oakers the craft and provide client contacts to get the operation started. He had become interested in community, and offered his knowledge and help as a gift to Twin Oaks (Kinkade, 1994).
This industry remains a small but supplemental source of income to the community.

**Flowers**

Fig. 6-34. Flowers being sold at Farmer’s Market in Charlottesville. Image source: *Twin Oaks Flowers*. Digital image, *Twin Oaks Intentional Community*.

In the early 2000s, a resident transplanted hundreds of flower bulbs and other plants from his family’s farm in Wisconsin to Twin Oaks. He cultivated these plants, and began to sell fresh cut flowers at farmer’s markets around Charlottesville. The business was taken over by another resident in 2012 who continues to grow the flowers with organic production techniques, and sell them at market (Fig. 6-34).

“There is more to it than that we’re growing flowers for money. The reason that people buy flowers is that they want to bring nature into their lives in a way they
normally can’t… I grow mostly flowers that aren’t florist flowers, they’re field flowers. I do that purposefully because sometimes I look at the flowers at the florist, and they are so perfect that they just don’t look real. They don’t look like what grows in nature. People come, more and more [often], they come to my booth and they’re picking my flowers over these other grower’s flowers because they like the wild flowers.” – TO 5

Seed Growing - A Model for Sustainable Enterprise

In 2006, Twin Oaks began growing open-pollinated and heirloom seeds for Acorn, a sister community located only a few miles away that operates a business selling seed. What started as a ¼ acre parcel has since grown into a six-acre operation on certified organic land, where over 40 varieties are grown each year (Fig. 6-35). These seeds are produced for several small retail seed operations.

Fig. 6-35. These peanut seeds are one of over 40 varieties of seed grown at Twin Oaks. Image source: Tennessee Red Valencia Peanuts 2. Digital image. Twin Oaks Intentional Community.
In 2015, Twin Oaks formed a seed growing cooperative a neighboring community, Living Energy Farm, and the ex-member neighbor who grows the soybeans used in Twin Oaks’ soy food products. The cooperative, known as Common Wealth Seed Growers, offered 15 varieties of seed in 2015, sold through direct marketing on their website and at farming conferences in the Mid-Atlantic region (twinoaks.com).

Two interview subjects expressed positive views of the seeds venture as being aligned with sustainable principles.

“In the last five years, we’ve taken on this new business of seed growing… It’s working pretty well, overall, as far as I understand. It’s pretty lucrative, people like the work… There is also a lot of energy in the community now for these more sustainable kinds of businesses… Seed growing is pretty huge in the States, now. Planting your own garden. And we’re riding that wave. It’s really great that the community is going in that direction. Growing plants in the earth; that is a really good thing to do.” – TO 3

“We’re devoting chunks of land, scattered throughout the community, to growing and processing seeds for [the seeds business], which people are enthusiastic. It’s a more sustainable business.” – TO 1

Residents claim the seeds business contributes to sustainable values in several different ways. In addition to contributing to the economic stability of the ecovillage, seed production is said to improve landscape performance, provide food for the community, increase local and regional food security, strengthen intra- and inter-community relationships, and be aligned with the community’s larger political ideology.
The income generated from seed growing operations has steadily increased since Twin Oaks began growing seed in 2006. As previously mentioned, the community has sought to diversify income streams through cottage industries in order to increase resilience. The costs of producing seed are minimal, only requiring a small amount of seed to get started, labor to plant seeds and tend to them, and minimal facilities and labor to process, dry, and store seed (Fig. 6-36). Land is also required, of which Twin Oaks has ample holdings. Growing seed has proven to be economically viable, and, indeed, lucrative. As operations continue to expand, seed growing will likely continue to increase in the share of overall profit of Twin Oaks businesses.
Secondly, the operations of growing seed contributes to overall landscape performance in a number of ways. Organic techniques, such as the application of compost and planting of nitrogen-fixing crops, improve soil fertility. Soil also serves in the role of carbon sequestration, as carbon is stored in underground organic matter. Both erosion and stormwater runoff are slowed through cover-cropping and the maintenance of hedgerows. Additionally, hedgerows provide shelter and habitat for the wild pollinators who assist in the plant propagation while feeding on crops.

“I think a lot of [the pollination] comes from the open spaces that we have [in] the habitat that is along the edges of our fields. It’s habitat for wild pollinators around here such as bumblebees and solitary bees. I find at the seed garden that those do most of the pollination work. We don’t have honeybees over there. I mean, they do show up, but we a lot of wild pollinators. I think it’s because of having so much relatively wild land around.” - TO 4

Third, some crops can provide food for the community while also producing seeds that can be sold. As part of work duty, this researcher spent time processing seeds from melons, peppers, and tomatoes. In each case, the fruit bodies of the plants were saved, and served as meal components during the same day. Additionally, new varieties of seeds are tested each year by the community for commercial viability.

“Our seeds growing can be scientific in a way because you are constantly observing different varieties and trying to select for the heartier or tastier, or whatever characteristic of the species that you want to emphasize in your seed. Those are the ones that you are going to harvest from and save the seed. It’s a pretty scientific process: a process of preserving the seed so that it will germinate, testing the seed to make sure that it has a high enough germination rate.” - TO 2

Residents are often encouraged to taste new varieties and provide feedback on which ones the community should grow in the following year. During his three-week stay, this researcher sampled more varieties of melons than he had previously thought to exist.
Fourth, by producing seed, Twin Oaks is helping to contribute to local and regional food security. Only plants that perform well are selected to harvest seeds for resale.

As one member wrote in the Common Wealth Seed Growers catalog (2015):

“A variety stewarded in this way has a genetic makeup that gears it towards optimal survival within local and bioregional growing conditions. This regional adaptation of seed stocks allowed for a diverse, secure food supply for any particular bioregion.”

Many of the seeds produced are heirloom varieties that retain phenotypic qualities throughout subsequent generations, without the loss of vigor associated with hybrid seeds. By growing, and potentially through saving such seeds for future use, farmers contribute to the bank of local knowledge surrounding locally bio-adapted seed. Additionally, genetic biodiversity is maintained, which reduces the threat of widespread disease and blight that can potentially devastate monocultural production.

Fig. 6-37. Members work together and, in the process, form meaningful and lasting relationships. Image source. Crew: Lyndsey, Nina, Kyle, Edmund. Digital image. Twin Oaks Intentional Community.
Fifth, in working together, connections are strengthened within the community, as well as with outside groups. Most of the tasks involved in seed production are done as a group. Teams do everything, from cultivating the soil, planting crops, harvesting fruits, and processing the seeds. These jobs can be demanding, but tend to allow for a high degree of socialization while tasks are being performed. Team members share stories, gossip, discuss community affairs, talk politics, or engage in discussion on any range of topics (Fig. 6-37). Through this interaction, friendships and bonds are formed and strengthened. From direct observation, social relationships appear to be extremely important to members at Twin Oaks, perhaps more so than in mainstream society. Working together in providing for the community affords the opportunity for deep, meaningful relationships amongst residents. These relationships provide cohesion and conviviality for community relations, and in doing so, contribute to the overall quality of life of residents.

Additionally, the seed growing enterprise has helped to promote relationships with other groups. As mentioned above, seed growing was started at Twin Oaks as a service for Acorn, another nearby community. Work responsibilities are shared between the two groups. In fact, members of each group work together in many areas besides the seeds business performing many tasks, and not just those that provide income. The two communities often share labor on construction projects, agricultural efforts, and with technical support, like website development. In forging business a partnership, interdependency was established, and the conditions for reciprocity and long-term economic stability were improved for each community.

Similarly, through formation of the Common Wealth Seed Growers, an effort is being made to forge similar relationships of interdependence with other communities,
homesteads, and farms in their region. The vision of the group is embedded in their name; to share in the common wealth of all involved.

Lastly, the efforts of seeds business contribute to the extension of moral and political aims of the group.

The Common Wealth Seed Growers 2015 catalog features a manifesto written by a Twin Oaks member, extolling the larger vision and drive behind community seed production. In it, she describes how increased industrialization and commodification of food systems during the 20th century has resulted in the domination by a handful of multinational biotechnical and chemical companies who now produce over 60% of the world seed supply.

“What’s worse is that these corporations have no interest in supporting sustainable organic agriculture or organic crop breeding as their profits rest on breeding crops that rely on agricultural chemicals (which they also sell). They have everything to gain by commandeering the seed supply through market consolidation, discontinuing more seed varieties with each corporate merger and leaving fewer varieties available to organic farmers. These giant agricorps will pursue all means to secure their profits: the draft for the Intellectual Property section of the proposed Trans Pacific Partnership (TPP; think NAFTA on steroids) is literally written by and for Monsanto.”

While this last claim may be a bit of an exaggeration, the United States agricultural interests are being negotiated for the TPP by Islam Siddiqui, former Chief Agricultural Negotiator in the Office of the United States Trade Representative, previously a lobbyist for Monsanto (Chicherio, 2013).

She cites “The Manifesto on the Future of Seeds (written in 2006 by the International Commission on the Future of Food and Agriculture in):

“The global seed industry misuses the concept of “common heritage of mankind” to freely appropriate farmers’ varieties, convert them into proprietary commodities and then sell them back to the same farming communities at high costs and heavy royalties. Such privatization through patents and intellectual property violates the rights of farming communities and leads to debt, impoverishment and dispossession of small farmers.”
The Common Wealth Seed Growers seek to combat these concerns by fostering localized systems for seed production.

“Our new seed growers’ cooperative is actively building a local and regional network of skilled organic seed producers, and developing educational programming on seed saving. We believe that organic farmers and the communities in which they exist are best served when they have access to well stewarded, 100% source-transparent, regionally adapted, GMO-free, organic, open-pollinated seed varieties. Farmer-direct seed—farmers growing seeds for themselves and directly distributing to other farmers—is the clearest path away from the global commodity seed market and towards reestablishing seed as the common wealth of humankind.”

Thus, in much the same fashion that Twin Oaks has organized itself as an ecovillage, intent on the formation of “a human scale, full-featured settlement which integrates human activities harmlessly into the natural environment, supports healthy human development, and can be continued into the indefinite future” (twinoaks.com), they are working toward a human-scale, full-featured business model that supports healthy human development, and can be developed into the indefinite future.

**Are Other Twin Oaks Businesses Sustainable?**

While the seed growing business embraces many qualities of environmental, economic, and social sustainability, do other Twin Oaks industries share in similar characteristics? In 1977, Twin Oaks adopted a document known as the Criteria For a Twin Oaks Industry. The following five criteria and supporting definitions have been pulled from that document for discussion.

Criterion 7: “The major material for the activity should not be derived from nonrenewable resources,” where “major materials” are defined as “...those items we purchase that go into the products/service that we market, e.g., editing requires manuscripts & pencils.”
Criterion 8: “Essential production steps for the activity result in a minimal amount of pollutants being expelled into the environment...”

Criterion 15: “The income activity uses T.O. resources that are presently under utilized,” where “resources” are defined as: “...our present land, wood, water, buildings, machinery, tools, supplies, etc.”

Criterion 16: “Marketing for the activity is focused on the local and regional areas as much as possible...”

Criterion 17: “The income activity uses resources available through other communities.”

Twin Oaks Hammocks violates of several of the above criteria, most notably, criterion number 7. One of the major materials, the nylon rope of which the hammocks are weaved, is composed of nylon, a petroleum based product. Additionally, the wooden stretchers received a coating of polyurethane, another petrochemical, to color and protect the wood from rot.

The community acknowledges these concerns, and does offer hammocks made from hemp fabric, as well as rope made from recycled polyester. However, these are considered as specialty items, and do not constitute the majority of hammock sales.

Additionally, rope is both cut and fused by heat, a process that results in toxic fumes. All cuts and fuses are performed in front of a system that ventilates out the top of the building. However, these fumes are still released into the environment, and could therefore be considered a violation of criterion 8.
Fig. 6-38. The community saws lumber used in hammock production from wood harvested off site. Image source: Saw Mill. Digital image. Twin Oaks Intentional Community.

Also, while Twin Oaks does practice sustainable forestry to provide the community with lumber for on-site construction needs, the wood used in hammock production is imported from off site (Fig. 6-38, 6-39). Transportation of this resource requires fossil fuel inputs. While this wood is certified as being harvested sustainably, it does not come from a resource that is currently being underutilized, as required by criterion 15, or from another community, as in criterion number 17.
The hammocks are also marketed worldwide, a violation of criterion number 16, although this done through the Internet, a development unforeseen in 1977. It can be supposed that this criterion was established in order to avoid the need for members to be subjected to days and weeks spent travelling the country to market their products far away from the community.

All told, it is unlikely that Twin Oaks could feasibly continue to produce hammocks if they were to adhere to all of the above criteria. While one could envision a future where the community produces environmentally benign rope from some plant material grown on site, such as hemp, it is difficult to imagine that sufficient wood could
be harvested on site, or secured from other communities, without depleting forest resources and causing environmental degradation. For these reasons, it is questionable whether the hammocks business could be considered sustainable when evaluated from a long term, holistic perspective.

Concerns could also be raised in the evaluation of the soy foods business, particularly regarding water use and pollution. As noted previously, tofu production is a water intensive process, with one report claiming an input of roughly 2,700 liters (~723 gallons) of water to produce 80 kg (~176 lbs.) of finished tofu. This works out to slightly more than 33 liters (~8.7 gal.) of water used to make one kilogram (~2.2 lbs.) of tofu. If Twin Oaks is producing ~498 kg (1,100 lbs) of tofu each week, that works out to roughly 16,434 liters (~4341 gal.) of water drawn from the community well during the same period. Over the course of a year, that equals 854,568 liters (~225,753 gal.) of water extracted for the production of tofu. More than 96% of this water withdrawn for tofu production is discharged back onto the land in the form of wastewater. Although the current practice of spraying this nutrient rich wastewater onto agricultural fields is widely regarded in the community as an improvement over the former practice of dumping into the woods, it is debated whether the problem is solved, or not.

As one member said:

“The waste process connected to the tofu business has improved, but it still has problems.” – TO 7

Two interview subjects expressed concern about continuing this practice into the future.

“I don’t know if you’ve noticed a terrible stench that is periodic. [The wastewater] is actually the source. It’s really stinky, but it’s good fertilizer when spread out, and it’s better for that chunk of woods behind the tofu hut. So, that situation is better, but I’m not sure that it is 100% solved. It seems that dealing with the wastewater is unpleasant work, and it’s hard to find people who want to do it. If our tofu business continues to grow, I’m not sure that we’ll be able to
keep up with our wastewater that way. But for the time being, it’s much better than it was.” – TO 1

The solid waste from tofu production, too, may have negative environmental impacts. One resident expressed concern about nitrogen and phosphorous runoff from the composting facilities as a point source for watershed pollution.

Another, perhaps less serious, concern relates to a unique form of air pollution associated with soy food production. Because it is so high in nitrogen, the okara is prone to putrefaction, and can produce an unpleasant odor. This is what accounts for the “terrible stench” described above. It is more a nuisance than a serious environmental concern, but it may contribute negatively to overall quality of life for some residents.

Lastly, the community has found some difficulty in finding residents who are willing to work shifts in the tofu factory. Work conditions are viewed, by many, as unpleasant. The process of making soy foods requires lots of heat, making for hot and sweaty working conditions. The equipment is also very loud, and requires the use of ear protection, which limits social interaction and thereby does not lend itself to building and strengthening social bonds.

Despite the above concerns, the industries that support Twin Oaks contribute in many ways towards the creation of a sustainable community.

As mentioned in the literature review, many other ecovillage communities face difficulties in providing sufficient opportunities for income generation through onsite activities. In many communities, residents need to find jobs outside the community, where their time and efforts to are spent performing work that likely does not contribute towards the community’s mission of environmental and/or social sustainability. Rural communities, in particular, often require long commutes by automobile, and perpetuate dependency on fossil fuels.
At Twin Oaks, sufficient work is available for all residents, and in a variety of forms. Residents are granted a great deal of flexibility in choosing the work that they wish to perform. Members are able to rotate positions and, in doing so, are able to learn a variety of skills. The egalitarian mindset promotes equality in the community. Work at Twin Oaks often defies the gender roles that are pervasive in mainstream society. Women frequently lead construction and forestry crews, and men are often found cooking, cleaning, and providing childcare. Work considered to be undesirable is shared equally amongst all residents—i.e., everybody has to clean the toilets.

Almost all work is on site. Time, money, and energy are saved. Quality of life is surely improved when the commute to work entails a short walk through the woods, than one spent as an hour in traffic. By walking or biking around the community, opportunities for social interaction abound, all while improving health through physical activity.

Additionally, incorporating industry on site promotes a more holistic view of the ecological implications. As mentioned above, Twin Oaks was meeting existing environmental regulations when they were dumping tofu wastewater into their woods. However, because of a shared commitment to environmental stewardship, the community has designed a solution that exceeds that mandated by law.

Because the industry was located in the same place that they live, residents witnessed firsthand the damage that tofu wastewater was doing to their environment. Because of the strong social culture and systems in place for the sharing of information, this concern was quickly brought to the attention of the community at large. Because the community has a strong connection to the land, this environmental degradation was considered serious, and efforts were taken to adjust the system to halt the damage. It is unlikely that a for-profit company with a factory in the industrial zone of some city would take the same steps to voluntarily exceed environmental regulation. It is even more
unlikely that environmental impacts would be noticed in such a short amount of time, or
the same degree of causal link established between industrial activities and specific
environmental damage. It is also unlikely that those who do notice would feel the same
degree of urgency to change the situation, or that they would be able to rally community
wide support to call for change. Even if strong community support were garnered, would
they have sufficient agency to alter the environmental practices of a business that may be
considered primarily with maximizing profits? Maybe not.

The Twin Oaks model of industry offers a much greater incentive for businesses
to internalize costs associated with degradation of the local environment, in large part
because the long-term survival of the community is so closely tied to sustenance from the
land.

**Ecosystem Services at Twin Oaks**

The landscape of Twin Oaks provides much of the sustenance needed for its
inhabitants, such and food, water, and other resources. However, the landscape also is the
source for many of the other underlying services that make life possible, such as those
that regulate and support ecological processes, as well as those which inspire residents
and contribute to the formation of community identity. As part of the interview process,
participants asked to describe the benefits that they receive from their local ecosystems,
and to mark the location on a map. What follows are the results of this exercise.
Provisioning services

Food is produced at Twin Oaks through a variety of means. The most obvious was the community’s 2.5-acre organic garden that supplies the community with fresh produce. All participants described and marked the garden as a source of food. Additionally, all participants saw the community's many pastures as a source of food.

Fig. 6-39. Wheels of cheese made by residents at Twin Oaks. Image source: Cheese. Digital image. Twin Oaks Intentional Community.
Although no food crops are planted there, the pastures support the community’s herd of cows, a source of milk, meat, cheese, and butter (Fig. 6-39). The pastures also produce hay crops that sustain the herd over the winter months.

Fig. 6-40. The Dairy Barn at Twin Oaks. Image source: Dairy Barn. Digital image. Twin Oaks Intentional Community.

Similarly, seven of the participants included the dairy barn, the actual site where milking of the cows takes place (Fig. 6-40).
Seven members described the herb garden as source for culinary herbs and spices (Fig. 6-42). Five members pointed to the community’s many orchards and solitary fruit trees as a source for fruit and nuts. Two members spoke fondly of a particular tree, well regarded as a bountiful source of exceptionally tasty figs. Two members described how food is a common byproduct of the seed growing business. One member noted that shiitake mushrooms might be found fruiting on logs that had been inoculated by a member some years ago.

Four interviewees noted wild sources of food provided throughout the landscape. The pond and river were cited in three responses as a source of fish. Three members gave the locations of wild patches of berries, including blackberries, raspberries, and
blueberries. One member described patches of forest where May apples can be collected in the early summer. Two residents noted that wild mushrooms, such as chicken-of-the-woods and oyster mushrooms, might be found in the forest during certain periods during the year. The community gets honey from apiaries, as noted in two interviews. One resident described how some residents have collected snails from the pond to eat. Another indicated that, on occasion, groundhogs have been eaten after being trapped in the vegetable garden.

The water at Twin Oaks is provided from one main well, as noted in six interviews. Three members were also able to mark the location of two additional wells on the property, though one well was damaged in an earthquake in 2011 and had not been repaired by the summer of 2012. The other, though functional, is not used.

Four members described the herb garden as a source for medicinal herbs, from which medicinal teas, infused oils, salves, and poultices are made. One member also described herbs that can be collected in the forests and fields from which pharmaceuticals can be made.

All ten interviewees indicated that wood, selectively harvested from the community’s land holdings, is used as fuel to heat all of the buildings at Twin Oaks. Five members noted that this wood is also the source for lumber, used in construction projects.

Three members described how one resident planted a patch of flaxseed to be used to make clothing for his son on a loom, which he also built. As of the interview period, the flax had been harvested and stored, but not yet spun into fiber.

Interviewees described industrial products gained from the landscape, including three responses each for the seeds produced for the seed growing operation, and the compost produced as a byproduct of the organic waste from sources on site. Three of the interviewees viewed the products that the community produces through their businesses
as being products of their local ecosystem. It should be noted that, and mentioned above, main components of both the hammocks and the soy foods are imported to the site. The wood used to make hammock stretchers are purchased off site, as well as the nylon used to make the rope. The soybeans for soy foods are also imported, though an ex-member locally produces them.

**Regulating Services**

The woods at Twin Oaks were seen as providing many benefits to the community through services that help to regulate ecological processes, including carbon sequestration, climate regulation, erosion control, and the purification of air and water.

Four responses were given that cited the forest as place of carbon sequestration.

“From [a standpoint of] soaking up water and soaking up carbon, this land is immaculately well managed.” – TO 7

“I think [carbon sequestration] would be the trees. The fact that we let our trees grow... I mean, one of the things we’ve been in agreement is, if you look at the way we build, not cutting down the trees, it’s intentional… You see that most of our land is unused, and that is on purpose.” - TO 4

Three members described the woods as provide climate regulation.

“If we lived in a city and it was paved, this temperature - it would be a lot hotter in the summer.” - TO 4

Two members cited forests as providing erosion and flood control.

“The rain that falls on the forest takes a lot longer to run off, and soil doesn’t erode easily.” - TO 4

Two interview responses described the forest as contributing to the purification of air and water. One member described the practice of selective harvesting of trees for lumber and fuel, as opposed to clear cutting, as being intended, in part, to reduce the rate of erosion in the forest.
In addition to climate regulation provided through keeping the forest intact, three interviews mentioned the creation of solar clearings around buildings to help aid in heating and cooling, as well as for the drying of laundry (Fig. 6-42). Additionally, the clearings help to reduce the incidence of mold in and around residences. These clearings are maintained around every building that is sited in the woods.

“We have solar clearings that we use on the south side of the residences to reduce the amount of heating that we need in the winter.” – TO 8

“One thing that comes to mind is where we do and don’t have trees, like, besides the forest. [We have] solar clearings around all of our residences… [O]ur newer buildings we built with solar clearings… and we built them with passive solar principles. That’s not necessarily true with our older buildings. In the last four years we’ve made solar clearings at two of them, but retroactively… One thing I will say about that is a lesson I learned. If you make a solar clearing, you have to put something in it, or else the trees grow back up and then people are like the tree loving fanatics, so-called, and they don’t want to cut down those trees. And that is what happened at Nashoba [residence]. It had a solar clearing with nothing
in it, and now there’s no solar clearing anymore. And people are like, “You can’t cut down those trees!”, but everywhere else, that’s not a problem.” - TO 3

Fig. 6-43. The community’s sewage treatment plant. Image source: Sewage Treatment Plant. Digital image. Twin Oaks Intentional Community.

Additionally, one member cited the intentional planting of trees around exposed buildings to provide shade. Six responses noted the community’s on site sewage treatment plant as a means for the purification of water (Fig. 6-43). The plant handles all of the sewage wastewater created by the community, and discharges it into a creek on the property at a level of quality that exceeds local and state regulations.
Fig. 6-44. A biofilter helps keep the water clean at the community pond. Image source: Biofilter at Pond. Digital image. Twin Oaks Intentional Community.

Four interviews noted a bio filter that circulates the water, and uses plants to help keep the water clean (Fig. 6-44).

“We have a pond, and at the pond we have a system for recirculating the water. It has an area up top where there is a bio pond where we have plants that filter the water and purify it. Then the water goes down a series of flow forms, which are concrete dishes that swirl the water around and adds fresh air into the water. That is how we keep the pond clean.” – TO 8

One member also spoke about managing woodlands around the pond so that leaf litter does not fall into the pond, helping to keep the water clean. Two responses indicated
that a spillway was added to the pond in order to help control the rate of flow from the pond during storm events, and other periods of high water. This was seen as contributing to the control of flooding and erosion.

Cover cropping was mentioned by the garden manager as an important practice utilized to prevent soil loss on agricultural lands. The herb garden manager also spoke about her continual construction and maintenance of irrigation ditches to hold both soil and water in place.

“I see where the water goes and I change the beds. I’m slowly changing the land back here so that the beds catch the water and the plants in the bed are happy with wet roots at some times of the year. [No water] leaves this area and goes somewhere else. I have very little overflow. I have used, noticeably, a lot of boxwoods with ditches dug in front of the beds. The boxwoods catch the water and they preserve the soil so it doesn’t wash down into the vegetable garden. They also help to keep the weeds [down], and create microclimates for the plants. It’s pretty stable these days. I have a French Drain dug after the last set of beds that holds a lot of water and lets it disperse later in the season… I do a lot of that just within each little room, or bed. All of the beds are cut from the inside to keep the boxwoods from taking nutrients from the beds. The outside is over here growing and keeping weeds from growing in the path. It works pretty well.” - TO 10

The sewage treatment plant, mentioned above, was noted in six responses as providing waste decomposition and detoxification. Additionally, three members described the community’s use of composting toilets as a means of dealing with human excreta on site, and transforming it into humanure, used as a fertilizer for landscape plantings.

“How can we take what’s perceived as waste and turn it into a resource? That is the most powerful thing in ecology, of course. Ecology does that naturally, there is no waste. So, the more that we can get in synch with that natural system, the better.” - TO 3

Five members described the community’s systems for composting as a means of facilitating waste decomposition and detoxification. Three members also included the practice of spraying tofu wastewater on agricultural fields in this category.
Fig. 6-45. Community members speak during funeral services for Kat Kinkade, the founder of Twin Oaks. She is buried in a graveyard on site, along with seven other residents. Image source: Kat’s Funeral. Digital image. Twin Oaks Intentional Community. N.p., 2012. Web. 27 Oct. 2015.

Perhaps the most interesting responses relating to waste detoxification and decomposition was the community’s graveyard. Twin Oaks has a small graveyard located on their property where eight former residents are buried, including the community’s founder, Kat Kinkade.

Eight members described the use of community maintained beehives in helping to aid pollination of crops. Five members credit wild pollinators with doing much of the work. Four responses pointed to the widespread use of hedgerows in order to provide
shelter and habitat for these wild pollinators. These hedgerows, along with the ample habitat provided by wild areas the community maintains, was expressed by the seed business manager as playing an important role in providing habitat for other beneficial insects.

“Having woods and wild spaces allows habitat for beneficial predatory insects for the garden, which controls populations and population spikes of insects which could harm the garden… I definitely notice the effects of having a lot of wild land around, in terms of both the wild pollinators and the beneficial insects for pest control. I’ve heard from other farmers that are in the [Midwest]... and some of the pest problems that they are having, and we just don’t have, because of the lack of habitat for beneficial insects out there with the corn fields and everything.” - TO 4

Three members described the use of companion plantings as a means to lure predatory insects and to repel other pests that may cause crop damage. One interviewee also described how he sites flowerbeds in open areas to further discourage pests.

“We don’t hunt, so we have all the natural animals, which is part of the ecology. It’s a pain in my butt sometimes because they’re down in the ravine where I grow my flowers, and they come up and eat flowers occasionally. The way I’ve dealt with it [through] planting a lot of things they don’t eat, like daffodils and other things, along the edges. Things that aren’t eaten I grow along the edges of the garden, and I find it keeps the pests out. It’s hard for them to cover cleared land to begin with, because of predators, and if they don’t have plenty of things that are edible I find they don’t want to explore more. They tend to go back to where it is safe. Obviously, if you’re looking for food, continuing into unsafe territory where there is no food means there is more risk of being snatched by predators. Also, my dog keeps them out.” – TO 4

Twin Oaks also employs domestic animals to help aid with pest control. A dog is used to keep deer away from crops, as noted in three responses. The chicken flock is rotated amongst the orchards to help control pest populations. The community tries to limit the use of pesticides on site. In instances when it is deemed necessary, measures are taken to reduce any impact that it may have on beneficial insects.

“We’re super duper careful. If we’re spraying an organic pesticide in the garden, if it’s going to cause any danger to the bees, we do it in the evening after the bees have gone back to the hive.” – TO 8
Regarding disease control, the only two practices were mentioned in interviews: one being the use of crop rotation in agricultural fields, the other being the selection of livestock breeds that express disease resistance.

“We’ve purposely chosen Dutch Belted, a heritage variety [of cows] which are not very common anymore. They produce a little less milk on average, but they’re more resistant to mastitis and stuff. That’s definitely a reason why we’ve chosen them. We don’t care about maximizing output of milk. We care about easier to deal with animals.” - TO 3

**Supporting Services**

A variety of practices were described that support the dispersal of nutrients throughout the local environment. Two residents noted the composting programs as an important system for concentrating and distributing nutrients from food and industrial waste for site wide application, as well as the use of humanure from composting toilets. Two also pointed to the tofu wastewater system for the same reasons. Again, two interviewees noted the graveyard as a unique means of cycling nutrients in the local environment.

Soil formation, a process that helps support agriculture, has been promoted through the application of compost in agricultural fields. As noted previously, the soil was in suboptimal condition when Twin Oaks first purchased the property. Through years of organic practices, the soil has been transformed from hard clay to rich loam.

Seed dispersal is another important mechanism that supports ecosystem functions that support human life. The seed growing operations at Twin Oaks were cited in six interviews as playing an important role in the dispersal of seeds throughout not only Twin Oaks, but also on a local and regional level. The seeds grown at Twin Oaks have far
reaching impact in helping to promote heirloom varieties of open pollinated crops while also contributing to local and regional food security.

Seed dispersal also takes place on a more localized level through the help of the herb garden manager. She has helped to create a garden that provides the community with herbs and medicines that is largely self-sustaining, with little input necessary by human hands.

“She also describes how plants found growing wild on the property have been domesticated and incorporated into the herb garden, where they continue to reproduce and spread their seed.

“I certainly encourage the German Chamomile that everybody likes to use. It grows as a weed out there, naturally. I’m naturalizing a lot of things. You know, a lot of things have been brought here from the woods into the herb garden. One thing I’d like to say is how quickly [the plants become naturalized]. Let’s say it initially has trouble. It only takes a couple of generations for it to adapt and really want to grow in the area that you’re planting it. It’s just amazing how fast that happens.” - TO 10

Cultural Services

Ecosystems are also crucial in the development of non-material benefits obtained by humans. The landscape at Twin Oaks helps in the formation and maintenance of community, culture, spirituality, identity, social relationships, recreation, and education.

In particular, the woods were seen to contribute in myriad ways. For instance, in providing refuge and solace:

“Some people here, a few, use walks in the woods as a way to get psychological space. It’s very intense living here. You’re constantly bombarded with people energy, and for some folks it is harder than for others. We have our [own] room,
but you’re still surrounded by people. They just go on the walks way the hell out. That’s their downtime, to a certain extent.” - TO 3

The forest holds spiritual importance to a contingency of residents at Twin Oaks, and is viewed as a place for personal reflection that can strengthen the connection with nature, and provide insight into larger philosophical matters.

“[The woods offer] the ability to interact with and see and be versed in community of other kinds of life forms, like trees and animals and plants. I think being close to that makes us think differently. Makes us recognize the aliveness of other kinds of life and care about them. And that’s extremely critical to be happening in our society—a thing that does not happen enough—which allows for a lot of disregard and exploitation of non-human life. It can be seen as a sort of physical understanding of our sustenance, and also a spiritual element. I think living in proximity to the natural ecosystems and food production systems that sustain us can give people a soft quality and spiritual outlook.” - TO 6

“I think a lot of what brings people to Twin Oaks is this idea of giving back. Being one with nature… The spirituality of being next to the Earth, of being in the woods, of growing your own food. Of walking through the woods that are just unhindered by the sounds of roads and machinery and iPhones.” - TO 5

“If you walk through [the woods] at Twin Oaks, you’ll find these little places where someone has put a hang chair or a hammock. For them, that space means something. I have my own little places… And, I think this is true for each and every one of us. We like to be in the middle of nature and what it’s like to be there.” –TO 5

The importance of the woods in the community identity of Twin Oaks was recognized through the dedication of a parcel of land as a nature preserve.

“That’s a really pretty forest through there. It’s not exactly old growth, but it’s pretty mature… We acquired it at a similar time to [another parcel of land] which gave us a lot more land to cut firewood on, and I said, ‘Why don’t we take this whole area back here and just set it aside as a preserve?’ and we did.” – TO 7

Other places in the landscape of Twin Oaks are of spiritual importance. One such place is Pagan Ridge, a wide pasture that sits atop a hill, and offer scenic views of the surrounding areas. This location is the site of Pagan festivities celebrated by some in the community, including a Maypole celebration on Beltane (Fig. 6-46, 6-47, 6-48), and festivities for Samhain to mark the harvest season.
Fig. 6-47. Members hold hands during the beginning of the Maypole celebration. Image source: *The Ritual Begins*. Digital image. *Twin Oaks Intentional Community*.

Fig. 6-48. The wrapping of the Maypole. Image source: *Wrapping the Maypole*. Digital image. *Twin Oaks Intentional Community*.
Other celebrations are held throughout the community on a regular basis. Parties and cookouts are frequently held in the Courtyard, outside ZK, or at “Bozo Beach”, the swimming area at the pond (Fig. 6-49).
Just before this researcher’s visit to the community, two members were married on the property, outside in a field, surrounded by the community members and their families (Fig. 6-50). The reception also took place outside, and was catered by the community, with food grown on site.

Funeral celebrations are also held on site. As mentioned above, the community has a small graveyard where the bodies of eight previous members reside. The community makes wooden caskets from lumber harvested and milled on site.

One member spoke about how Twin Oaks is a place that supports residents through all aspects of life, from birth through death.

“...[W]hen you live in [the mainstream], you’re born in some hospital and you die in some hospital. Your kids are schooled by some school. Your job is for some company. All of these things are outside yourself, and you have no control over how these processes are happening. Basic life processes: birth education, life, and death. Because we do so much more of that here: we bear our kids here, we educate our kids here, we work here, and we die here. We even have a
graveyard. We have a lot more control over how those activities happen, and we can manifest our values in each of those processes.” - TO 3

The landscape is also viewed by some members as being crucial for the development and maintenance of alternative culture and alternative values at Twin Oaks. The large land holdings and relative isolation afforded by rural living allows for a sense of autonomy that would not be available in a more urban location.

“The fact that we have so much land allows us to be able to do so much. It allows us to house lots of people. It allows us to produce food that feeds those people... If we had less land, maybe we could still do it, but it would be harder. Like most FEC (Federation of Egalitarian Communities) communities [who share our values], we are rural. I think, in a way, [as a rural community], it’s easier to be an island. The mainstream is always exerting cultural pressure on anything that is not like it, including us. If you are plunked down in a city, it’s a lot harder. You have to work harder to maintain your cultural difference than when you’re more separate. And, so, we are more separate, to our benefit, clearly... I think you might be familiar with the concept of a temporary autonomous zone where, culturally, for a certain period of time and space, some things are true that aren’t normally true. Like at festivals, or any number of those kinds of things. To me, Twin Oaks is a permanent autonomous zone. It’s because we have the land and the space, the legal space from the mainstream system of governance to create these systems and these alternatives and these realities that are so different from the mainstream.” - TO 3

This expression of relative geographic cultural autonomy can be seen through the voting habits of Twin Oaks residents.

“If you look at our region, it’s all Republican except us. Because of how we are and that so many people here vote, there is always this tiny little Democrat demographic dot on the map because of our precinct. It always [goes Democratic] because we make up such a large amount of our precinct. It’s a very land-based thing.” - TO 3

The landscape at Twin Oaks was also described by residents as contributing to an increased sense of connectivity, which takes shape in several forms. Agricultural work was cited as providing a means to connect with the systems that support human life.

“I think people definitely get a lot of inspiration doing agricultural work. They understand more the way that the land sustains and supports us.” – TO 4
While Twin Oaks was not designed explicitly around the cohousing model to promote social interaction, the landscape at Twin Oaks displays many features that do just that.

“The commons is a very nice natural mixing of social space. It functions better than an urban courtyard because people actually know each other and feel comfortable hanging out there.” - TO 7

The communal spaces outside residences and the community center are popular spots where members meet for meals and more informal encounters.

Two members pointed to the systems of trails throughout the community as important spaces for social contact.

“People take walks everywhere through the community. Around the block. Even all of the paths throughout. It’s a very common way of connecting with people and socializing.” -TO3

Fig. 6-51. The sauna at the community pond. Image source: Sauna. Photo by the Author.
Recreational opportunities abound at Twin Oaks. Many members use the pond as a place to swim during the summer and ice-skate during the winter (Fig. 6-52). The sauna is a popular place to relax all throughout the year (Fig. 6-51). The river and the pond are popular sites to go fishing. As one member said, the river is a “...good source of refuge and quality outdoor time.” Ceremonies are held in a sweat lodge by the river several times per year.

Fig. 6-52. Members swimming in the pond. Image source: Swimming Pond. Digital image. Twin Oaks Intentional Community.

The hobbies of individuals are shared with others at Twin Oaks. One member spoke of how another resident’s burgeoning interest in astronomy developed, and how he shared the experience with other interested parties.

“The Red Barn Deck is an amateur observatory. [Another member] found this gigantic telescope. He used to borrow mine, and it’s this little dinky thing, but I went to the Red Barn for the first time and there was this huge one.” - TO 6
Group sports are played in several locations, including a volleyball court, and recreational fields maintained by the community. Ultimate Frisbee is very popular, with games held two evenings a week during the warmer months (Fig. 6-53). Members from Acorn, a sister community, carpool to Twin Oaks to participate. The atmosphere is competitive, but friendly; people of all abilities are welcomed and encouraged. The games begin shortly after mealtime, and last until the sun goes down.

Also, a large adult-oriented playground was built in the woods. The site, known as the Playground of Death (and Rebirth), feature a huge rope swing, enormous structures for climbing, and rope bridges that span great distances from tree to tree.
“I think that it has been revitalized. It was a little treacherous for a while, but it is still fun.” - TO 6

Lastly, the land at Twin Oaks supports opportunities for education and outreach.

Every Saturday, Twin Oaks offers guided tours of the community to outsiders who may be curious about life at Twin Oaks. Each year, hundreds of people participate in the tour that provides history and background about the community and the systems and practices that help hold it together. Community members see this tour as an opportunity to educate visitors about living sustainably, and to promote the community movement, as a whole.

“One reason people come here for a visitor period or tour is the sustainability and ecological aspect of it. That is what is most interesting for some people… When you’re studying sustainability, if you’re doing a good job, you’re going to find out about intentional communities, and that may draw people in.” – TO 3

Additionally, Twin Oaks offers a three-week visitor period for those seeking a deeper understanding of life in community. Applicants who are accepted to the program are housed in a visitor building set up much like the SLGs where members reside. During their stay, visitors are responsible for fulfilling the same work quota as other members, and are given the opportunity to experience the many different work options available to full-time members at Twin Oaks. Labor credits are also given to visitors to attend informational workshops about life at Twin Oaks on a wide variety of topics. The visitor program is also the first step for those seeking to reside at Twin Oaks permanently.

This three-week period offers not only visitors a chance to become acquainted with Twin Oaks, but also for Twin Oaks to learn about the visitors. The community uses this time as a screening period to determine if they think prospective residents might be a good fit. Visitors interested in joining the community can arrange an interview to take place during their stay. Decisions are made by an empowered committee on whether or not to accept the prospective members for a six-month probationary period. After six
months, a community-wide vote takes place on whether to offer full-time status to probationary members.

Additionally, Twin Oaks offers education and outreach through the hosting of conferences and workshops. A space in the woods provides a venue for an annual Women’s Gathering, a three-day event for women to bond, attend workshops, and share stories; as well as for an annual Communities Conference, a three-day event intended to promote ideas about ecovillages, cohousing, and housing-cooperatives.
Chapter 7

Discussion

The Role of Collective Values on Determining Community-Wide Goals and Objectives

The data demonstrate that the landscape, as well as the landscape practices, of these two communities is, indeed, shaped by collective values of environmental sustainability. At a glance, their landscapes of the two communities appear quite similar. Residents live together in small groupings on large parcels, where the vast majority of land remains undeveloped. Areas are set aside to provide food for residents and to provide wildlife habitat. Cars remain separate from where people live and play. People work the land together with a shared commitment to living a life in line with their collective understanding of sustainability, and shape their environment to express that idea. Collective values do seem to be a successful guiding force behind land use and landscape practices in ecovillage communities, and both communities have been successful in working towards realizing their visions of sustainability.

However, the underlying values that guide each community are quite different, and thereby result in different understandings of sustainability, and in different goals. Although both communities have made progress in working towards a collective understanding of sustainability, it is important to recognize that these are very different places.

The most striking differences lie in each community’s relationship to mainstream culture, and in the underlying economic models that support each place. When evaluating
the idea of sustainability within the context of community, it is exceedingly difficult to separate the influence and the importance of collective environmental values from those of social and economic values. Social relationships in intentional communities are complex, and deeply intertwined with the systems and practices through which communities interact with the landscape. Similarly, the economic systems that support communities directly impact their design and organization, as well as how residents spend their time and direct their energy.

Shared values at EcoVillage at Ithaca have helped to create a model that is integrative, progressive, restorative, and educational. Shared values at Twin Oaks have resulted in a model that is autonomous, radical, self-supporting, and fairly holistic.

The common core shared values at Twin Oaks of income-sharing, cooperation, non-violence, egalitarianism, and ecology demand a landscape that supports community run enterprises while also upholding environmental values. Twin Oaks has created land-based business that utilize their local environment to simultaneously provide income, strengthen relationships with neighboring communities, increase local and regional food security, and serve as a stream for education, outreach, and activism.

At EcoVillage at Ithaca, shared values of ecological stewardship, middle-class/mainstream appeal, experiential learning, and outreach/education result in a landscape which functions in a manor distinctive of Twin Oaks. The landscape at EVI is geared more towards modeling for education, and for integration with the dominant culture. The community has partnered with universities to promote experiential learning on site, especially on the topic of sustainability. In that way, EVI can exert influence on local, regional, and global mainstream culture. Activism is also performed through education, as with the Groundswell program, which aims to teach food production skills to those that have traditionally been marginalized from the agricultural system. The
benefits of such programs are difficult to quantify in direct social, economic, environmental, or financial terms, but do appear to be in line with the community's greater vision of sustainability, as demonstrated through ongoing reciprocal relationships with local institutions.

Twin Oaks places greater importance on creating separation from a mainstream culture that they view as impersonal, isolating, and restrictive. They value rurality, and the autonomy that it grants. By largely withdrawing from society, the community at Twin Oaks experiences less pressure to conform to mainstream ideas about cultural and societal norms. In this fashion, Twin Oaks has spent over 45 years developing an alternative culture that seeks to incorporate all aspects of human life, from birth, education, work, life, and death all in one place, and to manifest their common values along the way.

Cooperative egalitarian values result in residents working together with the land. The land on which they live directly supports their lives, and the systems and processes they have developed demand cooperation to ensure community survival. Energy is directed on collective activities that produce food and income in a way in line with environmental values. As a result, strong community bonds, a small environmental footprint, a high quality of life, and a deep sense of connection with the local environment are a byproduct or natural outgrowth of their culture.

Whereas Twin Oaks has worked to develop an alternative to mainstream culture, EcoVillage at Ithaca has worked to develop an alternative within mainstream culture. EcoVillage at Ithaca seeks integration with a dominant culture that, while perhaps considered isolating and impersonal, is mostly enjoyed. In the same vein, EVI seeks integration with elite culture, particularly through educational partnerships, as evidenced through partnerships with Cornell University and Ithaca College. They aim to build a
reputation, spread knowledge, and demonstrate best practices, in a way that is appealing to progressive upper middle class Americans.

At EcoVillage at Ithaca, separate household incomes mean that residents largely lead separate lives. Sources outside the community provide the primary means for community sustenance. While the landscape certainly provides supplemental support to residents in the form of food and resources, its greater function to the village is in supporting the social bonds necessary for an interdependent and convivial community.

The physical design features at EVI that promote social interaction are useful in forming and strengthening community bonds. The land provides opportunities for residents to come together, and connect in myriad ways. In EVI, this could be observed through the collective activities on which residents spend their time within the community. During interviews, participants spoke about the importance of collective activities that promoted connectivity in several different forms. This could be seen through activities such as residents working together to literally building a bridge to connect new neighborhoods, the organization of work parties to help on the community farm during harvest time, or the formation of a land partnership committee to direct environmental restoration efforts. At EcoVillage at Ithaca, the land represents an opportunity from which to realize the community’s primary mission of promoting experiential learning about living sustainably. On all levels, from the individual, group, neighborhood, to village scale, residents in both communities are working together to educate themselves and others about what exactly sustainability means, and how to best achieve it.
Ecovillages as a Model for Sustainable Development

One of the guiding questions of this research was whether or not ecovillages can serve as a model for sustainable development. In answering this question it is important to recognize that the values and goals of each individual community are unique—their actors and participants; their specific physical, cultural, geographic, political, economic, and environmental conditions. It would be naive to think that one could simply replicate the physical design of place and expect to achieve any degree of sustainability. Sustainability within the context of community is a nuance, multi-faceted, multifarious, iterative process, and not an end result.

That said, certain physical design elements could, indeed, be incorporated into mainstream community developments that can promote sustainable practices. The cohousing principles that promote social interaction appear helpful in the formation of community bonds, preservation of open space, reduction of resource consumption, and increased quality of life. Cohousing strategies that promote social interaction, such as shared courtyards, shared pathways, restricted vehicular access, a common house, and shared meals can easily be incorporated into progressive mainstream community designs.

Similarly, the model of community-directed development appears particularly useful in the development of shared values and the formation of community. So, too, can strong mission statements guide development patterns and practices, help establish environmentally conscientious land practices, and promote the development of an ecologically aware culture. Landscape architects may do well to educate themselves in models that encourage community-driven development, and explore what roles they can play in facilitating the process.
Additionally, the efforts to promote sharing present within the ecovillage communities may be applicable to mainstream models of development. Vehicle sharing programs have been gaining in national popularity over the past several years, and mainstream communities may do well to incorporate the design of such a program into existing and proposed developments. The sharing of resources and energy can take place in countless forms, and may result in reduced economic expenditures, reduced consumption of resources, reduced environmental impacts, increased social connectivity, and a higher quality of life for residents.

A Note on Asymmetry in Scope and Depth of Research Between Communities, Specifically Regarding Economics

It is worth noting that in some areas, the case study reports are unequal in depth and breadth. While some variation in findings may be attributed to the idiosyncratic nature of individual communities, other differences are so stark that they demand further explanation. This may be most obvious when noting the asymmetrical discussion and criticism of the economics of the two communities. There are three interrelated causes that can account for this difference: research methods, community organization, and access.

Because participant-observation and key-informants were primary methods used to gain information about these communities, the research was, in some ways, limited by the data provided by interview subjects and information that could be gained through direct observation. Because most of the income-generating activities of EVI take place off site, only limited amounts of economic activity could be directly observed, such as farming activities. Even on site bed and breakfast establishments were unable to be
directly observed, as such investigation would likely be unnerving to those utilizing such a service. Additionally, the research instrument used in conducting interviews was concerned with land use and practices of the ecovillage as a whole, and did not contain a direct line of inquiry into the personal economic situations of any individuals. Even if such a line of questioning was presented during the course of the interview, each interview subject could likely only speak with authority about their own economic identity; one that is largely separate from their contribution to the collective identity of EcoVillage at Ithaca as a whole.

The economic model at Twin Oaks, by contrast, lends itself quite well to promoting an understanding of economic conditions of the community through lines of inquiry directed at residents about land use and landscape practices. All members of Twin Oaks have a direct stake in all income-generating activities and, typically, at least some base level of knowledge about community businesses and enterprises. Data about community economics was gathered in nearly every interview conducted at Twin Oaks. The same was simply not true in the case of EcoVillage at Ithaca.

Economic activities at Twin Oaks are directly tied to the land and fit much more neatly within the scope of this research than at EVI. An inventory of the economics at EcoVillage at Ithaca would require an investment of time and resources greatly in excess to that which was available for this research.

Moreover, the very nature of community organization allowed this researcher much greater access to all facets of community life at Twin Oaks than at EcoVillage at Ithaca. As a visitor at Twin Oaks, I was treated in much the same way as a resident was treated. I stayed in a residence much like that of the full-time residents, and performed much of the same work as the full-time residents. I had direct interaction with a greater number of residents at Twin Oaks than EcoVillage at Ithaca, and also spent much more
time engaged in unscripted, friendly conversation with ecovillage members, all of which contributed to my understanding of place.

While effort has been made to limit the incidence of inequity in this research, I ultimately determined that it might be more useful and interesting to include more information and content on Twin Oaks Community, even if the ultimate distribution of content is unequal with that at EcoVillage at Ithaca.
Chapter 8

Conclusion

The preceding research was a cultural study of landscape in two ecovillage communities. Through observer-participation, key-informant interviews, document based analysis, and evaluative mapping, an understanding of place was developed, along with an understanding of the role of collective values in shaping the land use and landscape practices at both Twin Oaks and EcoVillage at Ithaca. Through this approach, it was determined that collective values, as outlined and structured through community documents such as mission statements and bylaws, play a guiding role in the human activities and practices that ultimately shape the existing landscapes of each community.

The ecovillage model represents the creation of an alternative culture, as compared to the mainstream. The degree of withdrawal from, versus incorporation with, the mainstream appears to be influenced by the larger mission of each community, as guided by the underlying collective values.

Despite the differences in approach, the communities share much in common, particularly the importance given to strengthening food production systems, the development of systems that promote efficiency and reduce waste, a focus on social and environmental justice, and the promotion of interdependence amongst residents and surrounding communities.

This research has provided new knowledge to the field of landscape architecture, particularly for landscape architects interested in community-focused approaches to sustainability and sustainable development. The existing body of research on ecovillage communities has been focused chiefly on specific metrics for measuring or evaluating some component of the ecovillage such as Quality of Life or resource consumption. This
research has been unique in that it has provided a detailed case study of the land use and land management practices of two ecologically conscientious intentional communities. Moreover, by examining two communities with similar shared goals of sustainability and different shared fundamental values, this research suggests that the values that underlie the larger aims of a community carry through all aspects of community life, and thereby are a principal guiding force in shaping a community’s landscape.

In the case of EcoVillage at Ithaca, guidelines set forth in the original founding documents were developed and enacted by future residents with the input of professional planners, designers, academics, and scientists—all readily available in the Ithaca area. With the exception of a few specific guidelines and objectives, almost all of these guidelines have been enacted, maintained, and expanded upon. The goals originally outlined were focused enough to establish collective vision of sustainability that the community could support, but broad enough to allow for alterations as new knowledge and understanding of sustainability are developed, and as new residents bring fresh ideas.

At Twin Oaks, the bulk of the original guidelines set forth as Behaviorist doctrine were abandoned within only a few years of the founding of the community. The principles of Behaviorism were never fully embraced by the majority of the community, and without sufficient buy-in, these principles fell to the wayside in favor of values that were supported and shared by a more sizeable percentage of the community. As an alternative culture was developed from the bottom up, collective values and norms of income sharing, non-violence, egalitarianism, agrarianism, and ecology emerged. These shared understandings were used to form the guidelines and systems that underpin land management and land practices that support human life at Twin Oaks.

These findings suggest that in these two cases, founding documents were successful because they are based upon values that have widespread community support.
The findings also suggest that community guidelines were successful because they were developed by community members, rather than imposed upon by a group that was not directly involved in the creation of and ongoing participation in community. However, these findings do not advocate that a group must be directly involved in the creation of guidelines in order for them to be successfully embraced. As both EVI and Twin Oaks demonstrate, new members appear quite willing and able to adhere to guidelines established prior to their arrival, so long as these guidelines have community support. However, the findings do suggest that part of the success of the community directives of both EVI and Twin Oaks lies in the existence of processes and mechanisms for individuals to alter and impart change to the systems, so long as they can rally community support.

Additionally, this research has provided new knowledge in the form of in-depth examination of the land use and land management practices of these two specific communities, with specific emphasis placed on the relationship of inhabitants to their local environments. No previous studies have examined the benefits that these ecovillagers receive from their surrounding ecosystems, or the patterns and processes of use and management that dictate how ecovillage residents care for and maintain the landscapes in which they inhabit.

These findings may be of interest to researchers engaged in the topics of ecovillages, sustainable development, community development, and the physical design of sustainable lifestyles. Moreover, this research may be a useful starting point for researchers specifically interested in understanding the exchanges between ecovillage communities and the landscapes that support them. With more time and funding, one could feasibly observe, measure, describe, and model the flow of energy, goods, and services between ecovillage residents and their local environments. The findings of such
a study would be useful in gaining a comprehensive understanding of how such flows may best be leveraged to achieve a full range of ecosystem services within the local landscapes of both ecovillages and emerging forms of intentional communities.
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