

Planning for small forest landscapes:
facilitating the connection between people and nature

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Abstract

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A significant area of forest land in the United States is held by a diverse group of people known by the US Forest Service as family forest owners. Surveys reveal that family forest owners own forest land for a variety of reasons including scenery, nature protection, recreation, privacy, timber production, family legacy, and investment. Despite this variety of purpose and commitment, most materials and workshops designed to assist small forest landowners focus on timber management and forest health and provide little information about managing for other goals. This suggests that there may be an opportunity to engage family forest owners in a more holistic way to help them improve the health of their forests while also enhancing the scenic, recreational and other cultural amenities of their properties. In order to learn more about how individuals with small forests see their land, what excites them about it and how they interact with it, a focus group was held and personal interviews completed while visiting forest owners on their property. During the visits, forest owners conveyed their experiences and talked about exploring and developing an understanding of their property, relating to nature, and forming an attachment to place. The research findings suggest that a process oriented experience based approach to planning can facilitate a deep connection to the land that remains engaging and open to new experiences over time.

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Laura Cooper - Master's Thesis 2013

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Introduction

Recently I took a trip to the Bloedel Reserve on Bainbridge Island in order to walk in a landscape that was designed to foster a restorative experience between people and nature. As I was walking around I was struck by the complexity of the experience that engaged all my senses. I learned from a brochure that Prentice Bloedel had invited academics, landscape architects and horticulturists to work with him to develop this vision over a decade. As I was drawn across an open field toward a group of farm buildings and lead into a forested area by a little path that meandered around a pond, across a ravine and through a wetland before spilling me out into the more formal landscaping framing the main house, a pond and a Japanese teahouse, it became clear that I was walking through a choreographed sequence of gardens that had been carefully designed. I felt that I was meant to be the unifying element and that my sensory, emotional and aesthetic response to each of these settings was meant to engender a sense of harmony in the underlying order that unites them.

As an architect, I felt right at home with the design process as an intellectual project and left eager to learn more about the ideas that influenced some of the design decisions. Working on architectural projects, I had become accustomed to planning and designing buildings up front, seeing them constructed and then walking away; a process that seldom takes more than a couple of years and generally discourages changes in the design during the construction phase. But here, as I was wandering from formal to informal gardens and taking in the changes in the vegetation, the paths, the views, colors, smells and the quality of light, I thought to myself, I am walking in a landscape that could never have been conceived in a single plan or vision, but is an outgrowth of living in a place and exploring ideas over time.

I learned that when Bloedel had first acquired the property, he used to go out for hours exploring with his machete carving paths. He wrote,

We found single plants and colonies of fragile woodland species, mosses, ferns, a world of incomparable diversity, a panorama of survival in an eternal struggle, exciting in its vitality. We found that plants often have a way of arranging and disposing themselves with a harmony of color, texture and form when left to themselves... Out of these experiences comes an unexpected insight. Respect for trees and plants replaces

indifference; one feels the existence of a divine order. Man is not set apart from the rest of nature – he is just a member of that incredibly diverse population of the universe, a member that nature can do without but who cannot do without nature. One realizes that we humans are trustees in this world, that our power should be exercised in this context. (Kreisman, 1988, p.43)

Learning about the process that shaped the reserve deepened my appreciation for it. On the one hand there is the aesthetic and spiritual impact of walking through a landscape that was designed to foster a feeling of harmony with nature. On the other hand, there is the personal connection that Bloedel developed with his land as he explored and worked on it, a relationship that informed his thoughts about nature and his vision for the reserve.

This thesis project seeks to explore the relationship to a forest landscape that is formed and shaped in the everyday experience of living and working on a piece of land by engaging family forest owners in a conversation about their property. Learning how family forest owners come to know, understand and connect to their land can provide valuable insights into ways in which landscape planning and design might enrich the relationship between people and nature – helping to maintain the ecological integrity or functioning of landscapes while also enhancing the recreational and scenic amenities such that when people interact with their property, they come away all the better for owning it and for spending time in it.

Project Rationale

The idea for this research project originated from an observation that while family forest owners cite a variety of reasons for owning land on surveys, including recreation, scenic beauty, timber management, and wildlife appreciation, most materials including websites, brochures and workshops that assist them focus on timber management and forest health and provide little or cursory information about managing for other goals. This suggests that there may be an opportunity to engage family forest owners in a more holistic way to help them improve the health of their forests while also enhancing the scenic, recreational and other cultural amenities of their properties.

Forestlands play a vital role in the United States, providing opportunities for people to connect to nature, supplying timber products, sequestering carbon, and maintaining landscape diversity, wildlife habitat, and clean air and water. According to the National Woodland Owner Survey (Butler, 2008), over half (56% or

423 million acres) of forestland in the United States is privately owned, and of this, nearly two-thirds (264 million acres or 62% of private forestland and 35% of all US forestland) is held by a diverse group of non-industrial forest owners known collectively as family forest owners, including families, individuals, trusts, estates, family partnerships and other unincorporated groups of individuals. Family-owned forests supply a significant amount of timber, accounting for 29.2% Washington State's timber harvest in 1998, for example (Creighton & Baumgartner, 2004) and contribute to the overall maintenance of forested ecosystems. Given the importance of family-owned forests for people and the environment, understanding how these forestlands are used and managed is important for maintaining their long term health and viability. It is also important to understand the values and objectives of this increasingly numerous and diverse group of forest owners in order to design programs that engage their interests and meet their needs.

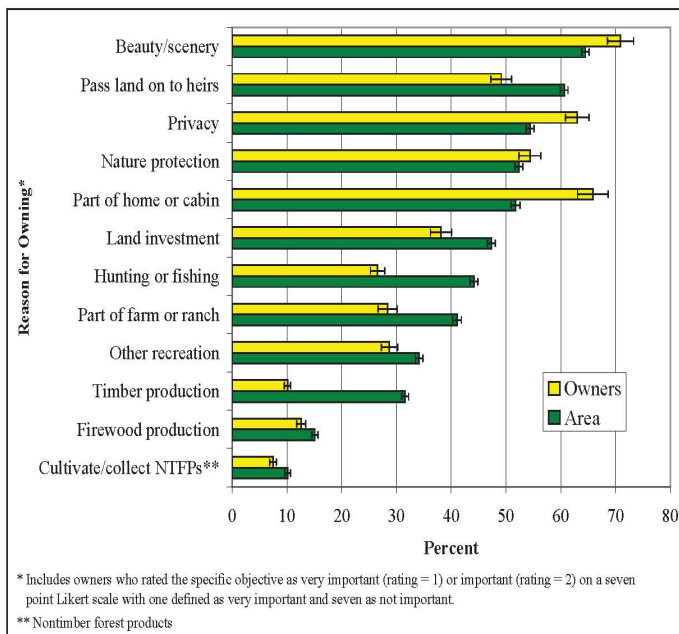


Fig.1. Main reason for owning family forests in the United States (fixed responses rated on a 7-point Likert scale) (Butler, 2008)

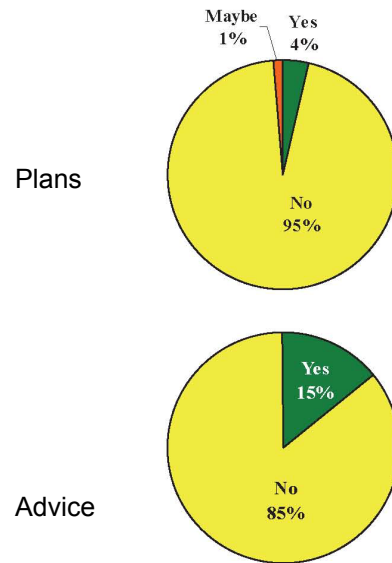


Fig.2. Management plans written and advice received by family forest owners in the United States (Butler, 2008)

The United States Department of Agriculture Forest Service conducts the National Woodland Owners Survey to better understand who owns the forests in the United States, why they own them, how they use them, and what they intend to do with them. According to their 2008 report which summarized their findings from data collected between 2002 and 2006, family forest owners cited many reasons for owning land (Fig.1) including beauty/scenery, family legacy, privacy, recreation, nature protection, home, investment, and timber production family (Butler, 2008). Although only a minority, (about 10%), of family forest owners cited timber production as a primary ownership objective, about 46% indicated that they have harvested or removed trees from their land (Butler, 2008). Reasons given for removing trees included improving the quality of remaining trees, removing damaged or mature trees, needing wood or money for personal reasons, and clearing land. While harvesting timber was fairly common, only 4% of family forest owners wrote forest plans and 15% sought advice (Fig.2), raising concerns about whether these forests are being managed sustainably (USDA Forest Service Family Forest Research Center, 2008).

The low percentage of family forest owners writing forest management plans is likely due in part to the fact that many do not identify timber management as a primary value among their many reasons for owning forest land. For example, while owners of larger parcels were more likely to cite timber harvesting as a main objective, enjoyment of beauty and scenery was cited with equal frequency across all holding sizes (Butler, 2008). This suggests that a greater number of forest owners may be reached if they are engaged through a variety interests including timber as well as scenic beauty, spirituality, recreation, and environmental protection.

Nevertheless, most materials including websites, brochures and workshops designed to assist family forest owners focus primarily on timber management and forest health. Stewardship workshops offered through Washington University and a brochure published by the Arkansas Forestry Commission (2011), for example, focus on timber management, forest health, fish passage, riparian protection, wildlife habitat and financial incentive programs, and contain minimal information about aesthetics. Some brochures (Hamilton et al. 2011) focus on aesthetics, but only in relation to timber harvest. A small number of

brochures directed at family forest owners (Pennsylvania State University, 2008) discuss aesthetics in a general way, but provide few examples.

Understanding family forest owners' motivations and values is difficult as demographics and ownership patterns are always changing. Studies indicate that the number of family forest owners is increasing and parcel sizes are decreasing as the forest industry is divesting itself of forest holdings and large parcels are being subdivided (Zang et al. 2009). The average family forest holding identified by the NWOS report (Butler, 2008) was 25 acres nationally, with most owning less than 10 acres. In Washington State the average holding size for family forest owners was between 10-19 acres. As well, the newer generation of forest owners is becoming more affluent, less interested in timber, less interested in forest management in general, and tending to be more supportive of general environmental goals (Mater, 2007; Creighton & Baumgartner, 2004).

The NWOS included both a closed-ended and an open-ended question to assess family forest owners' reasons for owning forestland. Results from the closed ended question are summarized above (Fig.1). Analysis of the open-ended question (Bengston et al. 2011) revealed a far richer description of reasons for ownership. For example, Bengston et al. (2011) found that environmental reasons for ownership included nature protection, stop development, wildlife habitat and ecosystem services. Home and privacy included rural lifestyle and quality of life. Non-instrumental values included aesthetic, spiritual/religious, solitude, love of land and bequest. Investment included timber, firewood, conservation and development. They also found that environmental and non-instrumental reasons were expressed less frequently in open-ended responses than in the closed-ended question. This may indicate that people are reluctant to express deeply personal values unless prompted by a fixed category (Bengston et al. 2011).

Several of the close-ended questions on the NWOS failed to capture the experience of forest owners (Fig. 3&4). "None of the above" was cited by more than 30% of family forest owners regarding their forest activities, equaled only by private recreation which was also cited by more than 30% of participants. Other activity categories that forest owners could check included posting land, road/trail maintenance, wildlife habitat improvement, collection of non-timber forest products as well as a number of timber management

activities. In a question about future plans, over 30% of forest owners checked minimal activity and over 40% checked no activity. Other categories included harvesting a variety of timber products, transferring to heirs, buying or selling land and converting it to other uses.

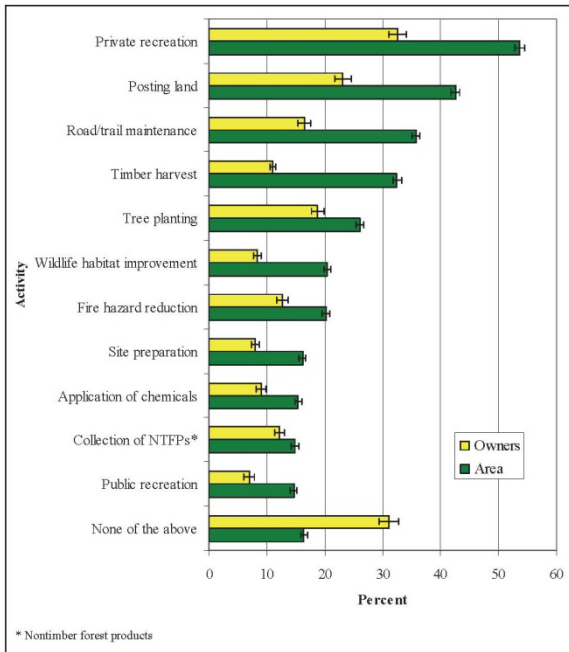


Fig.3. Forest activities by family forest owners in the United States (Butler, 2008)

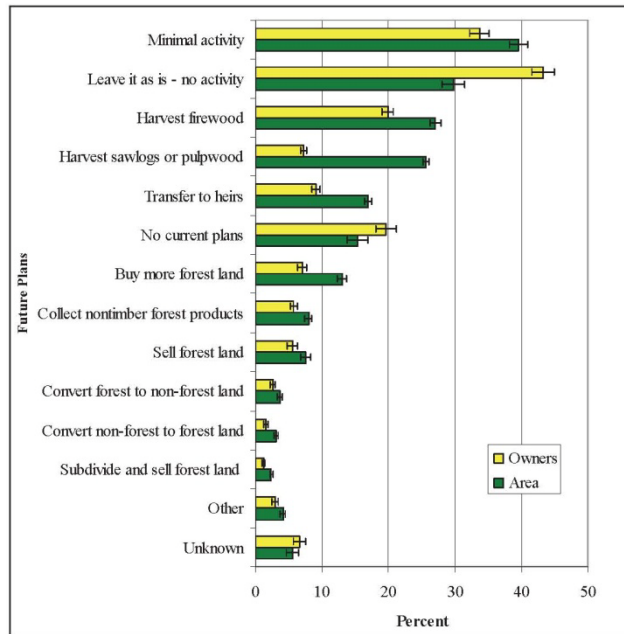


Fig.4. Future (next 5 years) plans of family forest owners in the United States (Butler, 2008)

The failure of questions to adequately characterize the activities and plans of family forest owners suggests that new research is needed to better identify the types of projects forest owners undertake and the visions they have for their land. As well, the limitations of closed-ended questions identified above suggests that qualitative research can make an important contribution by providing a more nuanced understanding of family forest owner's motivations, values and experiences. Such research can provide valuable insights into ways that people connect to nature that can help guide environmental policies and programs and enable forestry educators, environmental planners and service providers to communicate more effectively with forest owners.

Research Goals and Questions

In this research project I intend to explore how family forest owners relate to their land by speaking with them at length about their experiences and allowing them to discuss the things that are important to them in order to gain insight into a more holistic approach to forest management and environmental planning and design that might engage a larger number of people and serve to enrich the relationship between people and nature.

The experience of living on a piece of land and interacting with it over time is a process that is ongoing and open-ended. In order to gain insight into the meaning that family forest owners attach to their land and the process by which that understanding is formed, I seek to address the following questions:

- **How do family forest owners get to know their property?**
- **What do they come to know?**
- **How do they sustain their relationship to their land over time?**

Theoretical Background

In his book, *Space and Place, the Perspective of Experience*, Yi-Fu Tuan (1977) narrated a conversation between two physicists, Niels Bohr and Werner Heisenberg when they visited Kronberg Castle in Denmark. Bohr said to Heisenberg:

Isn't it strange how this castle changes as soon as one imagines that Hamlet lived here? As scientists we believe that a castle consists only of stones, and admire the way the architect put them together. The stones, the green roof with its patina, the wood carvings in the church, constitute the whole castle. None of this should be changed by the fact that Hamlet lived here, and yet it is changed completely.... Yet all we really know about Hamlet is that his name appears in a thirteenth-century chronicle. No one can prove that he really lived, let alone that he lived here. But everyone knows the questions Shakespeare had him ask, the human depth he was made to reveal, and so he, too, had to be found a place on earth, here in Kronberg. And once we know that, Kronberg becomes quite a different castle for us. (Tuan, 1977, p.4)

This quote describes the way culture, stories, the imagination and memory become embedded into the meaning of places. Just as Kronberg Castle is much more than the sum of its physical components, so is a small piece of forestland more than the sum of its ecological components and stewardship more than the act of thinning trees and protecting riparian zones. Kronberg Castle is a famous place haunted by a famous figure who may be real or imagined, and a small piece of private forestland in rural Washington may seem ordinary by comparison. However, the very fact of its ordinariness makes it the perfect place to explore the relationship between people and nature and how a landscape can be endowed with a great deal of meaning because of the fact that it is lived in and personally experienced every day.

Family forest owners have inherited the legacy of a managed landscape. Most of the forestland in the Pacific Northwest has been harvested at least once and often several times, and this affects how we think about forests, the way forests look and the description of work that is needed to maintain their health. Many family forest owners are older, having grown up in the 1940's, 50's, 60's and 70's. They would have grown up during the "back to nature" movement, through debates that pitted the environment against society and the current quest for a balanced relationship between social, economic and environmental needs. Understanding how forest owners approach their land within a larger historic, cultural and

ecological environment will provide context for the experiences they relay during the interviews. The following themes are explored to provide such a theoretical framework for the interviews:

- **Relating to nature:** briefly explores origins of the intellectual split between nature and society in the western tradition and how it has evolved in the context of the United States.
- **Ways of knowing:** synthesizes how we understand the ways in which people experience a place through sensory perception, memory and the imagination.
- **The Reasonable Person Model (RPM):** a theory of how people develop and extend their understanding of the world in which they live.

Relating to Nature

The very notion of wilderness is an amalgam of the real and the imagined, the actual and the idealized; its types are manifold, ranging from Edenic to chaotic, the Paradisiacal to the perverse, not to mention the monotonous and the uninspiring. (Casey, 2009, p.191)

The idea of wilderness as it has evolved within the western tradition is both alluring and complex, accounting for multiple and often contradictory conceptions of wilderness that exist today. Europeans who settled in North America brought with them competing conceptions of wilderness that grew out of the Judeo-Christian tradition and the European Enlightenment. The Garden of Eden was considered to be a paradise perfectly suited to human needs where Adam and Eve lived in complete harmony with nature. The expulsion from Eden was an expulsion from God's realm into the wilderness, which was often depicted as a godless wasteland (Casey, 2009; Nash 2001). In his book, *Wilderness and the American Mind*, Roderick Frazier Nash (2001) wrote that the lines between domesticated (controlled) and wild (uncontrolled) land and animals began to be drawn with the advent of herding, agriculture and settlement in Europe. Wilderness, as distinguished from cultivated land, became "the place of wild beasts" and "a region where a person was likely to get into a disordered, confused or wild condition" (Nash, 2001, p.2). At the same time, the Exodus narrative established a tradition of going into the wilderness for freedom and purification of faith.

North America as a landscape represented an inviting paradise with a promise of freedom as European pioneers fled into the "wilderness" in the Exodus tradition to found a new church and society. Early accounts by Europeans trading with Native Americans for over one hundred years before settlers arrived

at Plymouth Rock, described the Atlantic coast of North America as densely settled and well-defended (Mann, 2011). The tribes in the area of southern New England cultivated agricultural crops such as corn, squash, beans and tobacco and used fire to maintain an open forest structure to attract game and plant berries, nuts, and fruit trees (Cronon, 1983). While historians today acknowledge the struggles, European pioneers perceived the work of Native American women only in maintaining agricultural crops and thought the men who did the hunting were enacting a life of leisure. Hunting in Europe was a leisure activity of the upper classes; the majority of Europeans relied entirely on agriculture and domesticated animals for food. As a result European accounts of North America created an alluring impression of an edenic garden in perpetual summer (when accounts were usually written) where food and game were plentiful and required little work or planning to obtain (Cronon, 1983).

The acquisition of land by pioneers for cultivation and settlement and the European ideology of conquest were further facilitated by the realities of the landscape. Life for European settlers proved to be much more difficult than they imagined, as many were ill prepared for the cold and food scarcity of winter. As a result, community emphasis was placed on cultivating the land in the European tradition (Cronon, 1983; Mann, 2011). In addition, by the time settlers were established at Plymouth Rock, the Native American coastal societies had been ravaged by European diseases. Survivors were living in much smaller communities, leaving many settlements and previously cultivated areas abandoned and overgrown (Mann, 2011). There was also the complication of differing perspectives on the right to land and its use between the Europeans and the Native Americans. Treaties granting settlers the right to use land were understood differently by the two groups representing two distinct frameworks for understanding and describing the relationship between humans/ culture and nature/ landscapes. The tribes of southern New England moved their settlements seasonally to areas with greater abundance of food and materials and changed the location of their fields every few years to find new fertile ground while allowing the soils and forest to regenerate. Their relationship was not one of harmony but it reflected an understanding of ecological processes and natural cycles. The settlers occupied the land in the European fashion, establishing permanent villages and agricultural fields organized around the concept of private property. Native American's more mobile use of the land for settlements, crops and hunting and by extension their

rights to it became invisible to the European settlers. This context established a framework for Europeans to describe the land as a wilderness, an uncultivated expanse/ territory (Cronon, 1983).

The emphasis on permanently cultivating and transforming the land accelerated with the expansion of settlements and the eventual establishment of the United States. The arrival of increasing numbers of immigrants, the acquisition of more territory, and the push to settle territory required that wilderness be conquered and cultivated. This trend of transforming the land and putting it to “good use” would be reflected in the monumental engineering projects of the last century undertaken to harness nature’s resources for the “public good.” In a 1914 publication defending Seattle’s massive regrading projects, for example, the Seattle Chamber of Commerce stated,

Nature apparently grew tired before she finished Seattle. She made a wonderful harbor, produced an empire of timber-hung pictures on the horizon, spread three lakes among the hills, and left the town site to itself like a tousled, unmade bed. Only when man completed the work which Nature had left undone could commerce pour unhampered into its natural channels (Klinge, 2007, p. 44).

By 1845 when Henry David Thoreau built a small cabin on Ralph Waldo Emerson’s property at Walden Pond outside of Concord, Massachusetts, the New England Landscape had become largely cultivated, and Thoreau and the transcendentalists lamented the loss of what they thought had been a pristine American wilderness (Cronon, 1983). Fearing the prospect that all of North America would become completely cultivated, Thoreau argued for the preservation of samples of wild nature, or wilderness, as “a reservoir of intellectual nourishment for civilized men (Nash, 2001, p.102).” In his essay, *Walking*, Thoreau made his case for the preservation of wild places:

The West of which I speak is but another name for the Wild; and what I have been preparing to say is, that in Wildness is the preservation of the World...Life consists with wildness. The most alive is the wildest. Not yet subdued to man, its presence refreshes him...When I would recreate myself, I seek the darkest wood, the thickest and most interminable and, to the citizen, most dismal swamp. I enter a swamp as a sacred place, a sanctum sanctorum. There is the strength, the marrow of Nature...In short, all good things are wild and free. (Thoreau, 2000, pp.644-652)

In the above passage, Thoreau wrote about wildness as a quality of nature, which he considers to be most expressed in “the Wild”, but which can also be experienced in nature near at hand. In *Walden* Thoreau went into the woods near home to discover the essential qualities of nature that he considered vital for the human spirit. He wrote,

I went to the woods because I wished to live deliberately, to front only the essential facts of life, and see if I could not learn what it had to teach, and not, when I came to die, discover that I had not lived.(Thoreau, 2000, p.86)

Whereas the patterns of civilized life were considered by transcendentalists to stifle and weaken a person's free spirit and ingenuity, wildness had value as a source of vigor, inspiration and strength. Thoreau saw wildness as the "raw-material of life," believing that people who lost contact with it became dull and weak (Nash, 2001, p.88). In waking up at Walden he wrote,

Little can be expected of that day, if it can be called a day, to which we are not awakened by our Genius, but by the mechanical nudgings of some servitor, are not awakened by our newly acquired force and aspirations from within, accompanied by the undulations of celestial music.(Thoreau, 2000, p.84)

The exaltation of wildness in nature by the transcendentalists drew heavily from the European Enlightenment, with breakthroughs in physics and astronomy engendering a sense of awe in a divinely ordered universe, even if the order was only apparent after extensive observations and experimentation. Natural objects were understood as "terrestrial manifestations of God (Nash, p.125)," and wild nature was considered to be the best representation of divinity because it was seen to be least altered by "artificial" human influences. The sublime developed as an aesthetic and dispelled the notion that beauty in nature could only be seen in comfortable, fruitful and well ordered scenes. The picturesque movement in England found beauty in nature's roughness and irregularity. Thomas Cole's paintings that inspired the Hudson River School were dramatic compositions filled with dark gorges, precipitous cliffs and surging storm clouds. (Nash, 2001) Wildness was sublime and the sublime was increasingly a defining element of the American character.

Transcendentalism described a way for the individual to experience a feeling of unity with nature and by extension a unity with the universe. By inhabiting the woodland surrounding Walden Pond, Thoreau developed a sympathetic bond with nature:

In the midst of a gentle rain...I was suddenly sensible of such sweet and beneficent society in Nature, in the very pattering of the drops, and in every sound and sight around my house, an infinite and unaccountable friendliness all at once like an atmosphere sustaining me, as made the fancied advantages of human neighborhood insignificant... Every little pine needle expanded and swelled with sympathy and befriended me. I was so distinctly made aware of the presence of something kindred to me, even in scenes which we are accustomed to call wild and dreary, and also that the nearest of blood to

me and humanist was not a person nor a villager, that I thought no place could ever be strange to me again. (Thoreau, 2000, p.124-125)

In describing his cabin at Walden Pond in a partially built state, Thoreau wrote:

This frame, so slightly clad, was a sort of crystallization around me, and reacted on the builder. It was suggestive somewhat as a picture in outlines. I did not need to go out doors to take the air, for the atmosphere within had lost none of its freshness. It was not so much within doors as behind a door where I sat, even in the rainiest weather. (Thoreau, 2000, p.81)

This passage highlights an interesting ambiguity. The cabin provides a cultural frame through which to view nature, “a picture in outlines,” somewhat reminiscent of the way picturesque paintings present nature from a particular perspective. At the same time the porous frame is penetrated by wind and rain within a landscape that envelops it completely. At Walden, Thoreau found “a sort of border life,” which he considered to be ideal, where a person could alternate between wildness and civilization or find permanent residence in “partially cultivated country” (Nash, 2001, p.93).

The movement to act on behalf of wilderness before it was gone began in the late 19th century and accelerated in the 20th century with advocates such as President Theodore Roosevelt, John Muir, and Gifford Pinchot. In 1872 President Ulysses S. Grant created Yellowstone National Park to prevent private acquisition and exploitation of geysers, hot springs and waterfalls; in 1885 New York State created a Forest Preserve in the Adirondacks to protect the water supply and the Forest Reserve Act was passed in 1891 (Nash, 2001). While initial advocates of public reserves were not concerned with wilderness, soon thereafter John Muir began writing essays to rally the public on behalf of wilderness preservation, starting with Yosemite. He traveled into the Sierra Nevada Mountains and later into the Alaskan wilderness to seek a transcendental connection to nature. He wrote,

You bathe in these spirit-beams, turning round and round, as if warming at a camp-fire. Presently you lose consciousness of your separate existence: you blend with the landscape, and become part and parcel of nature... The clearest way into the universe is through a forest wilderness. (Nash, 2001, p.126)

For John Muir, nature was medicinal to lives “bound by clocks, almanacs... and dust and din.” He called on people to:

Climb the mountains and get their good tidings. Nature’s peace will flow into you as the sunshine into the trees. The winds will blow their freshness into you, and the storms their energy, while cares will drop off like autumn leaves. (Nash, 2001, p.128)

The movement to conserve public land splintered over whether national forest reserves should be preserved as wilderness, a position represented by John Muir, or conserved as “working forests” providing a sustainable supply of timber products as argued by Gifford Pinchot, the founding director of the U.S. Forest Service. Nevertheless the efforts created a legacy of national, state, and local parks and forests, environmental protection legislation, and galvanized a diverse base of environmental and natural resource advocates who became part of the modern environmental movement we know today.

While Muir traveled into remote places, others sought a connection to nature closer to home. In her book, *Forest and Garden, Traces of Wildness in a Modernizing Land, 1897-1949*, Melanie Simo (2003) traced how interest in finding wildness in half-natural settings increased after 1890, when the superintendent of the census in Washington observed that the line of the frontier could no longer be detected. She described how Frederick Jackson Turner, a professor at Wisconsin and later at Harvard, found areas of wilderness interpenetrated by lines of civilization while pouring over census maps of New England in 1893. Writers such as Sarah Orne Jewett and Edith Wharton were attracted to the wild regrowth on abandoned farms accompanying an economic decline in rural New England. In his book, *Modern Wilderness* written in 1940, William A. Babson described his exploration of swamps and marshes near highways and hidden by billboards, encouraging readers not to lament the passing of the frontier, but to go look for it (Simo, 2003). In *A Sense of Wonder*, Rachel Carson (1956), the author of *Silent Spring* which alerted people to the dangers of pesticides, described spending the summer along the Maine sea shore introducing her young nephew to the wonders of nature. She wrote,

The sharing includes nature in storm as well as calm, by night as well as day, and is based on having fun together rather than on teaching. (Carson, 1956, p. 10)

The field of ecology emerged at the end of the 19th century providing a new framework for the study of nature. Before the word “ecology” was generally known, a journal called *Garden and Forest* published articles between 1888 and 1897 by professionals and amateurs from many regions. Articles generally favored native plants, and a common theme, whether it was expressed from an aesthetic or a scientific point of view, was how plants and other living things were adapted to their environments (Simo, 2003). Henry Cowles’ study of sand dunes on the shores of Lake Michigan, published in 1899, posited a theory

of community succession whereby dunes were populated in sequence by annuals, sand-binding dune grasses, shrubs, cottonwoods, pines and oak. Although studies describing linear succession based on chronosequences have been called into question in recent years (Johnson & Miyanishi, 2008), the Cowles dune study was influential in developing an understanding of the relationship between plant associations and environmental dynamics.

These insights were carried over into landscape architecture by practitioners such as Jens Jensen, a friend of Cowles who incorporated native plants and ecologies into his designs. At Lincoln Memorial Garden in Springfield Illinois for example, Jensen incorporated native plants from Illinois and other states Lincoln had visited and employed a broad brushed planting scheme relying on natural processes and succession, allowing areas to sprout and develop from young saplings, bulbs, wildflowers and acorns. The interest in native plant associations was also popularized by books such as *American Plants for American Gardens*, written in 1929 by Elsa Rehmann and Edith Roberts. (Simo, 2003)

In his book, *A Sand county Almanac and Sketches Here and There*, Aldo Leopold (1968), one of the 20th century's leading figures in conservation and ecology, synthesized science and sentiment in his defense of wilderness. Similar to Thoreau, Leopold developed many of his theories and formed a deep personal bond with nature through the everyday experience of living on his property in Wisconsin. He often walked alone at night or dawn when he was best able to notice the nuances of his surroundings, "to arrive early in the marsh is an adventure in pure listening; the ear roams at will among the noises of the night, without hindrance from hand or eye." His understanding grew out of a keenly developed sense of perception, paying attention to details and patterns, combining the objectivity of scientific observation with the poetry of transcendent experience. In the essay Chihuahua and Sonora-Song of the Galivan he described how with careful observation a person can begin to experience the rhythms of nature. He wrote,

This song of the waters is audible to every ear, but there is other music in these hills, by no means audible to all. To hear even a few notes of it you must first live here for a long time, and you must know the speech of hills and rivers. Then on a still night, when the campfire is low...Sit quietly and listen....Then you may hear it – a vast pulsing harmony-its score inscribed on a thousand hills, its notes the lives and deaths of plants and animals, its rhythms spanning the seconds and the centuries. (Leopold, 1968, p.149)

Like the transcendentalists, Leopold considered the pioneer experience to be an essential ingredient of American culture and argued that wild places need to be preserved so that future generations can develop their ingenuity and self-reliance. In his essay *Chihuahua and Sonora-Song of the Galivan* he wrote,

Someday, perhaps in the very process of our benefactions... the last crane will trumpet his farewell and spiral skyward from the great marsh. High out of the clouds will fall the sound of hunting horns, the baying of the phantom pack, the tinkle of little bells, and then a silence never to be broken, unless perchance in some far pasture of the Milky Way. (Leopold, 1968, p.101)

What is interesting is that it is not just the wilderness that has disappeared, but also a way of life. For Leopold, hunting is a revival of an ancient drama formerly embedded in daily life, and wild places need to be preserved as settings for the re-enactment of these dramas. In his essay, *The Land Ethic*, Leopold wrote, "Conservation is a state of harmony between men and land (Leopold, 1968, p.207)." He called on people to develop an ecological conscience or land ethic to exercise restraint and respect with regard to their use of the land.

Leopold went beyond preservation and began to envision an active role that people can play as stewards by developing a science of land health. In his essay, *Arizona and New Mexico - Thinking Like a Mountain*, Leopold (1968) called on land managers and ecologists to "think like a mountain." Removing apex predators such as wolves from the wilderness can result in overgrazing, damage to plants and severe erosion such as was seen in the dust bowl. Deer may live in fear of wolves, but a wolf-less mountain lives in fear of its deer. Thinking like a mountain means understanding an ecosystem as a web of interdependent relationships. Removing one element such as the wolf upsets the balance. To restore the ecosystem to a more sustainable state might require the restoration of the wolf or might require the land manager to take over the role of the wolf. Rather than approaching the land purely in terms of human desires and needs, this concept of husbandry and stewardship is an obligation to ask, "What role does the ecosystem require me to play?"

The American Indian Movement began to shape the environmental movement during the 1960's by calling the entire concept of the American wilderness into question. Until then, the writings of

conservationists tended to depict wilderness in stark contrast to society. Writing in defense of wilderness preservation, for example, Leopold painted a romantic image of the few remaining remnants:

In Canada and Alaska there are still large expanses of virgin country where nameless men by nameless rivers wander and in strange valleys die strange deaths alone. (Leopold, 1968, p.191)

People in the wilderness are nameless, alone, and disconnected from society. Tony Vaska, an Eskimo from Alaska, pointed out the ethnocentric nature of the term 'wilderness' when applied to the American landscape. He wrote,

White people think there's nothing out there. They're only vaguely aware that our people are already there, using the land for hunting and fishing and trapping, as we have for 15,000 years...They think native people and our lifestyle are part of the nothingness of the frontier (Nash, 2001, p.276).

The Alaska National Interest Lands Conservation Act of 1980 was historic for its inclusion of a clause of the Alaska Native Claims Settlement Act of 1971, securing hunting and gathering rights for Native Alaskans. Native American rights and culture, which had been actively marginalized, suppressed, and romanticized for over 300 years, were now being incorporated into environmental and larger societal debates, and the role that humans have played all along in shaping the landscape began to be taken into account by restoration ecologists.

In his book, *Making Nature Whole*, William R. Jordan III (2011) discussed the valuable role that ecological restoration can play both ecologically and socially in forging new relationships between contemporary people and natural ecosystems that are both active and positive by conserving and restoring the ecological functions of natural systems. The paradox inherent in the human condition in which, as self-conscious creatures, we experience the world both as something we are a part of and separate from provides a foundation for the complex relationship people have with nature. Jordan wrote,

To the extent that people think of themselves as existing within their environment and lack an idea of nature as an other – that is, as everything in the world except people or “us” – it is impossible for them to step out of the current of time and change to observe creation from the outside and to see themselves as agents acting on, shaping, altering, and perhaps damaging an environment. By the same token, it is impossible for them to think about reversing those effects, deliberately acting to compensate for or cancel their own effects on that environment in order to restore it to some condition that existed before their arrival (Jordan, 2011, p. 15).

In some ways the experience of nature as the other can facilitate a callous disregard for it. At the same time the intellectual distance gained by separating from a subject, such as nature, is also the only way to be able to critically examine one's relationship to it, apart from and at some sacrifice of personal self interest. Jordan argued for the importance of developing "ecocentric" thinking, to see nature clearly, unclouded by self-interest, as key to being able to act on its behalf.

The ambiguous role of human self interest with regard to nature is illustrated by the Bloedel Reserve on Bainbridge Island in Washington State. The reserve was created by Prentice Bloedel, the son of a prominent lumber company owner who took over the business from his father in the late 1920's. In 1950 he retired from the company and devoted the balance of his life to creating the reserve. On the one hand, the Bloedel family exploited natural resources for profit and to provide wood products to society. On the other hand, the Bloedel Reserve was created using these profits and designed to manifest a harmonious relationship between people and nature, instill a sense of respectful stewardship, and also likely in part to make personal amends. He wrote,

The Reserve is a place to experience the bond between people and nature. It is a place for people but not in clamorous crowds. It is a place in which to enjoy and learn from the emotional and aesthetic experience of nature the values of harmony, respect for life and tranquility. It is a place to enjoy and learn the values of eclectic design, aesthetics and ecology as the catalysts for the harmonious interaction of people and nature... The Reserve as a whole should be an example of man working harmoniously with nature; where his power to manage is used cautiously and wisely. (Bloedel Reserve, 2013)

Interest in harnessing the restorative qualities of nature within the design of human environments is not new. Restorative or healing gardens have been incorporated into the design of hospitals and asylums in Europe since the middle ages (Gerlach-Spriggs et al. 1998) and many landscape architects, such as Frederick Law Olmsted and others, devoted their careers to creating parks for the explicit purpose of improving the human condition. More recently, empirical research has linked access to nature and gardening to children's health, faster recovery times in hospitals, and reduced recidivism rates among inmates, worker productivity and neighborhood satisfaction (Heerwagen, 2009; Kearney, 2006; Svendsen, 2009; Jiler, 2009). Attention Restoration Theory (Kaplan, Kaplan & Ryan, 1998) asserts that nature can play an important role in alleviating mental fatigue (this theory is discussed in greater detail below). The movement in biophilic design attempts to draw from natural qualities such as heraclitean

motion, change and resilience, variations on a theme, discovered complexity, multi-sensory, and transformability, “to create places imbued with positive emotional experiences – enjoyment, pleasure, interest, fascination, and wonder – that are the precursors of human attachment to and caring for a place” (Heerwagen, 2009, p. 47). This suggests that a purposeful arrangement of various elements of the landscape, both managed and natural, may go a long way toward restorative and visually pleasing environments.

The recognition that people depend on nature – economically, biologically, culturally, and psychologically while at the same time having the ability to transform the environment in radical ways to meet those needs, has led to the current search for a sustainable balance between environmental, economic and cultural needs. In understanding the environment as a coupled human-natural system, the landscape itself becomes a palimpsest shaped by layers of ecological and social processes.

While the American landscape may not be the pristine wilderness that many thought it was, there remains nevertheless something profound in the idea of nature as something wild, beyond human understanding and control. In his book *1491, New Revelations of the Americas Before Columbus*, Charles Mann (2011) described a trip deep into the Amazon to look at landscape scale earthworks which were built by a civilization long ago, a recent “discovery” that large areas of the Amazon had been shaped by people. While his boat was making its way through a system of ancient constructed tunnels in the Amazon, he described feeling, “the presence of something beyond myself...That something seemed to have rules and resistances of its own, ones that did not stem from me (Mann, 2011, p.374).” He went on to say that sometimes the claim that the forest was shaped by people does not leave room for anything else bigger or deeper than society. At the same time, denying the interaction between people and nature risks missing fundamental forces that have shaped both people and the natural environment. Mann wrote,

Understanding that nature is not normative does not mean that anything goes. The fears come from the mistaken identification of wilderness with the forest itself. Instead the landscape is an arena for the interaction of natural and social forces, a kind of display, and one that like all displays is not fully under the control of its authors. (Mann, 2011, p.374)

Ways of Knowing

Beyond the cared-for-garden lies insouciant wilderness; beyond the open field is the dark forest; beyond the flat floor of the desert distant mountains rise shimmering at the horizon; and beyond the halcyon harbor there is the savage sea. Thus we return to the wilderness with which we began. (Casey, 2009, p.185)

In the above passage, Edward Casey (2009) hinted at the ambiguity between the notion of nature as the inassimilable other, lying on the periphery of the cultivated world, and the allure that draws us in. In his book, *Getting Back into Place, Toward a Renewed Understanding of the Place-World*, Casey (2009) described the way in which the experience of the body-in-place undermines the intellectual split between people and nature. Rather than us being here and nature being there, we usually find ourselves in nature, completely enveloped by it. As we move within an environment, our senses mediate between our inner self and the surrounding world as we continually take in the colors, shapes, textures, motion, density and luminosity that give a place its local character. At the same time the sky, the earth and the distant mountains on the horizon serve to draw out depth and hint at open-ended qualities, at something beyond the perceptual field.

Whereas built spaces tend to bring the body to rest, Casey argued, wild places put the body into action calling for alertness and exploration. The action he referred to is not social, industrial, intellectual or domestic activities, but rather the work involved in becoming oriented. Whereas buildings often tend to (but not always) provide a sense of bounded space and orientation, wild places tend to be expansive and unpredictable and can cause feelings of vulnerability, disorientation and “place panic” associated with the fear of being lost. Finding orientation involves getting to know a place. Casey wrote, “To inhabit a wild place is to make it increasingly familiar, so much so that the true wildness of the place (not to be confused with a veneer of violence) can be fully savored (Casey, 2009, p.241).” He argued people are often drawn to interplaces, or places between the extremes of being inside or outside such as gardens or courtyards for their capacity to provide a sense of place and orientation in the outdoors.

A similar assertion was made by Jay Appleton (1975) in his book, *The Experience of Landscape*, where he described landscapes as “strategic theaters for survival” (Appleton, 1975, p.118). He built on John Dewey’s assertion in *Experience and Nature* (1929) and *Art as Experience* (1934) that beauty is not an

intrinsic quality of objects or in the eye of the beholder, but is derived instead from a person's relationship to the environment, in essence their experience of it. In particular, Appleton argued that aesthetic satisfaction is derived from landscapes that provide symbolic and/or real opportunities for prospect and refuge. The need to hide and seek, according to Appleton, is related to basic survival behaviors posited by Habitat Theory: exploration, shelter seeking, eating and drinking, and reproduction.

Not all places provide opportunities for prospect and refuge, orientation, identity and belonging. Casey wrote about the feeling of desolation including non-visibility, unknownness, disorientation, isolation, and non-being that can be associated with barrenness, or inability to sustain life, vastness or unending emptiness, and impenetrability or the denial of a sense of extent. This parallels the work of Kaplan and Kaplan (1982, 1998) who found that people tend to dislike vast as well as impenetrable landscapes and prefer scenes which offer opportunities for exploration and provide a sense of orientation and legibility with scalable elements or interconnected regions layered in depth, similar to Casey's interplaces.

The loneliness accompanied by desolation is not necessarily the same as being alone. For Leopold, Thoreau and Muir, solitude was integral to their being able to develop a relationship with nature. Only by being alone in nature could they open themselves up to a profound sensory experience of natural phenomena. The depth of understanding afforded by a sensory rich environment was beautifully described by Andrea Ponsi (2010) in his book, *Florence, A Map of Perceptions*. He narrated an experience of running his hand along a wall in Florence:

Walking along a street in the center of town, I raise my arm to graze the wall at my side, sensing through my fingertips the warm friction of the porous stone. I reach a copper downspout. My hand bumps over it, resting on the grainy stucco surface. I am interrupted by a cool door frame. Just a brief contact with its grooves, and I hop to the jamb on the other side, lightly brushing the wooden door as I do so. The wall I approach wears an iron hoop like an earring. This ring once held the reins of horses. I give in to the temptation to lift and then drop it, just to hear the metallic sound. I am passing by blocks carved in high relief; the palace is an important one and these cushions of stone deserve a caress. I near another doorway and lift my hand to the brass plaque, with its doorbells, cool to the touch. The portal is open and I leap across it in a two-meter flight. On the other side the stone is warmer, still in the sun. A bit uneven, it is flaking: winter frost and pietra Serena don't coexist well. Only acrylic resins can stop the scaling. I restrain my touch, pressing lightly. There is a brief groove, and once again smooth stucco. I contribute to the patina with the dirt of my fingertip. By the end of the block of houses, the acute angle of the last corner is within sight. Like every good edge it has been treated like an ornament. An engaged column with a diameter of just a few centimeters rises up to the top of the

palace. A final caress, and I lower my arm to join the cadence of my stride. (Ponzi 2010, p.3)

The tremendous variation of distinct and legible textures, materials and shapes along the city block facilitate the development of a detailed sensory narrative with mental associations that become layered into memory as they are articulated.

In ancient Greece, memory was thought to be intimately tied to place. The *method of loci* was an art of remembering employed by students of rhetoric. In order to help them memorize and recall a speech they would develop an imaginary place, or memory palace, with a sequence of rooms with a carefully envisioned hierarchy of elements such as niches with vessels into which they would place different parts of the speech. When they were ready, they would revisit the imaginary palace of their creation and recite each phrase of their speech as they walked from room to room.

However, with the advent of the Cartesian coordinate system during the European Enlightenment, Casey argued, space became something infinite and undifferentiated and the idea of place in memory became supplanted by time. As opposed to a Cartesian *site*, the idea of *place* has a directional orientation, familiarity, variation, expression and can be laden with emotion. Without these qualities, Casey argued, a person would become disoriented and would have nothing which stands out to hang a memory on (Casey, 1987). In his book, *Remembering: a Phenomenological Study*, Casey (1987) made a strong case for the potency of place based memory in endowing a place with meaning. He wrote,

If memory is not simply or exclusively "of the past," what does it involve in addition? The very embodiment of remembering hints at the answer. To be embodied is ipso facto to assume a particular perspective and position; it is to have not just a point of view but a place in which we are situated. It is to occupy a portion of space from out of which we both undergo given experiences and remember them. To be disembodied is not only to be deprived of place, unplaced; it is to be denied the basic stance on which every experience and its memory depend. (Casey 1987, p. 182)

Rather than simply reminiscing or recalling moments in time, Casey described the way personal experience, is both a physical and mental activity, with the body orienting it within a time and a place. Tuan made a similar point, describing the way the human body has a front and a back and a top and a bottom which also influence the way people perceive space (Tuan, 1977).

Being in place implies a certain point of view from which we perceive. At any one time, we can only see a partial perspective, which unfolds as we move around an object. Yet as we perceive the front of a chair, for example, we already have a sense that we know what the back or bottom might look like even before we see it with our own eyes. In his book, *Imagining: a Phenomenological Study*, Casey wrote,

Perceiving inescapably involves the experience of implicit presences; indeed, the felt coherence of perception derives in large measure from the perceiver's ready acceptance of a complex mixture of the implicitly and explicitly present. (Casey, 2000, p.138)

By extending the perspective frame, imagining and remembering serve to create a full-bodied perceptual experience. The world unfolds as one moves through the streets of Florence for example. At the same time Florence can be known abstractly through a map which helps to extend our understanding of the city beyond what we immediately perceive. This dual way of knowing both perceptually and abstractly is beautifully illustrated in Ponzi's sketches of Florence (Fig.5). The map of the city is brought to life by the perspectival experience of walking in the street.

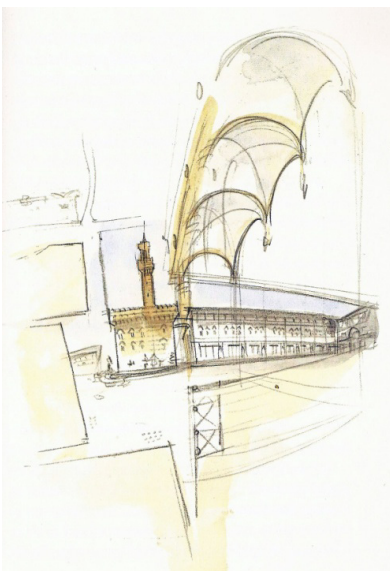


Fig.5. Sketch of Florence by Andrea Ponzi (Ponzi, 2010, p.21)

Whereas perceiving can be subject to verification and judgment for its lack of certainty, possibility of error, and inaccuracies, imagining, whether spontaneous or controlled has a level of indeterminacy that allows it to be insubstantiatable, self-evident and fleeting (Casey 2000). As one walks in the forest, one might see an uprooted tree and imagine elves living in the gnarled roots, but the faces of the elves might be without detail and the forest a surrounding haze. Imagining has a way of extending perceptual experience into the realm of pure possibility and endless variation as one can then imagine the roots of trees extending down into a sky floating high above the earth.

Exploration engages all the faculties - anticipated and realized sensory perceptions as well as their associated memories and imaginings. Casey wrote that "Journeys not only take us to places but embroil us in them (Casey, 2009, p.276)."

Journeys...engage us ineluctably in place – often in many places... but we can say just as well that places engage us in journeys. This is so to the extent that there is nothing like a completely static place, a place involving no movement, no change, no transiency. If places introduce permanency into journeys – since they are where we can remain as we move about – journeys bring out what is impermanent and continuously changing when we are in place itself. To be in a place is to be somewhere in which movement in the local landscape and thus journeying in that landscape becomes possible...Being-in-place beings with its actualities and virtualities of motion that have little if anything to do with speed and everything to do with exploration and inhabitation, with depth instead of distance, horizon rather than border, arc and not perimeter. (Casey, 2009, p.289)

Being in place is also a kind of journey of getting to know a place deeply, and journeying involves multiple places or facets of a place in sequence or layered all at once. In essence, exploration changes us, such that a place will never be experienced the same way twice. This idea was beautifully expressed by T.S. Eliot in “Little Gidding” (Casey, 2009, p.271):

*We shall not cease from exploration
And the end of all our exploring
Will be to arrive where we started
And Know the place for the first time*

The Reasonable Person Model

If as stated above, exploration changes us and our understanding of a place, what sorts of conditions or environments facilitate knowledge seeking behavior, in essence learning? Just because a person has the opportunity to explore, does not mean that they will. Unlike the Rational (or Economic) Man model which posits that people learn information that is presented to them, the Reasonable Person Model (RPM) as developed by Rachel and Stephen Kaplan (1982, 1998, 2009) considers the role of context and motivation in learning. The RPM identifies three information needs that if met can help “bring out the best in people”: model building, being effective and making a difference.

Model building is the process of building cognitive maps or networks of associated internal representations of the external world. Mental models are highly biased toward the familiar as “the stored information a person has about an environment necessarily influences how the environment “feels” to that person, what is noticed, what is ignored (Kaplan & Kaplan, 1982, p.6).” This has implications for communication. Kearney and Kaplan (1997) argued that a person’s current assumptions and beliefs shape a framework for interpreting new information and that people will often ignore or misinterpret/

reinterpret information that contradicts their current mental framework or cognitive map. Therefore, rather than simply providing information and assuming that a person will receive it and integrate it, they argued that it is important to “understand where someone is coming from” if one wishes to communicate effectively with them.

The challenge of developing a common vocabulary is supported by a study that compares the concept of ecosystem services as outlined by the Millennium Ecosystem Assessment (MA) to the way that community members and forest staff in Oregon perceive the benefits of a forest (Asah et al. 2012). The study concluded that while many of the themes identified by participants fall within the categories of the MA, including provisioning, regulating, cultural and to a small extent supporting functions, they are conceptualized more as values than as services, and many of the categories become merged and expanded. For example Christmas tree harvesting, a provisioning service, also becomes an opportunity for a family to interact. Sense of place was associated with place attraction, attachment and reward. Well-being was discussed in terms of direct physical, psychological and healing benefits of the forest. Recreation also included discussions of self-identity, self-expression and empowerment. Stewardship and volunteering emerged as entirely new categories that were not included in the MA.

Bias toward the familiar, or using one’s existing mental maps, also serves an important function, namely rapid and efficient navigation of an environment without having to pay attention to and process every detail (Kaplan & Kaplan, 1982). Discrete and incomplete perceptions become continuous through association with other representations, similar to Casey’s assertion that memory and the imagination serve to extend the limits of direct perception. At the same time that people find comfort in the familiar, people often seek opportunities to explore and extend their mental maps. Exploring new environments involves discovery and figuring things out.

Through their work on visual preference, Kaplan, Kaplan and Ryan (1998) found that people prefer environments that offer the simultaneous promise of being involving by being complex and mysterious and of making sense by being coherent and legible. In his book, *The Image of the City*, Kevin Lynch (1960) found that people use nodes and landmarks, edges and regions and travel along paths to navigate

a city. In some ways the ability of an environment to be made legible is what encourages its exploration in a continual cycle between exploring new territory and developing an understanding.

Kaplan and Kaplan (1982) discussed the way involvement in a place can be sustained despite growing familiarity. They wrote:

While familiarity may lower preference and lead to a yearning for new pastures, it might also lead to a shift of level within the same situation. Since familiarity simplifies, it becomes possible to take in more at once, to treat what once filled the mind as a part of something else. In this way the focus of exploration shifts, leading to an ever-deepening knowledge. Thus there can be highly familiar situations in which one feels one is constantly seeing new things. (Kaplan & Kaplan, 1982, p.93)

This parallels Casey's description of the way journeys embroil us in places and in orienting us enable us to embark on new journeys both between places and within a place. One way in which involvement is sustained is through a shift from exploration to play. In play the focus is less on "what is this?" and more on "what can I do with this?" Through increasing familiarity, mental and environmental elements become more discrete and compact, more object like, and therefore more able to be playfully and creatively manipulated and recombined. (Kaplan & Kaplan, 1982)

Being effective, the second domain of the Reasonable Person Model, considers the way that mental fatigue can serve as a barrier to learning and addresses the importance of restorative experiences for improving one's ability to learn. Attention Restoration Theory, developed by Rachel and Stephen Kaplan (1998) posits that people's capacity to maintain directed attention is limited, resulting in mental fatigue and the inability to retain focus, and that natural settings can be restorative by providing avenues for spontaneous interest and effortless attention. Their research found that people tend to be spontaneously fascinated by natural elements such as moving water, campfires, or dappled light under trees, for example. As well, environments which provide a separation from daily stress and allow the eye to wander into another world through a sense of depth or extent were found to be particularly restorative. Compatibility, or the degree to which the environment fits one's inclinations, also factored strongly into whether a person experienced an environment as restorative (Kaplan et al. 1998).

While environments with restorative qualities can facilitate recovery, Jason Duvall (2011, 2012) explored

how a person's active engagement with a setting can enhance a feeling of well-being, even in environments that few would characterize as restorative. His study compared extrinsic and intrinsic motivational techniques for increasing outdoor walking behavior in adults. Extrinsic techniques included setting a schedule and commitments. Intrinsic techniques involved the development of an "awareness plan" to engage people in their surroundings. As they walked, subjects were asked to focus on their senses to see what they perceived or think about how they might alter the environment. The study found that while extrinsic techniques were just as effective as engagement strategies in motivating people to increase their walking behavior over the course of a two week period, subjects who had used engagement plans reported significant improvements in multiple dimensions of psychological well-being, including increased attentional functioning and lowered levels of frustration.

The techniques used in the engagement study relied on cognitive processes that people find highly rewarding such as recognizing objects, inferring what has happened in the past, predicting what could happen in the future, and evaluating different aspects of the world around them (Kaplan & Kaplan, 1982). The engagement strategies also correspond to the way Leopold and Thoreau developed a heightened perception of natural processes in their desire to better understand and bond with their surroundings.

Meaningful Action, the third domain of the Reasonable Person Model, considers that knowledge seeking often has a purpose. Exploration and discovery can serve to increase one's ability to navigate an environment and predict uncertain outcomes. Wanting to make a difference, gaining the respect of one's peers and being heard are also important components of meaningful action. For example, providing avenues for public participation such as public meetings, focus groups, tours, and design workshops can make the difference between a successful and an unsuccessful public planning effort (Phalen, 2009). In the case of small forest landowners, the inclination to shape land for individual needs can serve as the motivation for undertaking a landscaping project.

Methods

I began this project intending to address a mismatch between the range of cultural, environmental and economic reasons family forest owners cite for owning forestland and the more narrow focus of materials and programs designed to engage them, primarily through timber management. This suggested that there may be an underutilized opportunity to engage family forest owners in a more holistic way by speaking to their range of interests in aesthetics, recreation, lifestyle, personal well being, wildlife, and forest health.

Existing literature provided many insights into the historical relationship between people and nature and into the way that a place can become known through exploration, perception, memory and the imagination. However the literature does not offer specific knowledge about how family forest owners build a relationship with their land. In this project I seek to explore the process of mental model building, or how meaning is formed, by talking with forest owners directly about how they have come to know their land, their visions and struggles, and how they have made their land their own in order to gain new insights into ways through which to engage them in the development of environmentally sustainable, amenity rich and restorative environments.

Focus Groups

Together with Professor Gordon Bradley and a number of undergraduate students at the University of Washington, I conducted two focus groups early on to gauge family forest owners' interest in materials that would address cultural amenities. A contact at Washington State University Extension and King County Department of Natural Resources and Parks recommended fifteen forest owners who had recently participated in forest stewardship classes and who had expressed an interest in managing their forest for multiple objectives. These landowners were targeted in order to help answer a number of questions: whether material about managing forest landscapes for cultural amenities would be new or different from what they have learned in the stewardship classes or seen in the literature, whether it would interest them, and how it could best engage them. Seven of the fifteen forest owners who were contacted

participated in the focus groups. The focus groups were held in early March of 2012 and consisted of a 40-minute PowerPoint presentation followed by an hour long discussion. We presented a number of approaches to enhancing the aesthetic and restorative qualities of landscapes, utilizing hand drawings and photographs to illustrate design and planning concepts, which were drawn from the literature. Participants confirmed that while stewardship classes covered a range of forest management topics, they did not provide much guidance about ways to enhance the recreational and aesthetic amenities of their forests. The forest owners also commented that while they found our presentation intriguing, they would be more interested in examples drawn from local forests than the images of formal gardens used in the PowerPoint.

The issue of relevance, which surfaced during the focus groups, highlights the importance of grounding educational material in local knowledge, a point that is also made by proponents of the Reasonable Person Model (Kearney & Kaplan, 1997). It became clear that I needed to conduct further research in order to better understand how forest owners see their land, what excites them about it and how they interact with it.

Interviews

Both survey and qualitative methods can make contributions to our knowledge of the NIPF [Non-Industrial Private Forest] sector, each method addressing the types of questions to which it is best suited. Surveys efficiently quantify population parameters, while qualitative methods are more effective for discovering the relationships between beliefs, attitudes, and behavior and for identifying parameters of importance. The methods complement, rather than conflict with each other. (Bliss & Martin, 1998)

In their article, *Identifying NIPF Management Motivations with Qualitative Methods*, Bliss and Martin (1989) discuss how the research method must be chosen to fit the question. Random sampling and surveys are used by researchers to discover and describe trends that can be generalized to the larger population using statistical analysis, such as what percentage of forest owners have cited which categorical reasons for owning land, and with what degree of certainty can we assume that this is representative of family forest owners in general. Because the unit of analysis is the trait, not the individual, and because most researchers rely on fixed questions and standardized protocols to ensure

that results are replicable and comparable, surveys are not well suited for exploring the nuanced meanings that these choices might have for people. It is by taking the time to listen to people in depth by asking them to describe what is important to them in their own words, that researchers are able to gain further insights into people's values, motivations and behaviors. (Bliss & Martin, 1989)

Several studies have shown that qualitative research methods including open ended questions (Bengston et al. 2011), focus groups (Kingsley et al. 1988), cognitive mapping exercises (Tikkanen et al. 2006) and interviews (Bliss & Martin, 1989) are able to reveal a far richer understanding of small forest landowner's reasons for owning land than traditional survey methods alone because they allow participants to describe their motivations in their own words without being constrained by pre-assigned categories. Using cognitive mapping exercises with Finish forest owners for example, Tikkanen et al. (2006) found a number of more emotional reasons for owning land such as 'Seeing the outcome of one's own work', 'Link to one's place of birth', or 'Monitoring forest development'. Bliss and Martin's (1989) interviews with timber-producing non-industrial private forest (NIPF) owners dispelled the view of them as one-dimensional profit maximizers. Instead timber management was found to be multi-dimensional, serving as a form of recreation, an opportunity to problem solve and tied to personal, family and ethnic identity.

Because my interest is as much in the process of meaning making as in the content, I consider the semi-structured interview to be the most suitable method for obtaining detailed descriptions of personal experiences, motivations and decisions. My intention was to provide a framework to draw out the forest owners, asking them to elaborate on the central themes of their experience by describing as precisely as possible what they experience and feel and how they act. The narrative structure enabled me to probe beyond general opinions and ask for further details about specific situations and action sequences as told from the forest owners' own point of view. In his book, *InterViews, an Introduction to Qualitative Research Interviewing*, Steinar Kvale (1996) wrote that the semi-structured and client-centered research interview, "seeks through questioning to obtain knowledge of the subject's world (Kvale, 1996, p.21)." He went on to explain that semi-structured interviews are meant to be dynamic and interpersonal in that new understandings may evolve through the process itself such that interviewer and subject may influence

each other. This is not necessarily a source of error, but is recognized as being part of the dynamic that generated the knowledge. In large studies with multiple interviewers, interviews may be more structured to regularize the results.

The Reasonable Person Model (RPM) (Kaplan et al, 1998 and 2009) provided a useful framework for exploring the relationship between understanding, meaning and action and how these are influenced by the environment in which people find themselves. Interview topics were organized around the domains of the RPM to include model building, being effective and meaningful action:

Model Building: Development of cognitive maps or internal representations of the external world.

- **Understanding:** How does a person understand their land, how have they gotten to know it?
- **Meaning & Values:** What sorts of meanings and values do they attach to their land?
- **Imagination & Memory:** What sorts of associations do people have with their land?

Effectiveness:

- **Efficacy:** What sorts of things contribute to their sense of being able to develop a vision and accomplish their goals? What sorts of things cause them to become frustrated, overwhelmed, and ineffective?
- **Compatibility:** How they expected their forestland to be verses how they find it to be
- **Restoration:** What kinds of things help to relieve stress and mental fatigue and contribute to a feeling of well-being?

Meaningful action: the need to make a difference.

- **Vision:** What sorts of things do they envision for their place? How has this evolved? What possibilities do they see? What are the things they consider NOT to be possible?
- **Stewardship:** How do they envision their role with regard to the land?
- **Attachment:** What sorts of things cause them to become engaged and provide an emotional bond with their land? What sorts of things cause them to become disengaged or indifferent?

Note: See Appendix A for a copy of the interview script which was used during the interviews.

In order to better understand how family forest owners develop a relationship with their land, I considered it to be essential to conduct the interviews on site and in two distinct parts, a sitting down part and a walking around part. In the first part of the interview, I asked forest owners if we could sit down together and talk for a while. The landowners usually invited me to sit around their kitchen or dining room table or in the living room. My intention was to set aside a time and a place in which to have a focused conversation during which I could address my questions and the landowners could tell me stories and explore their thoughts and reflections without interruptions or distractions. When the conversation came to a close, usually within an hour, I asked the landowners if they would show me around their property, showing me their projects and the places they enjoy. My intention was to provide an opportunity for me to talk to them about their property in the presence of nature so that I could not just hear about their relationship to their land, but observe how they relate to it. By walking with them, I could see what they saw, how they move through their property and interact with it. The informality and full-sensory environment allowed the conversation to become more spontaneous and open to distractions so that I could observe what caught their attention and the ways in which personal narratives, thoughts and feelings were directly inspired by the environment through which we were walking.

The interviews took an average of three hours each. The interview questions remained open-ended and non-directive to allow landowners to respond without boundaries, talking about the subjects that were important to them. Follow-up questions were used to illicit further details, asking them to elaborate on their experiences. A quick analysis of emergent themes was conducted after the first five interviews revealing the richness of narratives concerning not just what forest owners have come to know but how they have come to know it. I then refined the interview questions to draw out more information about the process of forming a relationship to the land. With permission of the landowners, interviews were documented with audio recordings and photographs.

Sampling

In this project, I focused on a small subset of family forest owners in and around the South Puget Sound region, a region with which I am personally familiar, having lived in the Seattle area for approximately eight years. Because my research intention was to qualitatively explore in-depth how forest owners come to understand their land, it was not necessary to obtain a large random sample. This research is not intended to be statistically generalizable to a larger population, but in conducting long in-depth interviews with a small number of family forest owners in a particular region, I hope to gain insight into the nuances of forest ownership and the relationship formed to a particular landscape.

My sampling technique was purposeful, focusing on forest owners who are interested in managing their land for multiple uses. The 15 forest owners who had originally been asked to participate in the focus groups were contacted again by e-mail, whether they had attended or not. Nine agreed to be interviewed (five who had attended the focus groups and four who had not been able to attend). Five additional forest owners were recruited from among people who had attended a lecture given by Dr. Bradley at the Bloedel Reserve. I used snowballing to increase the sample, asking people who have been interviewed to recommend other family forest owners who might also be interested in participating. Because it is often difficult to gain access to communities one is not a part of, recruitment of family forest owners relied entirely on personal connections through the contact at King County, the lecture, and snowballing. New subjects were recruited until reaching what is called saturation, when further interviews do not reveal significantly newer knowledge.

Twenty three people participated, as individuals or couples, in sixteen interviews conducted during the spring, summer and fall of 2012. This sample size roughly corresponds to several cognitive mapping studies which interviewed a total of 23-24 subjects consisting of three groups of eight, the minimum recommended size per distinguishable group (Lewis & Sheppard, 2006; Kearney et al, 1999). Among those interviewed in this study, eleven were men and twelve were women, ranging in age from mid to late thirties to well past retirement age. All those interviewed were Caucasian and did not rely on their land as their main source of income. Most lived on their property full time while some used it as a weekend place.

Properties ranged in size from approximately one to eighty acres. With most being either five or twenty acres due to zoning. Twelve properties were located in King County, three were located in Kitsap County, and one was located east of the Cascades in Kittitas County.

The sample of forest owners who participated in this research project is reflective of national demographic trends reported by the NWOS (Butler, 2008). Ninety-five percent of family forest owners surveyed by the NWOS are white and as a group they tend to be older, more educated and higher earning than the general public. Washington State is quite geographically varied with large cultural and ecological differences between regions. The sample of forest owners in this study is heavily biased toward the South Puget Sound region with only one property located east of the Cascades.

Analysis

The interviews were transcribed and analyzed to highlight core motivations and values and to explore how these are manifested in the way small-forest landowners interact with and manage their land. I used both deductive and inductive methods to analyze the data. Deduction begins with general philosophical principles and then deduces details from the data. Induction begins with the data and develops generalizations from it (Gauch, 2003). First, I used the Reasonable Person Model (RPM) deductively to organize the textual data by RPM's three domains: Model Building, Being Effective and Meaningful Action (See Appendix B). In conjunction with this first cycle of coding, subcategories were developed to capture different aspects of the larger three domains. I singled out 'Attachment' as a separate thematic category to better capture the many strong feelings of attachment that were expressed by the participants. Whereas the three domains of the RPM seemed to describe parts of an ever evolving cyclical cognitive process, feelings of attachment stood out more as evaluative statements which often related to all three domains of RPM. Sentences and phrases that related to multiple themes were coded multiple times to ensure that the nuances were fully captured.

Finally, I used an inductive approach to uncover themes within these categories. The inductive coding of themes was based on the grounded theory approach to coding and analysis, as developed by Glaser and Strauss (Hutchinson & Wilson, 2011). This method attempts to draw out the symbolic content from both

verbal and non-verbal communication in order to accurately perceive and present another's world. Through a number of phases of coding, smaller themes become organized into larger themes that become interrelated in a kind of molecular structure. In purely inductive research, the codes and categories should fit the data, not be forced by the researcher, and the theory should grow out of these codes and be relevant because it is able to encompass variation and explain ongoing social processes. The researcher is encouraged to ask questions of the data such as: What are these data a study of? What is the basic social psychological problem with which these people must deal? What basic social psychological process helps them cope with the problem and how does it work? (Hutchinson & Wilson, 2011)

I chose the Reasonable Person Model as a framework for analyzing the data because of its relevance to understanding cognition within the environment and the relationship between meaning and action. RPM was a useful tool for organizing the data around thematic questions and mechanisms, while inductive coding allowed my analysis to become less rigid and more open to the nuances of emergent themes. The RPM essentially provided a framework for me to ask the following questions of the data:

- **Model Building:** What do forest owners understand and value and how do they come to understand it.
- **Being Effective:** How do forest owners cope with difficulties and solve problems? What helps them to stay engaged?
- **Meaningful Action:** What sorts of projects do forest owners undertake and what meaning do they have?
- **Attachment:** How do forest owners make their land their own?

The themes that resulted provide rich insights into the experience of owning forest land as described by a small group of family forest owners. While some of the themes can be clearly categorized by the domains of the RPM, others embody several at once. The themes discussed in the results section include:

| | |
|----------------------------------|--|
| Introduction | Forming a vision |
| Exploration and Discovery | Exploring their property Gaining perspective Responding to the land |
| Relationship to Nature | Witnessing the dynamics of nature Nature as something wild Being a steward Feeling restored |
| Relationship to Place | Struggles for compatibility Building community Embedded memories Forming an attachment |

Responses

The forested properties I visited varied widely depending on the logging history, the location, and management practices of past and current owners. All of the properties had been logged at least once. Many forests had mature deciduous trees including big leaf maples and alders as well as a number of tall conifers. One property had been in the family for over eighty years with large trees and a lush understory. Another property had been selectively logged, with the goal of preserving large second growth cedars so that it had a diverse structure with some areas exhibiting old growth characteristics and others a dense thicket of more recent regeneration. Several forest owners had acquired land that had been recently harvested. These tended to be densely populated with young trees and brush, with almost no large trees remaining. One of the properties was located on the east side of the Cascade Mountains and was markedly hotter and drier and had a scent of sap and needles in the air.

The forest owners I spoke with were clearly excited to tell me about their land, but I sensed, even more enthusiastic about showing it to me. Starting with a focused conversation and following up with a walk around the property provided an opportunity to not only gain insight into the way forest owners conceive of their property but also to observe how they experience it. While the focused conversations tended to be very thoughtful and reflective, the conversation during the walk often became chaotic with forest owners interrupting their own stories to point out the plants that they knew the names of and little things they found interesting, such as a stick that had gotten lodged into a trunk almost like an arrow, most likely from a windstorm.

Most importantly, they were able to share with me how their forests looked to them. This was invaluable, as they were able to communicate the details of what they saw. In what might just look like a bunch of trees to me, they saw all sorts of plants with names, trees they had planted themselves that were doing well or were not doing well, areas where they had cleared invasive plants, areas that would become wet in the rainy season, a tree that had been damaged in a windstorm that they were caring for, a flowering bush

they had planted that had gotten eaten by deer, or an area they just considered magical. With the landowners' permission, I recorded the conversation and took pictures of the things they showed me.

While the experiences of landowners varied widely, the interviews showed numerous similarities in terms of the meaning the land held for the owners, their fears and pleasures, and their ways of interacting with their property. The results focus only on a subset of the many findings, organized around themes that recurred across many interviews.

Forming a vision

Model building seemed to happen at multiple scales, consisting of both general concepts and more situational narratives that revealed the way small forest landowners struggled to make sense of everyday experiences and form an emotionally and intellectually complex relationship with their land. The following sections describe this process of relationship building, in essence examining how family forest owners make their land their own. From first encounters with their property, to exploring it, to undertaking projects, to coping with difficulties and forming an attachment, this process seemed to be a struggle to find compatibility through meaningful action.

When asked what they value about their land and what they would miss about their land, forest owners discussed general themes, similar to the types of categories identified in surveys. Themes that emerged included privacy, community, scenery, connection to nature, country or rural life, tax benefits, recreation, freedom and ability to personalize, legacy, restorative or healthy place, sacred place, association to childhood, and always having something to do. In talking about what they envision for their land or how they got to know their property, landowners became much more specific and relayed their experiences through personal stories. A couple who owns a five acre lot of forestland described their vision for their land as follows:

Husband: *[my vision] was more park-like, and that got rejected quickly and so I had to accept that I wasn't going to have a park because [my wife] liked the woods - liked to have all the trees and bushes and everything. And I was thinking of grass... a park. It seemed like a pretty thing to do. And she said she preferred the wild basically. And so, I've been finding the rhododendrons in the wild and adding to the wild.*

Wife: *It might have been not so much about wanting to live in the woods as not wanting to maintain five groomed acres. You know if you'd start having little flower beds everywhere, not wild flower beds but flower beds that you've purchased things for, and delicate plants that the critters just eat anyway. It's too much work, for one thing. Just to get right down to the basic. It's too much work... But, we're trying to evolve it to lower maintenance but still attractive gardens. And less grass and more ferns and bigger bushes that are more native. We're not strictly "it must be native" but closer to the house the less native it has to be. Further out in the woods it must be native. Well, except for the Rhodies that have grandfathered into our woods.*

This short excerpt highlights how in many ways the general value of scenic beauty that one might check on a survey remains constant, but the specifics of the vision changed from a park with lawns to a vision involving native plants. This exchange also describes what seems to be a successful process of coming to terms with the incompatibilities between what they thought they would have and what they actually found, adapting to a new understanding and recasting it into a revised vision of "rhododendrons in the wild."

EXPLORATION AND DISCOVERY

Exploring their property

The excitement of exploration and discovery in getting to know their property was a common theme. One landowner described the first months on his property:

I couldn't stop going out there. The sense for me was a sense of discovery. I was obsessed with it. I wanted to explore every place and look at everything. And it was, again, I can't think of any other way to explain it, being a kid and just having that sense of wonder. I mean it was really that sense of wonder going out and exploring new things. And you know finding buried treasure. And, it was very, very much kind of that, I don't even know if I want to say fantasy—yeah maybe at one level—but it was real.

Many of the forest owners had taken forest stewardship classes, and said these classes were the main vehicle through which they had gotten to know their property. One forest owner who had lived on his property for approximately 18 years before taking a stewardship workshop said, "As I recall I never walked very much of the property until I went to the forestry class." He and his wife went on to describe being surprised to learn how many different plants and animals live on their property:

And one of the things that we did in the forestry classes was try to get a list of all the different animals that you see and all the different plants that you see. And the list was long. And I had "walk your property and identify everything that you can." And so we came up with a long, long list. I was amazed at how much flora and fauna there are.

Once you start knowing what you're looking at. When they started talking about diversity I said, my, our property is incredibly diverse, just the four and a half acres.

In many cases the experience of getting to know their forest translated into designing trails through their property.

I think initially it was sort of a ground we didn't know what was here. We started exploring, seeing what it was. And then we did that forest stewardship class and then... it's really fun. So then you've got activities where you're looking for certain things. That was really interesting because we didn't know any of the stuff. So that was pretty cool... so while we are doing that, trails are becoming more interesting... you need them to access it, but at the same time you want it to be fun...and the way we started enjoying the forest was wandering around and discovering these really cool fun things.

Often these trails were intended not only for their own enjoyment, but also for recreating an experience of discovery for their guests. One couple, for example, staged a "trail party" hiding little treats and creating little forest nooks with food and drinks for kids and adults. Another couple described how they went about designing a trail system:

... It's like how many curves should be in the trail and what sorts of things are interesting... We love the idea of little niches hidden in the forest that people don't necessarily know about... When our friends come over they always go for a little wander. And we want them to go for a wander and come across a martini deck...and we like the idea of not making it too obvious where these things are and people just wander around and discover things by themselves which I think is kind of fun.

The degree to which exploration and discovery was a defining aspect of owning forestland became especially evident during the tour. While walking around the property, the conversation usually became very energetic and more chaotic with forest owners showing me all the discoveries they had made including rocks, old bottles, animal tracks, scat, stumps, and seasonal streams and wetlands. One forest owner showed me a flowering plum tree he and his wife had recently discovered on their property and how he had just completed a trail over to it:

I just wanted to show you, we discovered this plum tree in here. We didn't even know it was here. Isn't that cool? It's a native plum. And then in spring it's going to be covered with white. You used to be able to look in this area and go, "god there's a tree that's blossoming" and we found this whole stand of them. Very cool...I'm so excited to see it in spring. We'll be able to stand right under it.... So that's the discovery of kind of looking from far and going, "is that on our property or not?" so now we can walk right up to it.

Gaining perspective

While exploration can be fun, getting lost and disoriented can also be unnerving. On the way to visiting one of the forest owners, King County Search and Rescue was combing the nearby countryside for signs of a neighbor who had gone out for a walk in the morning and was now missing. When I arrived at the interview we spoke about the event, and the forest owner explained how disorienting Pacific North West forests are, that once you lose the trail, you can't find it again due to the lush understory, a quality she also relishes in her trail design, employing lots of curves to disorient people and creating the illusion of being deep within the forest, even on her 5 acre lot. Several forest owners talked about getting lost on their property. One landowner described his first day:

[On] my first day here as I went out... it was dusk and I went out and I started walking on our property...And we didn't know the area at all. And then as I started to walk back it was getting really dark. And there were trees, I don't how to explain, but depth of light, you know logs had fallen, trees that had big holes, you almost had to crawl. I couldn't see a thing, so I kept walking and walking where I felt it was the safest, 'cause I wasn't sure. I actually got lost, I didn't know where I was...And so I finally came up to someone's house and knocked on their door and said, "I just moved here, I have no idea where I am? Where's my house? They said, "It's right there."...And I'm sure they still talk about the idiot that got lost in his own backyard.

In the above examples, the lack of visual access and the inability to see the ground make it very difficult to form a clear mental image of where one is in relation to where one came from or where one is going. This lack of understanding is not just disorienting but can also interfere with a person's ability to develop a vision for their property. One forest owner had a very dense forest that was difficult to see through, much less walk through. When asked about whether there were any places on his property that he considered to be special, at first he couldn't think of any, but then he showed me a small boulder he found on higher ground in an area that had bigger trees and less brush, from the top of which he was able to catch a tiny glimpse of a lake in the valley below, the one place that provided him with a larger perspective. He described a particularly bad day of trying to walk around his property and talked about wanting to build some trails to provide access:

Yesterday I was just in the woods trippin' and gettin' sliced up and it wasn't fun. I mean if you could have heard me.... and so that's partly why I'd like to have some trails in here. Where...somebody could just walk through and it wouldn't be a battle to, you know, blood.

The connection between gaining access and gaining new perspectives was expressed by another landowner who undertook a multi-year project to remove ivy from his property:

One of the things is that literally when we got here, there was one path and you could walk down the path up to the end of the property out that way and you'd come back. And you'd look and you see all these trees and everything and you knew you had acres, but you couldn't get in there because [of] the ivy. [In pulling ivy] there was a real sense, not just of freeing the forest, but freeing ourselves to walk and enjoy it in there.

He described how opening up the site provided him with new perspectives:

[You] just couldn't even see the trees. You walked by them and suddenly when the ivy's gone you can see this magnificent tree and that would be the discovery...That you saw it for the first time. It wasn't like the tree was completely hidden, but your eye kind of just went to the ivy. And you just couldn't see anything beyond it...But when you open these spaces you go, "Oh, there it is." Somehow you could see it now. And also you didn't have any angles where you could see things. So when I had the free space to walk here, if you have a huge tree, if you walk on one side of it, it looks very different [than] if you walk on another side. If you peer up [at] it this way or this way [it] totally changes...all of a sudden you can stop, then you look up and you go, "Oh my God, it's a whole different perspective."

This desire for new perspectives was shared by a number of the forest owners, a few of whom dream of installing a zip line or building a tower or a tree house or a "bridge to nowhere" that would extend out over a drop-off with a little sitting area in the sun. When one forest owner showed me two straight and tall conifers standing side by side where he wanted to build a tree house, he and his wife were delighted to find that the neighborhood kids had also been attracted to these same trees as they had constructed a little fort at the base out of downed wood. One landowner shared why he thinks people like tree houses:

I think that's why a lot of people get into building tree houses, which is something I'd love to do. It's 'cause you see things. It doesn't take a lot. You know, you can build a tree house ten feet up and it gives you a whole different perspective on that world.

The delight in unique views and changing perspectives was a common theme. While walking through a particularly dense part of one property, a landowner called my attention to the view through a tiny gap in the leaves saying, "You can see Mount Rainier right through that little hole." One of the participants who owned forestland on top of a plateau talked about how much she enjoyed the way the mountains looked bigger when she viewed them from the top of a hill on her property:

so the view of the mountain from up here is better, somehow when you're higher up it seems bigger... or I think part of it is that you see more of the base of the mountain cause you're up a little bit higher.

Responding to the land

Throughout the interviews I encouraged participants to describe how they made planning and design decisions for the trails and areas they had developed. Often their first response was some variation on, “I don’t plan, I just do.” While walking around the property however, they became much more descriptive of how they were responding to what they saw in the land, often following animal trails or spaces in the forest. As one participant said, “So most of the trails are naturally dictated and I just followed the natural flow.” Another forest owner showed me a little rock lying by the side of the driveway that caused her to start the trail where she did. She went on to describe one stretch of trail we were walking on:

You can see here for this area right here I just had it follow along this down tree here... and by doing so it comes around the larger cedar and it has... I like the way this curves around here so you have that little picture on the way on the right... and so we are sort of aiming towards the house, but you don't really see it, its mostly screened here because there's a lot of trees here and we have more screening here towards the neighbors and so I was able to zigzag the path along here.

Often the trail was made along the path of least resistance. One forest owner said,

I can't tell you why I made the path through here. There was actually no path and I just, I have an electric hedger, and I decided for whatever reason, I kind of saw where maybe the least stuff was and just kind of... I can't explain it. It was maybe a little less thick here.... It just seemed a little clearer over here.

Often it was through removing invasive plants or clearing thick brush that new opportunities presented themselves. One landowner described how she had managed to pull all the creeping Charlie from her property. Often it pulled out easily and left bare ground that she turned into a trail. Another was clearing an area that was thick with salmonberries when he uncovered a little animal trail that led him to discover a unique ridge that goes all the way from the top of the plateau down to the valley floor below. He and his wife named it the “camel back”:

So this was all impassible. I mean it was all like that [pointing to impenetrable brush]. So I created this. For many years I made this trail just go that way and then I don't know what was...two years ago I guess... I decided to mow this area and when I started mowing it I saw this critter trail coming out of there and before that time I didn't even know it existed. I mean literally, I had never been here before... and this is... I think the most unique piece of our dirt.... This trail goes all the way to the river on that [ridge]... So you see... It's so cool.... You can keep going and we have. We haven't gone all the way down ... it gets steeper and steeper as you go down but it goes all the way.... But I just think it's such a unique piece of land. I mean in all of our time, hiking all over Washington. I never been on a place like this... this we call the camel back

RELATIONSHIP TO NATURE

Witnessing the dynamics of nature

Being surprised by nature and experiencing its changeability gave many forest owners a sense of wonder in having born witness to something special and mysterious, outside of their control. Sometimes these encounters were dramatic and out of the ordinary. At other times they noticed the subtle changes, delighting in their heightened sense of perception and familiarity. The descriptions of these events were always very lucid and easy to picture as they were talking, conveying a growing awareness and understanding of the rhythms of nature.

One couple described walking out after a frightening windstorm to survey the damage and coming across an upturned cottonwood glowing with bioluminescence. Another talked of coming across a deer head that had been severed from the body and left by a hunter just ten feet from their house. "It was spooky," they said. Another described encountering an owl when she comes home at night:

One of my favorite things is when I come home at night I'll drive down the driveway and I'll turn around the corner and it illuminates the kind of cleared driveway area down below. And so the owl, who perches right there in that wetland, watches as the light illuminates everything. And then will just swoop down right in front of the car and give you a heart attack. But it's just a ginormous owl. It's shocking every time it happens. And [it's] just electrifying. He's hunting. Cause all the little critters have scampered away from the vibration of the car and the lights and everything. And he just swoops in.

The expectation of dramatic encounters with wildlife was not always fulfilled. One forest owner felt frustrated that she was the only one who hadn't seen a bear. She said, "I personally have never seen a bear ever. I'm desperate to see a bear. The neighbors have seen a bear. [My husband's] colleagues have seen a bear. [My husband] has seen a bear. I have still not ever seen a bear, so I want to see the bear." Those who had encountered bears told these stories with a sense of suspense and heightened vulnerability that made them feel closer to nature. One owner has a bear den on her property. She used to be frightened but has since grown attached to it over time.

There's a giant old growth cedar stump out there that the bears have taken over. It's kind of [a] little bear haven out there and there's almost always every year a bear that lives there. And since I don't go through the trail anymore I don't upset the bear. He never, or she never comes around. And this year there's a sow and two cubs that are coming and going... They don't come here, they don't come to this side, and so I feel very honored that they choose to share the property like that.

While some described encounters with large animals, another talked about how the little things gave her a feeling of “specialness” about her forest. She described how her mother takes the compost out every day and how on one day,

She [her mother] reports back to me... the bee that [was all] territorial next to the compost pile all last week seems to have come down by the back door.

Delighting in nature’s changeability was a common theme. One spoke about enjoying “the liveliness and the dynamic nature of the property and the land and how it’s possible even in a very short amount of time to see how the natural world is continually changing.” A number of forest owners described walking around their property and taking great joy in noticing the changing light and textures. One described her enjoyment of the way certain greens in the understory pop out as she walks:

It’s constantly changing... when I think about the forest I can never believe how much like the understory seems lit up even when there’s no real light in there. Like when we see just various deciduous shrubs in there. They kind of get this neon green thing going.

Nature as something wild

The dynamics of nature could also be very frustrating. Often participants would express exasperation about how quickly things became overgrown. One forest owner pointed to a side path we were passing, “this path that goes through here is overgrown in like a few months.” One participant felt particularly overwhelmed by the work involved. She described how she had been very excited to create a little “secret garden” for herself when she first moved onto her property and how it was now completely overgrown:

Before I put any of this in [a horse ring and stalls], I made a trail out there ‘cause I had fantasies of having that be this beautiful landscaped kind of secret garden area. And I got...those kind of cool things that you stick in the ground and they’re beautiful painted plates or this weird kind of yard artsy fartsy stuff. And I planted some blueberry bushes and put in all of these beautiful flowers and these hostas and I felt really gardeny. It was so exciting. .. Well then, you know, growth happened, spring and summer came, winter came and oh my God, I haven’t even been back there in three and a half years. And the other day...I was looking... could I see the plate? And it had this beautiful chicken on it...and all the paint had kind of just run down... And I don’t know the stick is so rusted...And I was just like, “Oh my God, now I have just littered in the forest!” You know. And the blueberry bushes, God only knows if they’re still functioning back there or not. But all of the forest took over, you know. ‘Cause I wasn’t out there giving it love every day.

She oscillated between seeing the work as realistically being too much for one person saying, “I’m not capable of keeping up twenty acres, by myself, with no power tools or tractor.” and seeing her inability to

accomplish what she envisions as a personal failing, “my number one problem out here is I am just one person and I’m kind of a lame girl who doesn’t like physical labor.”

Many forest owners learned to relinquish control. They spoke of nature as something wild and of adopting an attitude of experimentation, learning from trial and error. One participant talked of a patch of maples they wanted to preserve and said, “*but nature had other ideas*” when the maples fell over due to wet and unstable soils. One couple described how, over time, they “learned that gardening is different in the woods” – a lesson learned from the frustrations they have had with deer eating their plantings.

Well, we thought we would have fruit trees... but really the only thing that benefits much from them are the deer and the birds... And one winter I was standing right here in the window and I was using a binoculars to look out there to see if I could see any deer. Right over there by the fruit trees I could see the deer. And mamma deer was trying to get some apples or something off the ground for the babies.

They went on to describe adopting a more experimental approach, learning what the deer do and don’t eat:

So over time [we] learned that gardening is different in the woods...So we’ve changed our mind from wanting to grow food to wanting to grow trees, and ferns, and things that are native...And the native species tend to be the ones that the deer aren’t so interested in demolishing anyway...That’s how they became native species...And you know they like this environment, and they like this climate, so you’re not fighting that...It’s one of the things we learned.

One forest owner described how she took cues from local site conditions and the existing plantings to embellish different areas of the garden around the house, trying out different plants in different places:

I kind of looked at what each area was and tried to figure out what would be the best for each area... I was looking at what was here and what the landscaper had planted. It was obvious that this was wetter. The previous owners had wanted kind of a Mediterranean garden so she had big escalonias here and heathers. It was just kind of lower maintenance...So I just kind of took the cue from what was already here. So I could tell all the heathers and everything in back, it was all well drained and then a lot of it was just planting and seeing what worked and what didn’t. I’ve lost a lot of things. I spend half my time at the nursery walking around and bringing things.

For some forest owners, overgrown paths that deny access to areas they had once developed seemed to preserve these areas better in memory. One couple described a spot where their son used to camp with his friends and plant vegetables. Regarding their son:

[He] and his friends had a lot of trails... and camps up on the hill behind the house... They would camp out in the woods and build forts. Sneak around in general. We did have a pretty good path of working trails through what’s almost an impenetrable.... He

planted hilarious stuff in the woods...garden stuff—onions and what not. Radishes...they had a horsetail patch they planted that they thought was really cool... Yeah. I think it's still there...Probably still there yeah... I saw it...I don't think the onions made it...But they were pretty cute gardening up on the hillside there.

Since the couple can no longer get through to find the place where their now adult son once planted a bunch of vegetables as a kid, they can't bear witness to the change and speak almost as if he could still be up there playing with his friends. This was not the case for a sculpture of an elephant that had once stood in their forest as part of a community sculpture exhibit that was held on their property years earlier. While we were sitting on their terrace, they described the sculpture to me with great enthusiasm. On the tour, they took me to see it far along a path they rarely walk on anymore, only to discover that it has since been smashed by a tree falling on it.

Oh the elephant! A tree came down on it. It looks like it's smashed. This used to be.... There's a gallery in town called the horsehead.... Did an outdoor art show here every year on this trail and so toward this end there's some funny things buried or standing that used to be in the art show... it's flat... that's so sad.... It was a perfect full sized elephant... it's not very elephantine anymore.

Being a steward

Stewardship was a common theme across all the interviews. Roughly half of the participants had recently taken stewardship training workshops and therefore shared this as a common background. Several of the forest owners used some variation on the phrase, "We're not just owners, we're stewards," which I expect might have come from the workshops. While many received the same education regarding forest stewardship, the way they described their role within the forest was nuanced and varied. A few forest owners spoke of managing their forest in very concrete terms, describing silviculture techniques to improve forest health and fire safety as well as various timberland programs that provide tax incentives to forest owners who retain their timber. One forest owner explained why he was currently thinning the forest, "to maximize the future timber harvest we want tall trees, but we also want fat trees."

Even though one forest owner said his initial interest in the forest stewardship workshops was to learn about opportunities to reduce his taxes, he said that while attending,

My whole attitude and outlook toward the place changed to be more of a steward than an animal....A care taker rather than a user and abuser...so I guess our main focus is

shifted from just kind of living here to maintaining the health of the forest and the environment, our environment more.

This quote alludes to the strongly personal nature of stewarding a forest that one is living in since the forest environment is also their environment. While attending a personal transformation workshop, one forest owner developed a vivid understanding of her forest as a place of nourishment and protection, which provided her with a sense of purpose as a steward:

When I'm looking out the window what I really like is looking at the conifers so big... I think of them as being strong and inoffensive. They don't hurt anybody or anything... these courses that I do...they are really valuable...its really changed my life and helped me deal with a whole lot of stuff... and you do this nature statement...You go out and you do this thing, and it was all about trees, and of the shelter that's provided, of that nourishing of the home floor A myriad of other beings... whether its lichen, bugs or squirrels... all of that that can live because of the tree or has that protection... so I guess that's what they are to me... ..and when I look out there I just love them... I just feel affection for them and awe and it's like there so big and yet they're not big when I compare them to what a 300 year old tree would be like... So I think stewardship is just my job to do the best for the environment that I can and pass it off to somebody who is going to do the same...

In a sense the forest watches over her and all the other beings that inhabit it by providing a “nourishing home floor” and “shelter” while she watches over the forest as a steward. This sense of home extended to the wildlife as many forest owners spoke about wanting to provide a safe haven or habitat for wildlife. This ranged from expressing a desire to protect the animals, to coexisting with them, to actively attracting them and observing their comings and goings. One participant said,

I think, for the most part the animals on our little four acres here feel pretty safe...if I'm working out in the woods, the deer, the birds will be very close by. The animals know where they are safe, and their quite safe here.

Another forester said, “We wanted a place for wildlife...A happy place. I don't have a noble goal or anything like that. I think it's primarily just you want to coexist.” Many of the people interviewed spoke of wanting to see wildlife. One forest owner had constructed bat boxes and duck houses and platforms for birdseed. Another forest owner pointed out footprints and scat on the trail. We walked a great distance to see a small tuft of hair stuck on a barbed wire fence along the property line, signs that a bobcat may have come through.

The stewardship role often took on maternalistic or paternalistic dimensions. Several forest owners spoke of fostering their forest's ability to reach maturity. One forest owner said,

I take it on as my job to protect these trees that I love and [give] them the opportunity to reach maturity, to fall down, and if they're going to fall down, to leave them alone.

Another said he felt, "like the forest thanks you when you take away [the ivy]" He described what started him pulling ivy. While walking around the property,

I kind of had this real sense, a real visceral sense that the whole forest and land and trees... [were] just getting choked and every time I go in and pull the ivy up, I felt I was...kind of freeing the forest.

Another forest owner focused more on fostering the little plants. As we walked around her property, she pointed out all the little ground cover plants by name and would stop frequently to weed and clean up around them and as she said, "to give them a little space, give them preferential space to grow." This idea of needing space was a common theme that extended to people as well. One forest owner described how claustrophobic his forest feels.

Well it's so claustrophobic in the woods... you have to clear some space to feel not claustrophobic I guess. There were a whole bunch of Alders here and I just took those down and graded it out and planted grass..... And it just feels like a good place.....and if you wanted to go camp... this is a great place to camp.

Often restoration projects served to achieve aesthetic as well as ecological goals. Thinning provided visual access to an otherwise impenetrable forest as described above in the section on gaining perspective. Another couple was converting a pasture back into forest so that it would blend in with the neighbors and soften what they found to be a harsh transition between pasture and the forest edge:

You'll see on either side our neighbors have native trees. So it just fit in and filled in something that was existing...The edges are really starting to soften now. I mean even though you know the biggest trees are about 35 or 40 feet they are kind of starting to fit in with the woods a little bit...It was a very harsh transition from this stark grid layout with barbwire fence, to kind of nice trees on either side... Beautiful trees.

Another landowner talked of creating little niches:

And this is a nice little [place]. That's what's fun is you walk out and you find these little places and they're fun. They're a different perspective. It would be nice to just clear a little spot under here and put a little table and chair and read under the trees. You know. Clearing is not a bad thing. It's fun. I actually like it a lot. Cause you've got these woods all around you that's not being touched and I like to play in it.

When I asked her, "Why did you say that clearing is not a bad thing? Does part of you worry that it is?" she said, "Yeah, I guess so. Part of me thinks it should just be left alone, but part of me naturally wants to play." She had also expressed her mixed feelings regarding constructing a small drainage ditch to prevent

a large wetland from growing and taking over a small grass area she maintains for her grandson to play. This exchange highlights the complex relationship many people had regarding their place in nature. While all of the participants described themselves as playing a positive or protective role in the forest, a certain amount of ambivalence could often be detected below the surface of what they were saying. One forest owner said that he and his wife were “trying to preserve it [the forest] and get it back to something that wasn’t destroyed by human beings.”

For many, the forest provided a connection to history. Most participants told me when their forest had been logged and whether it had been clear-cut or selectively logged or thinned in order to explain why their forest looked as it did. One forest owner had combined several lots together and showed me a line between one lot that had been clear-cut and the other that had been selectively logged. Many spoke of their work to protect and restore the forest as contributing to a legacy. One couple laughed about how taking a stewardship workshop brought them into contact with their mortality and caused them to write a will to protect the wildlife, saying,

Nothing like a forest to bring your mortality into sharp focus...When this tree is ready to be harvested, we'll be long gone... so that I think made us both think about our mortality. Which is a strange thing that from a forest stewardship the class, you wouldn't expect the outcome would be to update the wills... but we wanted to make sure that at least this 20 acres, we don't know what will happen with the neighboring properties...But at least we can know that this 20 acres... bears and deer and cougars are always going to have a home and that is important to us.

Another talked of how living in the forest stretched his sense of time:

With the forest there's this sense, because some of the trees are so old in there, there's this whole sense of stretching time both forward and backward knowing that these trees were here before... we were even alive, and knowing that hopefully, if people don't destroy the island, or destroy it, that they'll be there after were gone.

Feeling restored

Nearly all of the forest owners talked about feeling restored by working and living on their land. One forest owner talked about finding it relaxing to find her attention drawn outside of herself to the details of nature:

I really think about the contrast in textures you know the bark is so rough got so much Patina on it, there's moss everywhere. And that the height of trees somehow really inspires me... It really brings your attention beyond yourself. Beyond your man made environment. [It] picks you up.

A number of participants spoke of feeling a spiritual connection. One forest owner talks about finding a sense of something more:

There's definitely something spiritual. Kind of a connection to something larger... That it's larger than just my ordinary life...It's feeling connected to something really special, and meaningful, and thinking there's more than just what I'm usually immersed in...The possibility of more, of something. I just think, "Ok, This is so much more than I'm imagining it is."

A number of forest owners spoke about their land as a refuge or sanctuary. One described the importance of finding quiet and beauty in her garden after her stressful job working in a psychiatric intensive care unit. Another talked about feeling oxygenated every time he goes out to work in his forest. One participant described how he feels after a day of working in his forest:

Being in nature just affects me in a positive way. I mean I don't know what happens when I'm back in the normal stream of life but it changes when I'm out in nature for at least a couple days. And the longer I'm out here the better it is and it's just important for my well-being...Just calms me down and there's just the whole pace of life that's different.

Many talked about enjoying the physical aspect of the working in the forest. One landowner said, "I guess that's just working the land, there was definitely this physical aspect to it to. Just going out and being stressed at work and being at the computer all the time and be able to go out there and just physically work, there's something really need about that." Several of the wives often joked about how much their husbands enjoyed using power tools and machetes. One participant exclaimed, "Oh, a man and his chain saw!" During one interview, I walked ahead with the wife while the husband fell behind and seemed totally absorbed in whacking off low lying branches with his machete. Their property was a dense thicket of young trees. Clearing branches along paths was a priority as they had narrowly avoided getting poked in the eye by all the little branches. At the end of the interview, the husband proudly placed his machete on a block for a photo.

The work however could also be overwhelming. One couple described a number of physical injuries they had sustained from becoming too absorbed in their work. In talking to participants, it became clear that they were rarely at rest in the forest. Many had created little sitting areas, but when asked if they use them, almost nobody ever did. One forest owner described some of the sitting areas she and her husband had created:

There's just certain spots that we would gravitate to... they're all different. You know there's some places we would sit in and watch [the wildlife]..... We're rarely sitting...I wish we could. [If I were sitting]... I think I'd be looking at the garden, I'd be looking and going, "Mmm...that should be moved." and, "I wonder what that would look like over there." And then I'd get up, and then I'd see a weed. I just can't sit for very long.

The sitting areas might serve more of a symbolic or projective restorative function by creating a place in the woods for a kind of surrogate self to be at rest.

RELATIONSHIP TO PLACE

Struggles for compatibility

Many forest owners fell in love with their land immediately. One spoke about finding the valley view she always wanted another described being drawn into her property "through a tunnel of ferns." However, not everyone developed an instant bond. One participant described how she needed to overcome her fear of rural areas. She described driving into the country to go horseback riding with a woman she had just met:

I drive out here, by God, from Seattle. And I thought I literally reached the outer known regions of the known universe. ... And so you come through the gate and there are all those terrifying signs. And I was just like "Oh my God, this is the biggest mistake I've ever made in my life. Where am I? How do I get home? Who are these people?" I mean... I just kind of met her in the class and I didn't really know...and she's from New Zealand which isn't in and of itself bad, obviously, but I didn't know much about her frankly. And so I'm coming out here to the middle of nowhere. But anyway, so we went riding and it was just the most beautiful thing.

She had always been fascinated by old family photos on the frontier and wanted to move into the country and own horses. She describes the day she finally found her courage and discovered the property she ended up buying:

.... And one day when I was a little early to meet her for a ride I thought, "Well I'll drive around the neighborhood," you know. And I lost my intimidation for the dirt roads, and the scary signs, and the gates that could be closed at any time. And, but I still thought, "Oh my God, I could [go] out here in the woods and get lost something terrible." So, anyway, I just drove down the road and I came down here and there was this perfect country lane with the little kind of gravel with the grass down the side and the nice tall aspen looking, but they're birch or whatever, I guess they were alders on the side. But it was just country lane looking and I thought, "Oh, that's beautiful." And there was no sign, no number, or no trespassing, no nothing. There was just these two metal posts and a chain lying on the ground. So I don't do this normally, but [I] drove on down the driveway and came out here and the area had been cleared by the people who owned it. And I don't know what came over me, I just started weeping.

Struggling for and finding a sense of compatibility can involve intense feelings and associations can play an important role in the way people feel about their property. In the example above, the potency of the romantic image of a “country lane” with grass and gravel, signs of a human touch that made it feel safe, and the sense of mystery of a curving road helped facilitate her impulse to drive in and discover something new.

Clearing up garbage was a common theme. In these descriptions, there was often a sense of the forest needing to be cleansed before the landowners could really settle in. One forest owner needed to clear out abandoned cars and a pile of used needles to make his property safe for his children. Another forest owner, who’s property had been in her family for generations, describes coming back to take over the property from her father and finding the place completely trashed by squatters. Cleaning up the place was both a physical as well as a psychological reclamation project:

Getting rid of the...what I think of as the lingering essence of the people who lived here... because they cared so little about the place. I was so angry for quite a long time. So there are just mountains of garbage, whole sofas and stuff, and I just took them outside and poured gasoline on them and had a massive fire. This thing was a funeral pyre. It felt good...Just get everything out of here...but it's not quite true that all the garbage is gone cause there's still caches of broken glass and that kind of thing... but it's almost gone...And when that's gone, I think I will feel way cleaner about the place, that they're really gone from here and that that sort of wounding the soul of this place will be closed.

For one forest owner, learning about forest health through a stewardship class helped him to cope with his initial bad impressions of his property, reframe his vision and begin making improvements. He said, “I thought I just bought fifteen acres of forest, but now I realize I just bought fifteen acres of the forest equivalent of an overcrowded leper colony.” He described how his first impressions of the overgrown, “creepy” and unhealthy seeming landscape became demystified when he learned what was causing the trees to look creepy. He explained:

There's tons of mistletoe here...I guess there are different varieties. But it actually is a parasitic plant and the variety that grows here, it grows in higher branches and then and it makes what they call witches broom [where] an area of the tree will just shoot out way too many branches. And it's almost a tumor in a way, it's like a cancer. It's overgrowing and the mistletoe as a parasite makes it do that and then that gets unhealthy.

This increased understanding led to new directions about how to care for the land:

I've taken on a much bigger role in managing it. I really thought my time up here would be spent stringing a clothes' line or just making [it] more hospitable for camping. And

now I've taken this role in getting it thinned out and getting it healthy ...Just more of a forestry owner and not just a piece of land for a campsite....So I just wanted to de-spookify, de-creepify it. 'Cause it just was not inviting.

Building community

Many forest owners talked about sharing their property with their friends and family, hosting parties and family gatherings. One couple did not have enough space to entertain in their house so they constructed a pizza oven and a cast concrete banquet table in the forest. Another talked about teaching his grandson how to tell if a tree is a hemlock and about how much their kids and grandkids enjoy chopping firewood and playing in the forest, and many talked about wanting to leave their land as a legacy to their kids. One couple has a little “fairy house” that they hide out in the woods for their grandkids to find.

Well the kids go out here once a day at least, maybe twice a day and maybe the fairy came, maybe she didn't. You just never know... and then maybe the fairy moves the house too... the house moves around to about 4 or 5 different spots on the whole trail system...so initially they [grandkids] usually come running up and they go here on the fairy trail and they'll go, “oh my gosh, the fairy house is gone!” and so then they start running around on the trails and we're always with them and we just sort of go along and see, where did the fairy take the house? Oh my gosh! And [when they find the house] they always say, “thank you fairy!”

They had timed this story perfectly to coincide with my “discovering” the fairy house in the woods, opening the door and finding a treat inside. “Thank you fairy!” Several forest owners also expressed a desire to host city kids for a day in the woods or developing a relationship with agricultural co-ops to manage a vegetable garden. For some, this was a way of instilling a more personal appreciation for native forests among the public. In talking about inviting people to her land to make wreaths, press cider or just walking around she said,

I want to share... those kinds of activities connection as sort of a non teaching way of having people not just have a restorative experience but having an experience that says these kinds of places in this forest is valuable...It would be different than going for a walk in the national forest.. because it's more of a personal place... its sort of it makes the change that it's not just, “Oh it's the forest and we should protect the forest”... as opposed to, “What can we create in our own back yards by not just having roses and having native plants and bringing in native plants and not necessarily seeing them all as bad.”

For one landowner, the forest provided a private setting in which to build a community of like minded people. He and a number of families lived together on over 80 acres and would share meals together on the Sabbath.

We bought all of these [lots] with the intention of building our homes and living on them... so that's what we did... so most of these people have a lot in common down here. We know each other. If there is some sort of disaster we all help each other... but these four are real close plus one more family right up here... so these are all, with the exception of mom, these are all home school families... so there are 16 kids that are all home school families.

Another couple encouraged close friends of theirs to build small structures on their property so they could come out and spend weekends together. For others, the communities were less intentional. One couple constructed a trail over to their neighbors' house where they would often go to dinner. Another describes sitting with his friends and coming up with all sorts of creative ideas. One idea involved holding a fashion shoot in the forest using his concrete banquet table as the runway floating above a sea of fog: "So it will be kind of quirky...It's so funny brainstorming with all these creatives...yeah it's like, you're mad, love it!"

Neighborhood relations were not always good and all participants talked about valuing their privacy and the quiet and freedom that it provided. One couple was harassed by a neighbor during an election. Another described how she felt the need to construct a perimeter path around her property to mark her land:

There are people who live out here who feel if that leaving forest is not making use of the land and that if you're not using it, it's basically, it's almost questionable as to whether you actually own it. We had to let our neighbors actually know that the plants on our property that were the native vegetation were important to us and one of the best way, the way that actually ended up working was when we put in this perimeter path.. It seemed to become more obvious to them without actually having to say a lot... that it's kind of claimed space.

Embedded memories

Because we've lived here for almost 30 years, the land's history is kind of way intermingled with our history...It's our history everywhere you look.

The way memories can become embedded in a place was particularly evident while walking around in the forests. Many narratives related directly to the places and elements we passed. As we passed a maple, one landowner described how he had needed to undercut it after a windstorm and how he had watched it slowly stand back up, "It was silent...It was awesome that there was this big massive tree going up and when it hit the stopping point it went 'thud'." As I was walking along a road flanked by a steep hill with another forest owner, she started telling me about how a deer had once leaped over her head in this very spot:

I walked up here once. This is a little story. And I was just walking along. All of the sudden I hear this clunk, clunk, clunk, clunk. And then this deer jumps from the bank, over my head and lands over here. It was amazing. It was really amazing.... It was just amazing cause you really felt that force. That power. It was something. One of those things I'll never forget.

One recounted childhood memories growing up on her property. On the tour, she took me far up into the forest to a spot she thought might be a quiet private place she had once played with her metal cars. The entire property seemed to be laden with memories. One memory was associated with her mother's gardening: "If I'm digging stuff out by the front rhododendron that was my mom's... then I just hear my mom saying... oh good job you're finally cleaning that up." Pointing to a place under a tree in the yard she described helping her dad with the saw and the associations it evokes:

All I have to do is go over there under [that tree]...I can't tell you how many hours I spent under that thing because there was a big saw blade under there with a motor and a big belt... so my dad would put logs whatever it was probably alder on the shelf and push it forward. And our job was to pick up the pieces, put them in the cart.

Several forest owners placed mementos into their forest. One couple collected rocks and trinkets from their travels and placed them throughout their property. Another created a kind of living calendar by planting trees in commemoration of family birthdays and significant dates. As we walked past one tree, he told me that he had planted it to mark the date when his wife first came to this country and then proceeded to tell me the story of how they met in France when he was in the military, how he had proposed to her and how she had come to live with him in the United States.

A few forest owners described having strong childhood associations that helped to forge a strong bond with their property. Many relayed fond memories of camping as children. One spoke about her childhood love of horses and a desire to connect to her family's frontier roots. Another talked about a strong attachment to trees and the rain that came from learning to read in her elementary school library and looking at the redwoods outside the window.

I always loved [the] forest. I think it goes back all the way to my childhood... [My] elementary school... was in a redwood forest...There was just this extraordinary connection to the trees and the library was set so there was this whole big picture window looking out into the redwood forest. I just have strong memories of learning to read and being in the library connecting that to the trees...But I can just remember days when it's raining and I would look outside and...I mean those were just the happiest times... it was just being very present and very content and feeling that things were ok... [There] was

just a lot of tension at home as a kid so it was just a place to feel that everything's good, everything's ok. Peaceful.

Places were also enhanced through the imagination and creativity. While walking, many forest owners pointed out gnarly upturned logs as places that elves or fairies would live. Trails and special places were often given fairy book like names such as "The Magic Kingdom Trail" or "Shangri-La". One landowner described how she went about creating a few special places in the forest by embellishing them with colors and textures and different vegetation:

So this is designed as a sort of tapestry of changing colors for all seasons and to do something with the horsetails. And then we have another area which one of my friends came to visit and she calls it the druid circle, cause you walk around it and it reminded her of that stump right there with the little thing, so over here this is more shady and you have all the native salal and I love the huckleberry, so I put a bunch of the native evergreen huckleberries in here and the deer ferns. So we made this a little more of a native garden.

Forming an attachment

In describing their experiences of working on projects several forest owners talked about having a love-hate relationship to work. When asked what they would miss if they were to leave their land nearly all said they would miss the work or "always having something to do," and when asked what they would not miss nearly all answered, with a small laugh, "the work." Taking care of their land, stewarding it, leads to a host of opportunities. Several participants had stories of the physically demanding aspects of the projects. At the same time, however, the projects they undertook and the struggles they experienced made the place their own and instilled them with a sense of purpose. One owner wished he could see his forest in a hundred years to see the legacy left from all his work of pulling ivy so that the native understory could re-establish and new trees could grow. He said if he had to leave he would miss,

The opportunity to see how things emerged after...me freeing up space [in the forest] for things to grow naturally. I want to see. I want to see some of the things that were planted; I'm more rushed than she [wife] is. I'm more paranoid of dying than she is probably. I kind of gone, "Oh, I'd love to see what this is like in 100 years." That would be really cool...

Many participants reflected on feeling a tremendous attachment to their own land, a sense of specialness and freedom. One said that if she needed to leave her property she would miss, "the serenity, the beauty, the health of it, the privacy, you know all of the things that it gives you. It's really special. The freedom to

do, to be creative and do the things you like to do with it.” Another forest owner described her property as a sacred space where she feels grounded and can be creative:

The term that comes to mind is sacred space for me, absolutely. It's where I feel present, it's where I feel grounded, I can't imagine a day not getting up and either working or walking in the garden. It's a way for me to be creative as well. So I can't draw and paint. So this way I can work with textures and colors and, um, it's just been the one consistent passion in my life regardless of my career... So, I think it's that and just being immersed in it—the colors, the fragrance, I love buying fragrant plants, and I love to just be looking and going, “Oh, I could move this here. This color would look beautiful there.” And it's just a total immersion, that's how it works out.

The attachment was to the land as a whole as well as to special places on their property, marked by features that captured their imagination. One couple showed me a valley with moss covered trees that they call “Shangri-La”.

I mean this has always been like that and to me it's just a beautiful special place and when the bench was here I would come out here and sit and sort of meditate and this is one of my places I can't live without. I love this very spiritual to me. If I was going to be the Buda and sit under the tree. This is where I'd do it.

Many forest owners described enjoying a rural lifestyle or simple living and having a feeling of contentment, enjoying a slower pace, of living with the familiar, having enough, not needing more. One forest owner described her place, “It's very comfortable... this is the perfect place.” Another forest owner said his friends tease him about the fact that he doesn't travel. He said, “Where would I go and what would I do... Well you could go and see these woods and hike around. I can do that at home...I even have a swimming pool in the house, a little indoor one. And I have everything that I would go to a lodge for...so why travel.” Another spoke of his forest as a known place that he would miss this if he needed to leave. He said,

It fits my family lifestyle. We know the area, we know the weather, we have a lot of memories here of course we would miss all those.

Many forest owners came to know their land intimately, exploring it, noticing details, observing small changes, and bearing witness to unusual events. The attachment was also formed by working in the forest, stewarding it, sharing it, and finding a creative outlet. One forest owner spoke of her deep feelings of attachment to her property knowing that,

There's a million places like this around the world. So it's not unique, but it is beautiful.

Discussion

Interviewing forest owners on their land and in the presence of nature provided an opportunity for the forest owners to convey their experiences to me both verbally, by sitting down and talking with me, and demonstratively, by showing me how they see their forest and interact with it. In so doing I was able to gain a fuller appreciation of how forest owners come to know their land intimately, how they conceive of their role in the forest, and how they form an attachment. Using the Reasonable Person Model as a tool for analysis also provided an excellent framework for looking beyond categorical themes and exploring the process of model building itself.

What emerged was a nuanced portrait of the experiences, activities and motivations of a small group of family forest owners. Talking with landowners revealed the extent to which they were always active and engaged when they were outside, suggesting a close correspondence between meaning and action. Terms such as 'recreation' and 'scenic beauty,' which are often cited as reasons for owning forestland on surveys and tend to imply leisure and passive nature appreciation, do not capture the level of personal engagement with the land that was evident in the interviews. Exploration and projects undertaken to gain access and gain perspective were the primary means by which landowners came to know their property. Working on projects, reading the land, coping with difficulties, solving problems and bearing witness to natural phenomena helped landowners develop an even more intimate and detailed knowledge of the landscape. Many took on the role of a steward, caring for the forest and providing habitat for wildlife, and enjoyed creating a sense of community within nature by sharing their forest with friends and family. Working on the land and getting to know it intimately lead to a deep attachment and a sense of well being. In essence the interviews provided insight into ways in which forest owners develop an intrinsic understanding of their forest.

Experience based planning

In this project I learned how the process-oriented, experience-based approach to planning, which characterized the activities of most of the forest owners I interviewed, facilitated a deep connection to

their land that remained engaging and open to new experiences. Through the interviews it became clear that living and working in the forest was not about obtaining an end result but was really about a living experience, involving learning by doing, and one where everyone was an “expert” at various stages of development. One forest owner said,

There was never any big vision. It's all little pieces of vision. Or not even a vision, just, it's obvious this is what we should do here.”

Rather than developing and attempting to implement a big plan, forest owners talked about the need to stay adaptable and expressed great joy in discovering new things and the sense of freedom, creativity and spontaneity they felt while working on their projects.

The projects that seemed to be the most engaging were those that allowed forest owners to extend their mental models, developing a type of landscape literacy. Exploration seemed to be the primary means through which forest owners developed an understanding of their property, which supports the Kaplan's (1982, 1998) research on mental model building and Casey's (2009) writings on emplacement. Many of the forests in this study were dense and impenetrable, making it difficult to undergo a sequential planning and design process of conducting a site survey, developing a plan and then implementing it. Rather than imposing a trail design onto the land, for example, action often preceded understanding. Making trails facilitated exploration as landowners usually just started working on projects and let their vision evolve as they went. Design and implementation therefore usually happened simultaneously or in reverse or incrementally in smaller chunks.

The non-linear planning style of the forest owners cannot be attributed entirely to the difficulty of developing a vision in a dense thicket. Some landowners owned forests with a more open structure and one couple's property had a large meadow that they were working hard to replant with trees. Yet regardless of the physical characteristics of the land, nearly all of landowners expressed great delight in allowing themselves to be guided by the land and opening themselves up to new discoveries. What the landowners discovered and responded to in their forests would not be easy to predict. Through removing weeds and making trails they often uncovered small micro phenomena, such as a unique community of mosses, a deer trail, a vernal stream, or a flowering cherry tree. Through trial and error forest owners

became familiar with small variations in soil and drainage conditions during different seasons as some plants did better in certain areas than others, and their planting schemes evolved accordingly.

For me part of the enjoyment is not just the end result...It's fun building stuff.

In emphasizing process rather than an end goal, many forest owners opened themselves up for multiple outcomes. Forest owners spoke about enjoying the way their forest provided opportunities for relaxation and play and a reprieve from their stressful jobs. Taking a more spontaneous unstructured approach seemed to be associated with developing a sense of freedom and independence that may be lacking in the stressful jobs. The rapid growth of vegetation required trails and areas to be constantly maintained. The forest owner who did not enjoy the work itself seemed to also express the greatest degree of frustration and loss of self-confidence when she spoke of feeling lazy and disliking physical labor. During the interviews it became clear that for most landowners working in the forest involved much more than physical labor as they became fully engaged in their surroundings, reading the land and observing the details. These findings also parallel Duvall's (2011, 2012) research on the success of intrinsic engagement strategies for developing a walking routine and the Kaplan's (1982) work on cognition and the environment, which found that people enjoy recognizing objects, inferring what has happened in the past, predicting what could happen in the future, and evaluating different aspects of the world around them.

Relating to nature

None of the forest owners referred to their forests as wilderness, a view that seems reasonable given the proximity to neighbors and the connection to utilities and roads, yet the enjoyment they expressed in exploring their properties and experiencing nature's wildness recalls the writings of great figures in the environmental movement such as Thoreau and Leopold, who also formed a relationship to a piece of land that they lived on and studied carefully. While the landowners in this study did not approach their forests with the same degree of philosophical and scientific rigor, their connection to nature nevertheless seemed to grow out of an intimate knowledge of the land. Careful observation is a method of inquiry used by many disciplines such as art, literature, design and science (Appleton, 1975), and for family forest owners, exploring the forest was a holistic experience that did not necessarily segregate their curiosity

about the physical phenomena they observed from their enjoyment of their own sensory and internal experience. Typical forest management activities such as restoring native vegetation or thinning trees were combined with personal goals and emotions such as de-spookifying it or opening it up. One landowner said,

[In pulling ivy] there was a real sense, not just of freeing the forest, but freeing ourselves to walk and enjoy it in there.

In addition to serving as a scenic setting for social activities, the forests provided an opportunity for family forest owners to strengthen their relationships with friends and family through building a shared relationship with the land. This is similar to Rachel Carson's book, *The Sense of Wonder* (1956), in which she describes introducing her nephew to the wonders of nature. Several landowners reenacted their experience of exploration through hosting trail parties and treasure hunts. One landowner talked about teaching his grandson how to tell the difference between a hemlock, a cedar, and a Douglas fir. Another couple said that whenever their adult sons come back to visit, they always go out and chop wood, something they used to do as kids. During one visit, the daughter joined briefly while I was walking with one landowner and described her favorite part of the forest to us. As she was speaking, I noticed that her mother became completely transfixed. Earlier in the interview the mother had mentioned that her daughter had recently returned from law school in New York and was becoming more invested in stewarding the property, which had been in the family since the early 1900s. When I asked the mother what this meant to her, she replied, "It means everything to me."

The importance of building community within nature relayed by the forest owners contrasts with the writings of the transcendentalists, who placed great importance on the individual's separation from society in order to journey into the wilderness and experience its raw power. This distrust of society brings to mind the inherent complexities and contradictions in forging a relationship with nature that was alluded to by Jordan (2011). He warned that it is important for people to recognize the ways in which they are separate from nature in order to be able to view their actions more critically and then take steps to restore natural systems. This insight raises an important question. To what extent does forming an attachment

with the forest necessitate merging with it? Does the struggle to overcome incompatibilities and make the forest one's own necessarily mean the obliteration of the other?

With the forest there's this sense, because some of the trees are so old in there, there's this whole sense of stretching time both forward and backward knowing that these trees were here before... we were even alive, and knowing that hopefully, if people don't destroy the island, or destroy it, that they'll be there after we're gone.

This quote relays a combined sense of optimism and unease that was expressed by a number of forest owners. The reference to (other) "people" who might destroy the island may also have been an indirect way of telling me about his ambivalent feelings regarding his own as well as society's role in nature. While his time on earth may be limited, and he cannot control what came before or will happen after he is gone, he found peace in knowing that the trees will outlive him. Many forest owners expressed a similar feeling, and rather than being disheartened by their own mortality and lack of control, many expressed a great sense of purpose in caring for the forest during the time that they had.

Many forest owners described themselves as stewards. Whether they factored in the economic value of timber or not, they saw themselves as caring for the forest, restoring it, protecting its health, preserving it, or creating a safe haven for animals. At the same time, many talked about valuing their sense of privacy and the freedom to do what they want. Stewardship was a holistically undertaken as they were caring for an environment they themselves inhabit. In stewarding the forest, they were stewarding themselves and addressing both personal and ecological goals. In some ways personalizing the forest and stewarding it could function as a form of merging with nature, conflating personal identity and needs with the needs of the forest.

At the same time, many forest owners spoke at great length about nature's unpredictability and wildness, a system that operated by rhythms not entirely under their control. Sometimes this was expressed as frustration at how quickly the forest could become overgrown. At other times, accepting the dynamics of nature allowed them to relax and cope with difficulties by relinquishing control and feeling curious instead. Many expressed a sense of awe in relation to dramatic events such as windstorms and delighted in the subtle changes in light, the seasons, and unexpected encounters with owls and deer. These stories were often very intense and vivid, conveying a sense of having witnessed something remarkable. For many,

experiencing nature as something wild was also what kept their experience fresh and connected to something larger than themselves.

Developing a sense of place

In talking with family forest owners I learned the extent to which they connected to their land through a heightened ability to become oriented and perceive subtle details and patterns in their forest. The forests I visited would have appeared messy and illegible to me if I had simply walked through them on my own. While some of the properties had aspects which resembled the romantic old growth forests of my imagination, many had been harvested recently, and all exhibited the exuberance that often characterizes places which are alive and growing. It was while walking with the landowners and seeing what they saw that I learned the extent to which their senses had been developed to make the forest legible and coherent. They perceived openings and opportunities where I would not have seen them. And many of their projects served to enhance these qualities. Casey (2009) wrote,

The more I perceive or come to know wilderness as an orderly scene – that which appears to be chaotic in nature is only a more complex kind of order. (Casey, 2009, p.224)

Landowners made their forests more legible by observing the details, clearing brush and responding to the opportunities they saw as they built trails and embellished little nooks in the forest. In addition to learning how to identify the plants on their property, they seemed to embed their forest with landmarks as a way of orienting themselves, pointing to unique natural features such as old trees or areas with wetland vegetation. Some areas that the landowners singled out were like mini-worlds, recalling the importance of being able to get away and enter another world (visually or physically) to restore a sense of well-being, which was discussed by the Kaplans (1998). “Shangri-La” was a mossy valley one land owner liked to sit next to and get lost in meditatively. “The Magic Kingdom Trail” was actually an off-trail route that involved walking on top of a series of giant downed logs that formed a sort of natural boardwalk through a vernal wetland and then led into an area of new growth that created a kind of low tunnel to walk through.

Sometimes the landmarks were very subtle. One landowner described how she was inspired to start a trail in a certain location by a rock. I imagined that this rock must be something quite large with a unique

shape, but when she showed it to me, it was the size of a large sweet potato. While trying to find our way back through the dense thicket that covered another forest owner's property, we got lost as he couldn't figure out which GPS point corresponded to the clearing where the cars were parked. He had marked a bunch of GPS points throughout his property as an orientation aid. As we continued walking, we came across one of his mental landmarks which consisted of a little twig that had gotten lodged in a tree trunk during a windstorm. It was very subtle, but it was enough to tell him that we needed to head to the left.

John Dewey's (Appleton, 1975) assertion that beauty is not an intrinsic quality of objects, but is derived instead from a person's relationship to the environment, rings true in the interviews. Rather than passively appreciating the forest as a visual composition, the family forest owners spoke about their attachment to nature in emotional terms, feeling connected to something larger or having a feeling of "specialness" when bearing witness to natural phenomena such as encounters with wildlife, changes in the light, windstorms, or just seeing their forest grow over time. The impetus to walk through little mini-worlds, or seek out openings for trails, or open up the forest to gain a sense of extent, or build tree houses to gain a new perspective from higher up, describe aesthetic experiences which speak to the desire to explore new territory and become oriented as described in theories on cognition and the environment (Kaplan, 1982), prospect and refuge (Appleton, 1975), and implacement (Casey, 2009).

A significant difference between the "preferred" landscapes in the visual preference research and the forested settings of this study was in their appearance. The Kaplans (1998) found that most people preferred landscapes that contained a balance of complexity and coherence, legibility and mystery. In many cases these qualities were found in photos of cultivated landscapes. Some photos of the non-preferred landscapes in the Kaplan study closely resembled some of the densely packed forested settings that I visited in this study. Yet all the forest owners, whether they had younger or older trees, felt attached and rejuvenated by their forests.

I find this difference to be compelling as it raises questions in my mind about ecological design and about what is an ecological aesthetic given the growing emphasis on process in addition to structure and composition in the field of ecology. While such questions need further study and will always be a matter of

debate, this study provided some interesting insights. Rather than contradicting the Kaplan's findings, the interviews suggest that there may be a difference between the way a strange landscape and a known landscape, which one can personally manipulate and watch grow, might feel and be experienced. A landscape, which may appear chaotic at first, can become more legible over time, and many forest owners undertook projects to increase the legibility of their forests.

The Bloedel Reserve provides another point of comparison on aesthetics. While Mr. Bloedel started exploring his property with a machete, much like the forest owners in this study, he eventually created a carefully designed and maintained sequence of landscapes to provide a sense of harmony with nature's divine order. The forest owners in this study described their appreciation of nature less in terms of the structure or composition of the landscape and more through their experience of dynamic phenomena. This difference may be due in part to the fact that the Bloedel Reserve was designed for the public, whose short visits would not enable them to witness the natural processes. However, it may also be due to a difference in emphasis on a universal order on the one hand and on dynamic processes on the other, not necessarily to the exclusion of the other.

Concluding Remarks

Forests are a vital part of Northwest landscapes. Regardless of the size of an individual holding or whether it is private or public, each part of the land is integrated with ever larger ecosystems. To perpetuate and enhance the biological, social, cultural, and economic values of forest ecosystems, we must be stewards of each part. (Washington State University Extension, 2006, p.2)

In their *Forest Stewardship Planning Workbook*, Washington State University (2006) described their mission for forest stewardship and ecosystem management. Because of the increasing fragmentation of ownership, they argued, it is important that each part gets stewarded in order to support the functioning of ecosystems at the landscape scale. In their major findings from the NWOS, the USDA Forest Service (2008) stated, "Family forests are not being managed sustainably!" - citing that while one in four family owners have commercially harvested trees, only one in twenty have written a forest management plan.

After talking and walking with a small sample of family forest owners in and around the South Puget Sound Area, I left with a more optimistic feeling. Many of the forest owners in this study did not start out with the goal of being stewards, but through living on their land, observing nature carefully, and working on it, they developed an intimate knowledge and a deep connection to their land, regardless of whether they had written a plan or taken a stewardship class or not. In some ways they were becoming incidental stewards.

This has lead me to ask, is writing a stewardship plan an appropriate metric for gauging stewardship or sustainable forest management as the survey report implies? As well, to what extent is stewardship about developing an understanding of the land or landscape literacy, about caring deeply for the land, about being self reflective regarding one's actions, or about undertaking certain forest management prescriptions? I would argue that stewardship is most meaningful and sustainable when it involves all of these, combining intrinsic and extrinsic knowledge, personal and experience based understanding with access to current scientific thinking on forest health. The reality is likely that stewardship involves shades of gray as people's thinking and priorities change over time, just as ecological theories and practices are always being debated and revised.

In order to address concerns about the sustainable management of forestlands, and the environment in general, it might be important to ask, how do people come to see themselves as stewards and how can this be encouraged and influenced? In her book, *The Incidental Steward, reflections on Citizen Science*, Akiko Busch (2013) described her own maturation as a steward through her participation in a number of citizen science projects:

If there is any quantifiable outcome of my time spent looking for the bats, the egg masses in the vernal pools, or the eels in the stream, it likely has to do with accuracy in searching out the minutiae; for attending to the particulars; and for suspecting any quick conclusions I might be tempted to draw. More rigor for fact, more room for doubt. Knowledge and skepticism converge and inform each other; the strength of their alliance is not something I had understood before. (Busch, 2013, p.205)

The combination of her own interest and involvement in observing nature over a period of time combined with the structure of the scientific studies provided an additional degree of rigor and nuance to her observations and theories. The forest owners in this study came to understand their land and develop a sense of stewardship through a process of discovery, providing insight into an intrinsic process through which they gained knowledge and formed their identity. Many forest owners also shared with me the technical knowledge they had gained from stewardship workshops and/or books as it had helped deepen their understanding of the actions they were taking to improve their forest's health and the phenomena they were observing.

The land surveys which some forest owners conducted for stewardship workshops seemed to be particularly meaningful in providing a structured exercise through which to explore and get to know their forests. Similarly citizen science projects which ask people to observe and systematically record their observations of natural phenomena such as the comings and goings of migratory birds or the lifecycles of butterflies and plants have been found to be an effective way to involve people in their environment while generating data on a regional scale, far beyond the reach of most funded research projects (Busch, 2013). In addition, action research, as demonstrated by the Mill Creek Project in Philadelphia (Mill Creek, 2013), can be an effective way of engaging communities through iterative cycles of planning, action, observation and reflection (Dick, 2000). These examples suggests that engaging people through the

activities that interest them can be a meaningful way of encouraging people to transition from being casual inhabitants or observers to being actors on behalf of themselves and their environment.

The forest owners in this study seemed to be most engaged, not by defining end goals, but by activities that facilitated exploration, discovery and the development of a strong sense of orientation and place. They enjoyed projects that provided new perspectives and an experimental hands-on approach through which they interacted with their forest and observed natural phenomena. I found that their experience-based, process-oriented and holistic approach to the land kept many forest owners curious about what they learned and did, and I believe this gave their conception of their land and their role within it a great degree of nuance and sophistication. The forest owners expressed an appetite for understanding, a willingness to be flexible, a desire to care for their forest, and a degree of disquiet regarding people's role within nature. In developing a deep knowledge of and attachment to place they were becoming stewards of a forest environment that was also their own environment, making their relationship to nature intensely personal. As they learned about their forests, they learned about themselves. Learning was not just about the acquisition and application of knowledge, but similar to Thoreau's insistence that people require opportunities to exercise their ingenuity, the landowners in this study delighted in the opportunity to exercise their creativity and intelligence and develop their perceptual, observational and analytic abilities.

People's relationship to nature is complex and dynamic, with each influencing the other, and sustainability is less about reaching a state of equilibrium as it is something that must be continually negotiated. The forested settings I visited were somewhere between cultivated and uncultivated land and this seemed to be what many forest owners appreciated most about their properties. The interviews suggested that the attachment landowners formed with their land was both about their ability to get to know it and personalize it as much as it was about the fact that their forests connected them to something larger and dynamic, which they could never know completely.

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Appendix A | Interview Script

| Main Questions: | Probe |
|--|---------------------------------|
| <ul style="list-style-type: none"> To start out with, imagine if you were talking to an old friend who you hadn't seen in a while and you were to describe to them: what your forestland means to you, in what way you value it or what it signifies to you ...what would you tell them? | Meaning, Values |
| <ul style="list-style-type: none"> How did you first come to own this property? <ul style="list-style-type: none"> <u>Follow up</u> for family legacy: How did it come to be in your family? Thinking back to when you actually inherited the property, can you describe some of the thoughts or feelings you had then <u>Follow up</u> for new owner: Thinking back to when you made the decision to buy forestland, what were the things that motivated you? Can you describe some of the thoughts or feelings you had then? | Meaning, Values, Vision |
| <ul style="list-style-type: none"> Since the first time you made the decision to buy this property /inherited your property, how have your expectations evolved? <ul style="list-style-type: none"> What caused them to change? What are some of the challenges or difficulties you faced in realizing some of your goals? Is there any information that you would have found useful or would still find useful in helping you realize your goals? | Compatibility, Vision, Efficacy |
| <ul style="list-style-type: none"> After you moved in, how did you get to know your land? How did you come to make it your own? | Understanding, Attachment |
| <ul style="list-style-type: none"> What would you say are some of the possibilities that you imagine for your property? Are there any things that you consider NOT to be possible? | Vision |
| <ul style="list-style-type: none"> If you were ever to leave this place, what do you think would be some of the things that you would miss? Are there any things that you wouldn't miss? | Meaning, Value Attachment |
| Prepare for going out: Before we start walking... | |
| <ul style="list-style-type: none"> What are the types of things that you do to improve your forest? | Stewardship |
| <ul style="list-style-type: none"> Are there any things about your land that evoke certain memories or associations? | Imagination, Memory, Attachment |
| <ul style="list-style-type: none"> Are there any places or qualities about your land that you really enjoy, that are special to you or hold special significance | Attachment, Restoration |
| Start Walking: | |
| <ul style="list-style-type: none"> Shall we go and look at some of the things you have been telling me about? Can you show me some of the places that are special to you and talk a little bit more about what makes them special? | |
| Conclusion: | |
| <ul style="list-style-type: none"> Thanks so much, I really enjoyed talking to you about your place Is there anything we missed? Anything else you think I should know? | |

Appendix B | First Cycle Coding based on RPM

Model Building

- **MB-MV:** Model Building-Meaning and Value (what does their land mean to them, what do they value about it)
- **MB-UN:** Model Building-Understanding (how did they come to know their property)
- **MB-IM:** Model Building-Imagination and Memory (personal associations)

Being Effective

- **EF-CO:** Effectiveness -Compatibility (compatibility issues, how does their land or their experience differ from what they imagined or would like it to be)
- **EF-LE:** Effectiveness-Learning (coping strategies, problem solving, what have they learned)
- **EF-AB:** Effectiveness-Ability (what gives them confidence, what enables them to accomplish their visions, what hinders them and makes them feel ineffective)
- **EF-FE:** Effectiveness-Feeling (What contributes to / detracts from feelings of well-being)

Meaningful Action

- **MA-VI-Y:** Meaningful Action-Vision-Possible (What do they consider possible)
- **MA-VI-N:** Meaningful Action-Vision-Not Possible (What do they consider not to be possible)
- **MA-ST:** Meaningful Action-Stewardship (How do they envision their role relative to the forest land)

Attachment

- **AT-GE:** Attachment-General (General feelings of attachment)
- **AT-OW:** Attachment-Ownership (How did they make their property their own)
- **AT-MI-Y:** Attachment-Miss (What would they miss)
- **AT-MI-N:** Attachment-Not Miss (What would they not miss)
- **AT-SP:** Attachment-Special (Feelings that their property is special, places they consider special)