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The Meaning of Natural Environment Occupations: Exploring the Experiences of Sierra Club Members

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The meaning of natural environment occupations:
Exploring the experiences of Sierra Club members.

by

Tulin Roselynn Ture

Thesis

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School of Health Sciences

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in

Occupational Therapy

Thesis Committee:

Elizabeth Francis, PhD, OTR, Chair

Judy Olson, PhD, OTR

Kathy Siler, MS, OTR

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Abstract

Poets and writers have long lauded the beauty and necessity of nature. More recent literature and research has provided support for the healthful benefits of the natural environment. This literature spans the breadth of many disciplines. Yet, very little occupational therapy literature focuses on the natural environment. This is somewhat surprising given occupational therapy's focus on space and place.

This thesis explores the experience of participation in natural environment occupations by adult members of the Sierra Club. Five Sierra Club members were interviewed and two local Sierra Club outings were observed. Qualitative data analysis revealed two major themes: childhood beginnings and adult values, and positive health benefits. This research adds to the paucity of occupational therapy literature on the natural environment and sheds light on the various benefits of natural environment occupations.

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The meaning of natural environment occupations: Exploring the experiences
of Sierra Club members.

Introduction

“Climb the mountains and get their good tidings.
Nature’s peace will flow into you as sunshine flows
into trees. The winds will blow their own freshness into
you, and the storms their energy, while cares will drop
off like autumn leaves.” --John Muir (1901, p. 56)

There is something wonderful about the feeling one gets when walking in the woods, working in a garden, or canoeing down a river. All senses are awake and alive, minds are free of stressful thoughts, and attending is effortless. For years, acclaimed writers and poets have lauded the beauty and necessity of being in nature (Frost, 1923; LaBastille, 1976; Thoreau, 1950). More recent research and literature supports the healthful benefits of the natural environment. This literature spans the breadth of many disciplines, such as education (Rivkin, 2000), social sciences (Cohen, 1993; Kaplan, 1995; Zapf, 2005), health sciences (Brawley, 2002; Cox, 1995), and architecture and landscaping (Ulrich, 2003). The evidence they present can be quite compelling in its support for the healthful benefits of nature. In spite of these benefits, today more than ever, we spend little time in the outdoors (Clements, 2004).

Furthermore, there is a dearth of literature published in the occupational therapy journals on the topic of the natural environment context and natural environment occupations. This is interesting since occupational therapists place emphasis on the importance of space and place (Hasselkus, 2002). For the purposes of this study, the term *natural environment* is defined as a non-urban area with a vast array of nature, including but not limited to forests, mountains, prairies, meadows, marshes, dunes, rivers, and/or bodies of

water. In order to understand the myriad benefits of the natural environment discussed in the literature, I will present a brief review from various disciplines.

Literature Review

Education

Education literature surrounding the benefits of the natural environment has come from early childhood education journals (Rivkin, 1997) as well as outdoor education (Yaffey, 1992) and health education journals (Breitenstein & Ewert, 1990). Rivkin (1997) notes that children are multisensory beings who benefit from the richness and variety of natural settings. She reports that being outdoors contributes to brain development, function, gross motor skills, and reading and writing skills due to the wide range of sensory stimulation and large variety of permitted behaviors. Rivkin (1997, 2000) argues that children are losing their natural habitat to urbanization, industrialization, decreased ability to supervise, increased safety concerns, and television. She advocates, “Playspaces for children of all ages need to be more than playgrounds. They should be ‘habitats’—places where children can live” (Rivkin, 2000, p. 5). Clements (2004) published research looking into children’s outdoor play participation as compared to the previous generation’s outdoor play. She surveyed 830 mothers regarding their childhood play experiences and their children’s play experiences. She found that children today spend significantly less time playing outdoors than their mothers did. Reasons for this were indicated as increased use of television and computer games and concerns about crime and safety.

Yaffey (1992) conducted a study on outdoor adventure activities and their influence on self-actualization. Self-actualization is defined as the process of fully realizing one’s potential (Merriam-Webster Inc., 2003). Yaffey administered the Personal Orientation Inventory, a self-actualization measure, to outdoor adventure instructors as well as to a student group before and after attending an outdoor adventure course for twelve days. He

found that the students' scores, after participating in the course, were significantly higher than their scores before taking the course.

A connection has also been made between the idea of "flow" and outdoor adventure education (Boniface, 2000). Flow or optimal experience is attained when challenges are matched with personal skills and one experiences a narrowing of attention, becomes lost in the activity, and loses awareness of time (Csikszentmihalyi, 1993). Csikszentmihalyi suggests that flow experiences lead to important long term benefits contributing to health and well-being. They "are the kind of experiences that focus our whole being in a harmonious rush of energy, and lift us out of the anxieties and boredom that characterizes so much of everyday life" (p. 1). Boniface presents the argument that outdoor and adventure activities can lead to this state of "flow."

Breitenstein and Ewert (1990) published an article designed to give health educators information on the positive effects of outdoor recreation. They discuss the various emotional, social, physical, intellectual, and spiritual health benefits. The emotional benefits discussed included decreased anxiety, relief from stress, and self-actualization. The authors cite cardiovascular health, orthopedic health, and the maintenance of preferred weight as the physical benefits. The social benefits included increased compassion, cooperation, and respect, and improved communication skills. The authors provide health educators with suggestions for incorporating outdoor recreation into their programs.

Social Sciences

Environmental psychology. Much literature has been published on attention restoration theory and its relation to natural environment experiences (Hartig, Mang, & Evans, 1991; Kaplan, 1995). Kaplan (1995) distinguishes between directed attention, which

is voluntary and requires effort, and fascination; which is involuntary. He suggests that prolonged directed attention can lead to mental fatigue and that periods of fascination can restore our ability for directed attention. Kaplan further describes the characteristics of a restorative environment as being away or conceptually being in a new place, having extent or other-worldliness, and being compatible with what one intends to do. Most natural settings meet the requirements for a restorative environment and thus can aid in reducing fatigue and renewing directed attention abilities.

Hartig and colleagues (1991) conducted a quasi-experiment and a true experiment exploring and supporting the restorative capacity of natural environment experiences. These authors found that backpackers had improved scores on a proofreading task after completing a backpacking trip as compared to a non-wilderness vacation group and a no-vacation control group. Both of the latter two groups exhibited a decline in their proofreading scores. They also found that a group of walkers in a natural environment had higher ratings for happiness, positive affect, and higher measures of mental fatigue recovery than a group who walked in an urban environment and a group who participated in passive relaxation.

Counseling. Cohen (1993) argues that humans are born with 53 natural senses that become injured when societies disconnect from the natural world. He recommends that counseling take place in natural environments and include nature activities to improve the counseling process. He states, “Our biological and emotional relationship to the natural world is like our leg’s relationship to our body. We are one” (p. 40). He continues, “Our troubles result from subdividing, alienating or killing our natural love to be natural” (p. 43).

Social work. Zapf (2005) wrote an opinion piece on the person-in-environment perspective that has lately been popular in the social work literature. He admonishes the

profession for focusing too much on the person and not enough on the general environment. He discusses literature from Aboriginal social work and writes, “Perspectives from traditional knowledge could be a key to expanding our understanding of the person/environment relationship, the profound connections between ourselves and the world around us” (p. 634). The natural environment is an important component in Aboriginal social work, and Zapf encourages the social work profession to realize the natural environment’s connection to spirituality.

Architecture and Landscaping

Extensive research and literature has been published in the therapeutic landscaping and architecture journals on the therapeutic affects of nature. Architecture can allow for better views of nature and greater natural light from inside structures while landscaping can provide the nature for viewing. Roger Ulrich (1992) has written extensively on the impact of hospital design on wellness. In 2003, he conducted a study in which blood donors watched television scenes of either nature settings or urban settings. The study concluded that pulse rates were lower for those watching nature scenes (Ulrich, 2003). In another study, Ulrich (1984) reported shorter hospital stays, fewer medication requests, and signs of higher emotional well-being from patients whose window offered a nature view as compared to those whose window overlooked a brick wall. Ulrich (1992) suggests that nature is restorative and can positively impact the health and recovery of hospital patients. He recommends that hospitals provide contact to social support, a feeling of control, and positive distractions, including nature.

Another interesting study analyzed findings from an employee satisfaction survey given at a medical hospital. The hospital had recently been rebuilt in a new location with

several new features such as an atrium and a courtyard with water feature. The researchers found that 43 percent of staff indicated the increased natural light had a very positive effect on their work life, and 28 percent of staff rated the water features as having a very positive effect on their work (Mroczek, Mikitarian, Vieira, & Rotarius, 2005). Exposure to natural light has also been implicated in improving sleep-wake cycles (O'Connor & Youngstedt, 1997) and bone density from vitamin D absorption (Glerup et al., 2000). In response to this compelling research, the hospital industry is starting to take notice. Many prominent hospitals are now being built or remodeled with nature in mind (Belli, 2005).

Site specific gardens are also being created such as memory gardens designed to decrease confusion and encourage reminiscence for patients with Alzheimer's disease (Beal, 2004). Richard Bloch has designed parks for people fighting and surviving cancer. The parks are filled with inspirational plaques, sculptures, and nature and are designed to give people hope and a positive mental outlook (Ewan, 2003).

There is also a body of literature on the need for plants and trees in urban environments (Baines, 2000; Fisher, 2000; Jones, 2001). The researchers cite climate modification, better air quality, reduction of daily stress, encouragement for physical activity, and shade from ultraviolet rays (Baines, 2000; Fisher, 2000; Jones, 2001) as some of the major benefits to having plants and trees in urban environments. The literature and research from the landscape architecture community provide compelling evidence and argument for the beneficial effects of a natural environment context.

Therapeutic Gardening

Much literature has also been published in the field of therapeutic gardening. Although gardens are not necessarily always in the natural environment and are constructed

by human hands, they do have elements of nature settings and may be considered one form of natural environment occupation. Large gardens may be located in very rural places and urban gardens may afford people with their only sliver of nature for miles around. It is recognized here that although gardening is not the specific focus of this study, it does share qualities with natural environment occupations.

Relf (1981) reports that gardening is “one of the oldest healing arts” (p. 1). She describes gardening as having the ability to encourage interaction (social relationships), action (physical activity), and reaction (passive experiences). In a mixed methods study, Heliker, Chadwick, and O’Connel (2000) studied the meaning and outcome of a gardening project on a group of diverse elders. Statistically significant improvement in well-being was discovered as well as themes of legacy, spiritual healing, and remembrance of a favorite tree. Pachana, McWha, and Arathoon (2003) along with Brawley (2002) extol the benefits for therapeutic gardens in extended care facilities, citing such improvements as increased time spent in areas nearby the garden, increased physical activity, and improved mood. Unruh, Smith, and Scammell (2000) undertook a qualitative study on the meaning of gardening for three women with breast cancer. Themes discovered included the importance to participants of being outdoors, interacting with living things, increased coping skills, and reflecting about life.

Occupational Therapy

As an occupational therapist and a person who values time spent in the natural environment, I often notice how little time my older adult nursing home clients spend in nature and simply outdoors. The older adults have physical difficulty getting outside and are not provided with access to natural environments. I have also noticed this to some extent

when working with children. The children spend most of the school day inside, sitting in chairs, and many spend their at-home time staring at a television screen or computer monitor. I often wonder what effect this lack of natural environment occupations has on them. Cox (1995) wrote a brief commentary on humans' need for the natural environment. She suggests that we are biologically suited for the natural environment instead of the processed food, polluted air, and fast-paced lifestyles we are subjected to today. Cox also mentions many benefits stemming from spending time in nature such as physical, psychological, social, and spiritual health, as well as living a balanced life with purpose. As occupational therapists we often talk about the need for balanced and purposeful occupations and their influence on well-being. Cox suggests that occupations involving the natural environment are holistic in that they meet a wide array of our health needs.

Birch (2005) used a qualitative study to explore the experiences of three adults participating in the Green Gym Scheme. This British scheme encourages fitness through participation in conservation volunteering activities, such as community gardening and woodland trash cleanup. From interviews and participant observation with adult Green Gym members, Birch found themes of physical and mental health benefits, stimulation from nature, a sense of achievement, low pressure, and social benefits. Occupational therapy literature also includes information on adapting outdoor and gardening activities for adults and children with disabilities (Greenstein, 1993). However, the bulk of this literature does not focus on the broader idea of the benefit of the natural environment, but merely on ways to adapt particular activities for those with disabilities.

Although there are some writings on therapeutic gardening in the occupational therapy journals (Unruh et al., 2000), other than the two studies highlighted above, I have

been unable to find other literature exploring the broader natural environment context. I find this surprising, considering occupational therapy's emphasis on the importance of context, space, and place.

Space and Place

One of the tenets of occupational therapy is that we cannot ignore the influence of the environmental context when seeking to understand a person. Although not an occupational therapist, social geographer and gerontologist Graham Rowles (2003) wrote about the profession in exploring issues of space and place. He notes, "...there is growing realization that the self is in and of rather than separate from the individual's environment and that lives are intimately and inextricably immersed in place" (p. 111). Place is distinct from space by holding memories of personal experiences, while space is "a larger, more abstract and more neutral entity" (Hasselkus, 2002, p. 27). Space becomes place when personal experiences happen there, creating memories (Hasselkus, 2003) or, as Rowles (2003) wrote, "The *spaces* of our life become transformed into the *places* of our life through a variety of physical, cognitive, emotional, and imaginative processes or habitation that imbue existence with meaning and personal significance" (p. 115). When we talk about the natural environment, space would be a forest or lake until one went camping there each summer and then perhaps it would become a place as memories were formed.

Occupational therapy scholarly literature emphasizes the importance of the home environment as place (Hasselkus, 2002; Rowles, 2003). This makes sense as we spend much of our lives in our home environment, and for many of us, it is a place of safety we can return to. In addition, research exists on the physical aspects of space and how it can positively or

negatively influence engagement in life (Rowles, 2000; Seamon, 2002). Seamon (2002) writes:

I argue that the physical and spatial environment—in being made one way rather than another, particularly in terms of pathway layout—plays a potential role in where people go and how many and what kind of physical interactions they have with other people in their immediate place....In short, there is a mutual support at the level of body and world that, in terms of habit, allows the physical environment to be both a taken-for-granted support and a source of interpersonal stimulation and exchange (p. 42S).

With all of this emphasis on space and place and the myriad literature supporting the benefits of the natural environment, it is interesting that there is a paucity of occupational therapy literature on the natural environment. In addition, the concept of occupation is also of great importance to the field of occupational therapy. Not only is the environmental context important, but also the occupations we choose to engage in within those environments. Since occupation is central to occupational therapy and occupational science, a brief description of occupation is provided here.

Occupation and Meaning

In occupational therapy theory, we often talk about occupation, meaning, and the meanings of particular occupations to individuals. Occupation has been defined as Activities...of everyday life, named, organized, and given value and meaning by individuals and a culture. Occupation is everything people do to occupy themselves, including looking after themselves...enjoying life...and contributing to the social and

economic fabric of their communities... (Law, Polatajko, Baptiste, & Townsend, 1997, p. 32 as cited in American Occupational Therapy Association, 2002)

An occupation can be anything from swimming to brushing one's teeth, and the same occupation can hold a different meaning for each individual engaging in it. Hasselkus (2002) describes the connection between meaning and occupation: "Occupation is a powerful source of meaning in our lives; meaning arises from occupation and occupation arises from meaning" (p. 14). She suggests that "...occupation becomes, by definition, the vehicle for creating meaning in the occupational therapy context of care" (p. 14). Hasselkus also notes that "occupations of our lives and the meanings of those occupations are essential contributors to the pace and direction of the life flow" (p. 2). It is therefore important to this study to understand the nature of natural environment occupations, their individual meanings, and the influence this type of space has on well-being. For the purposes of this study, natural environment occupations will include canoeing, camping, hiking, kayaking, cross-country skiing, bicycling, and backpacking and will be explored through participation in and interactions with members of a local chapter of the Sierra Club.

The Sierra Club

The Sierra Club is a grassroots environmental organization founded in 1892 (<http://www.sierraclub.org/inside/>). The mission of the Sierra Club is

To explore, enjoy and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystem and resources; to educate and enlist humanity to protect and restore the quality of the natural and human environment; and to use all lawful means to carry out those objectives

(<http://www.sierraclub.org/101/3.asp>).

Local chapters of the Sierra Club have outing clubs where members participate in planned nature outings such as hikes, bicycle rides, and rafting trips

(<http://www.sierraclub.org/101/6.asp>).

Purpose Statement and Research Question

The purpose of this phenomenological study is to explore and understand the experience of participation in natural environment occupations by adult members of the Sierra Club, Central Michigan Group. It is my intention that this insight into individuals' participation in natural environment occupations will help inform the Occupational Therapy profession of the benefits and usefulness of the natural environment in therapeutic practice as well as in individuals' everyday lives. I hope that this study will help add to the body of Occupational Therapy literature on space, place, and meaning and the benefits of the natural environment. This study seeks to answer the question: What is the experience of adult Sierra Club members' participation in natural environment occupations? This study further asks: What is the meaning of natural environment occupation? What is the influence of the natural environment on well-being?

Method

This phenomenological study seeks to understand the experience of natural environment occupations by adult Sierra Club members. This study aims to delve into the meaning of natural environment occupations and their influence on participants' lives. The phenomenological approach was chosen because it is designed to uncover the shared meaning of a phenomenon as experienced by several people (McCaslin & Scott, 2003). In this case, the phenomenon is natural environment occupations and the people experiencing it are the adult Sierra Club members.

Participants

Participants for the study were recruited from the Sierra Club, Central Michigan Group. Criteria for selection were active Sierra Club membership for at least one year, age range of 21 to 70 years, self-identification as a natural environment enthusiast, and participation in natural environment occupations, at least one day a month. Initial contact with the Sierra Club, Central Michigan Group began prior to this study's proposal development. I attended a monthly Sierra Club meeting and briefly described my interest in interviewing members for the purpose of completing my master's thesis. At that time, I concluded there was a large enough pool of possible participants to select from, and several members expressed a preliminary interest in participating. After proposal and human subjects approval was obtained, I attended a second Sierra Club meeting where I set up an interview with one member and got contact information from another. Once these two interviews took place, snowball sampling was used to solicit three more participants, providing a total of five participants. Two of the participants are married to each other. All five participants were

Caucasian and had been Sierra Club members for ten to thirteen years. Demographic information is located in Table 1. All participants have been given pseudonyms.

Table 1

Demographic Information

| Name | Age | Education | Employment | Family Status |
|---------|-----|---------------|----------------|-------------------|
| Debra | 41 | Graduate | Library Clerk | Married, 1 child |
| Carrie | 29 | Undergraduate | Coordinator | Married |
| Stella | 36 | Graduate | Professor | Married, 1 child |
| Richard | 43 | Graduate | Professor | Married, 1 child |
| John | 54 | Associate | Graphic Artist | Divorced, 1 child |

Informed Consent

Consent forms (see Appendix A) were reviewed with each individual participant in the study. Each participant was apprised of the purpose of the study, the procedures to be used, the length of time the procedures would take, and the risks and benefits to them. Written consent was obtained. Each participant received a signed copy of the consent form.

Confidentiality

Actual names of participants appeared only on the signed consent form and a single log sheet that assigned the participant a study number. These forms were kept separately from all other documents in a locked file. The digital recordings were saved to a memory key and kept in a locked file along with field notes, separate from consent forms and log sheet. The saved digital recordings, log sheet, field notes, and signed consent forms will be destroyed one year from the last interview date.

Data Collection

Data collection consisted of semi-structured interviews and participant observation. Each participant was interviewed for a minimum of thirty and a maximum of seventy minutes. Each interview began with a brief collection of demographic information. Participants were asked their age, education level, type of employment, and marital status. Then, introductory questions were asked based on the interview protocol (see Appendix B). More focused and clarifying questions were asked as the interview progressed. At the end of each interview, the participants were asked if they had anything else to disclose. All participants agreed to answer any follow-up questions during the duration of the study, if needed.

The interviews and locations for them were scheduled at the participant's convenience. Interviews were audio recorded using a small digital device and were conducted in two coffee shops, one participant's home, and two participants' offices. Follow-up questions were asked of each participant via e-mail and were responded to by four out of five participants. In addition, the researcher participated in two Sierra Club outings. These outings took place in two different local parks and consisted of nature walking and hiking. Both outings lasted approximately two hours each. Field notes and personal reflections were recorded after each outing in a research notebook.

Data Analysis

The interviews and observations were transcribed verbatim by this researcher. Once transcribed, they were read and re-read by the researcher to get a general sense of the ideas. Then the transcriptions and observations were coded by looking for and identifying shared ideas or themes (Creswell, 2003). Van Manen (1990) describes phenomenological themes as

“...the experiential structures that make up that experience” (p. 79). The process of uncovering these themes from the text began by identifying ideas within the interviews pertinent to the research question, known as the selective approach (Van Manen). Each idea or chunk of text was physically circled on the text and then given a label with a short descriptor and, when possible, taken right from the text. Each label served as a code and was given a number. As the codes accumulated, they were tracked on a separate page with their number and a description. As each transcript was coded, recurrent codes became apparent. Recurrent codes were given the already existing number and label. Once all of the transcriptions were coded, a final tally of recurrent codes took place. At this point, codes that appeared to be part of broader categories were grouped together under headings. Then it became necessary to identify which categories were essential and which were incidental (Van Manen). Incidental categories are those that are not unique to the experience. Essential categories are those that if removed would change the experience or phenomenon. Once incidental categories were identified, they were eliminated. With further reflection, the remaining categories fit nicely into two broader themes.

Credibility

Credibility is described as the trustworthiness of the research (Glesne, 2006). In order to ensure that the results of this study were credible, several methods have been employed. One of these was member checking. Member checking involves presenting the final themes to participants to see if they feel they are accurate (Creswell, 2003). The final themes in this study were e-mailed to all 5 participants to see if they felt they were accurate. Two of the five participants responded to the e-mail and indicated that the themes accurately represented their thoughts and experiences. Also, method triangulation was used by utilizing data from

the interviews as well as data from the participant observations “to build a coherent justification for themes” (Creswell, p. 196). Peer debriefing with a thesis committee member occurred as well. Three of the transcribed interviews were read by a committee member along with the list of codes. The committee member checked to ensure that the codes were consistent with transcript data and challenged me to look at the data from a different perspective. Another technique used for ensuring trustworthiness is using rich, “thick description” (Glesne, 2006, p. 27) of the participants and my observations when writing. Care has been taken to use the participants’ own words as much as possible in the written results. This provides evidence for how themes and conclusions have been drawn. Any discrepant information or unique discoveries were also included in the written findings. To further insure credibility, my personal perspective is clarified here.

Personal perspective

Qualitative research is not free from subjectivity; in fact, “subjectivity, once recognized, can be monitored for more trustworthy research and subjectivity, in itself, can contribute to research” (Glesne, 2006, p. 119). It is therefore important for me to include my personal background. My interest in the natural environment stems from my experiences as a child. I was raised with many natural environment experiences such as gardening, camping, backpacking, cross country skiing, and canoeing trips. I also enjoyed attending week-long overnight summer camps in wooded and rugged settings. As an adult, I have come to rely on the natural environment to refresh and restore my energies, to work through life’s problems, and most of all to provide highly stimulating vacation spots. The natural environment is hugely important to me and I seek out these experiences whenever and wherever possible.

As an occupational therapist, I often notice my patients' lack of engagement in natural environment occupation. Many patients often speak about their younger years when they enjoyed gardening, fishing, or camping. Most of them, however, no longer have access to the natural environment or have opportunities to engage in suitable natural environment occupations. It is this personal perspective that has fueled my desire to conduct this research.

Results

Before describing emergent themes, it is helpful to take a look at the natural environment occupations the participants engaged in. This information allows us to see the diversity of natural environment occupations and the most common and least common occupation mentioned. Table 2 shows each occupation and the number of participants who mentioned participating in it.

Table 2

Natural Environment Occupations

| Occupation | Number | Occupation | Number |
|----------------------|--------|-------------------|--------|
| Walking | 4 | Snowshoeing | 1 |
| Camping | 4 | Rollerblading | 1 |
| Hiking | 4 | Triathalons | 1 |
| Canoeing | 4 | Birding | 1 |
| Trips | 4 | Exploring | 1 |
| Kayaking | 3 | Rock Climbing | 1 |
| Backpacking | 2 | Mountain Climbing | 1 |
| Biking | 2 | Swimming | 1 |
| Cross Country Skiing | 2 | Snorkeling | 1 |
| Running | 2 | Boating | 1 |
| Lounging/Hanging Out | 2 | Fishing | 1 |

As you can see from Table 2, the most commonly named natural environment occupations were camping, walking, hiking, canoeing, and trips. Four out of five participants

indicated partaking in each of these natural environment occupations. Snowshoeing, rock climbing, snorkeling, and triathalons were some of the less common natural environment occupations.

Two major themes emerged from the data: positive health benefits and childhood beginnings and adult values. There were three different subthemes or aspects to positive health benefits, which were the social, physical, and mental health benefits. Childhood beginnings included subthemes of the physical and social context of childhood as well as seminal childhood experiences, conservation, and adult self-perception of an active person who cares about the world. Table 3 summarizes the themes and subthemes.

Table 3

Themes and Subthemes

| |
|---|
| 1. Positive Health Benefits |
| Social Health: <i>Bonding</i> Physical Health: <i>Desire to be Active, Better Workouts, Stimulation</i> Mental Health: <i>Relaxation, Restoration, Positive Emotions, Being in the Moment</i> |
| 2. Childhood Beginnings & Adult Values |
| Childhood Physical Context Childhood Social Context Childhood Seminal Experiences Self-Perception as an Active Person Who Cares about the World Conservation |

Positive Health Benefits

The participants spoke of various health benefits they received from their natural environment occupations. The social health benefit mentioned was bonding with loved ones and friends. The physical health benefits included a desire to be active in the natural environment, a more satisfying workout in the outdoors, and desirable stimulation. The

positive mental health benefits mentioned were myriad, such as relaxation, restoration, being in the moment, and positive emotions.

Social health benefits.

When speaking about their natural environment experiences, initially, three participants mentioned the social connection or bonding that resulted from their natural environment experiences. Follow-up questioning of all the participants further illuminated this theme. Carrie initially said:

...if you're doing with a group, you kind of bonded with the people that you were there with so that's always a good thing, I think there's a disconnect with people these days as well and sort of meeting new people and bonding, I think that's good as well.

Stella spoke of the natural environment serving a bonding function for her family and how important going on hikes and "family runs" is to her family. Upon follow-up questioning, John indicated that bonding was not something he sought out from his nature experiences but that it was a result of some of them. He spoke of birding with his friend, saying "That's the only thing we do together is the birding but uh, we do talk quite a bit, we do some bonding...and then I went skiing with my brother last Christmas and then that was pretty good bonding." Debra did not think that bonding necessarily occurred with everyone but that "people who are already close often deepen their relationship through the outdoors."

When asked why the natural environment could help people to bond, the participants spoke of common goals and freedom from everyday distractions. Stella wrote:

...we are free from all of the normal distractions of our lives –no cell phones, TV's, toys, videos etc. It lets us have a break from those things and focus on each other. It

also forces us to find ‘natural’ sources of amusement –like teaching our son how to whistle with acorn tops...

Carrie wrote:

When we are in the environment we are all equal in our situation and have the same goal...they are trying to hike, bike or ski a trail. We are trying to accomplish this goal together. Generally our resources will be the same as well, water, food. Being together in this raw form it is easier sometimes I think because the things that may stand in the way like jobs, family, won't necessarily be factors.

Debra said, “I think it’s because the outdoors naturally heightens your senses and lets you forget petty annoyances – so you enjoy yourself more and appreciate the positives of the people you like and love.” It is clear the bonding is something, for these participants, which can be facilitated by natural environment occupations.

Physical health benefits.

All participants described the stimulation that nature provided to their senses. Stella compared working out in a gym to working out in nature as a difference in stimulation. She said, “It’s just a completely different experience...from a stimulus perspective you just see so many more things.” John described the visual stimulation he experiences as

...the biggest factor of all is just...the visual input...the trees, flowers, water, somehow that, with the way my vision works it just...pleases me, it just tickles me, makes me smile...it just sort of resonates, the colors.

Carrie described sitting by the water as “sitting on the grass, and the wind in your hair, and smelling the water and seeing the water.” These statements speak to the increased or special stimulation felt by the participants when in natural environments.

Many of the participants reported that physical activity was one of their reasons for liking the natural environment. Stella commented, “Well, I do a lot of it just because I like to, I’m very physical. I like to have outside workouts.” When describing why he likes the outdoors, John said, “Another factor is the exercise, like when I’m cross country skiing, it’s good aerobic exercise.” Debra noted, “I’m not the kind of person who can exercise in a gym and feel like I’ve really done much... I really need, like just fresh air for some reason.”

Richard spoke of his dislike for treadmills and said

...I don’t like the whole idea of sitting like a squirrel on a wheel...I like to go places, I like to go out and see you know, I need to get out there and breathe the air um, and get my body going.

When asked if they preferred to get their exercise outdoors, four participants said yes.

Stella’s reason for this was that

...there’s so much to kind of take in that’s part of the experience when you’re working out outside...there’s so much more variety of terrain and so much more you can do outside...I find it’s easier for me to lose myself in just running along or hiking along.

Debra gave this reason:

I think when people try to exercise in their everyday environment they always have to push themselves...it’s like to get the job done you have to...it seems like it takes a lot of discipline to keep up your regimen and everything but when you get out in a really great place...it doesn’t seem to take, you know, it seems like you’re a kid again...you don’t think about exercise as...ok 40 minutes and I’ll be done you know, it’s like you just do it because you want to get somewhere, you want to see something and it’s

much easier and I think people end up working their bodies a lot harder than they're even aware of.

John commented on his preference for working out in nature, observing,

I work out everyday so and most of my workouts are in the hideous Y over here, the TV's and the noise it just, it's really not that pleasant. I get my workout though, but if I'm getting my, you could call it workout, in a natural environment that has visual beauty and not too much human input, those are my best experiences because you've got the physical thing going on with the endorphins you know, the elevated heart rate and that sort of thing, more oxygen, plus you know stopping now and then when I'm at a top of a hill skiing just to look at the [view], when the snow has turned red at sunset...

One participant, Carrie, responded that she enjoyed both indoor and outdoor workouts but that outdoor workouts were more natural.

I mean you're doing more natural stuff. People weren't designed to go to the gym you know, and to do the things that we people do in the gyms. So, actually being out in nature, you're doing what people are supposed to be doing as opposed to synthetic [exercise] which is what the gym is you know, synthetically working out because we don't live in huts anymore so...we're less active in that sense.

Mental health benefits.

All participants mentioned various positive mental health benefits they gained from being in the natural environment. Some of the benefits noted were the relaxation they felt in the natural environment and the restorative effects after the spent time in the natural environment. Other benefits were described as feeling more positive and in the present

moment. These mental health benefits were given strong emphasis by the participants and were usually the first things they mentioned when asked about the impact the natural environment had on them.

Relaxation or a calming feeling was described by the participants as something that they felt when participating in natural environment occupations. Stella said,

for me being in nature or natural spaces is very calming and sort of, I can stop thinking about stuff...so when I'm outside and particularly when I'm someplace where it's, you know, there's no traffic and there's none of that kind of stuff it's very meditative for me I guess and it can be just sitting or it can be running or swimming or biking or whatever but I just, I find it very calming.

Carrie, too, used the word *calming* to describe the effect of the natural environment.

I think it's a calming aspect of it really. I can remember one time, and this probably happens multiple times, but just one time in particular, I was just really very tense and...I don't know if [I] was just not having a good day or what...but when I got outside I started hiking. I was actually at a nature center at the time...[and] I could just literally feel myself just, you know, decompress.

Debra talked about dropping "off all those anxieties or worries that could ruin things." John spoke of the city and how it "wears me out, even this little city like this, so when I can get away and just relax, get some solitude and peace and quiet that's pretty important."

Four of the five participants noted that the calming effects lasted beyond the original experience, leading to a feeling of restoration. Debra noticed that when she came back from a camping trip she would feel

...reinvigorated...you definitely feel like for at least a day or two days that you can get your chores done without a lot of hassle, you can take care of things, make phone calls, whatever you need to do. It's just not as much of a drag to do anything, it's like 'oh sure, I can get that done' and it seems like you, you know, you come back with a better, more efficient sort of smooth way of thinking.

John noted that the calming effects would carry over if the natural environment experience were a "longer term thing" or more physically active. Stella said,

I think that definitely, you know, having those kinds of experiences helps me get my fix for a while, so to speak...you know like if [I take a] long hike I can always, if I do it on the weekend I don't have to do it for a week...where you have that kind of lasting kind of calmness that goes with that experience.

Four out of five participants described being in the moment or being fully present without thinking about other non-related things. Carrie said,

...it's just sort of a time to just not think about...all the other things that you know we have in our daily lives, I mean, even just the walks from here down to get some lunch...is a download time for me.

She also noted, "You know like when you are out by the water, sitting by the water and you're just looking, not thinking about anything else." Debra observed, "While you're there, you're just in the moment, you're just kind of enjoying it." Stella spoke of her very cognitive job and needing to "get outside" of her head.

...if I go for a long hike I can literally go for [a] two, three hour hike and never think about anything, just kind of look around, not use my brain, not have to do anything

but just focus on what I'm looking at around me...so for me it's more, it serves a very meditative kind of escape function.

John felt that it took a more physically active natural environment experience for him to be in the moment.

...when I'm really working out I've got everything elevated. Then I'm not thinking so much, I'm much more focused on the present and maybe that's what I'm trying to achieve with all of my natural experiences is being in the present.

Participants also spoke of the positive emotions they experienced while participating in natural environment occupations. Richard described the feelings he usually gets with his morning runs in nature, "like the promise of the day or something, it's wonderful, and I feel usually good to be alive." Carrie described the feeling she gets in natural environments as simply, "very, very, good" and "you just feel better." Debra described her feelings once she gets out in nature as "everything feels good, everything feels right." Stella described how she felt while participating in natural environment occupations. She said, "during I'm always very...happy." These statements speak to the positive emotions often experienced by these Sierra Club members during natural environment occupations.

Childhood Beginnings and Adult Values

All of the participants spoke of various childhood experiences, the environments they grew up in, and their early relationships that influenced their development of a love for the natural environment. They also spoke of their value of conservation and how their natural environment occupations help them to see themselves as active people who care about the world.

Childhood physical context. Four participants specifically mentioned the physical environment they grew up in as an important factor. Debra “used to spend summers at the beach...so the ocean was kind of our second home.” Another participant, Carrie, grew up in an agricultural community and spoke of the opportunities that allowed her to be outside. She observed that, “Less than a mile down the road, we grew up next to a county park that we were always at.” Richard grew up at the edge of a development and fondly remembers it as:

...wonderful as a kid because you could ride your bike to the end of the neighborhood and then you’d be on a dirt road and the dirt road would lead to the woods uh, and who knew what was back in the woods.

He also mentions other natural areas near his home such as “a place we called the plateau which was an elevated field and there was a pond behind our house.” From these statements it is clear that childhood environment played an important role in these participants’ love of the natural environment.

Childhood social context. All participants spoke, also, of an influential person in their childhood who somehow helped to foster their love of nature. Debra’s mother was a strong influence in her love of the natural environment. She spoke of her, noting, “She’s just got this natural attraction to the outside which I think has carried over with me.” Richard and Carrie both spoke of their parents telling them to “go out and play and don’t come back until...” This forced them to be outside. Stella mentions her mother’s influence, observing that, “She did a lot of camping and hiking and stuff...so she always took us out.” John spoke of his Uncle Bob who “was a big fisher and...got me out fishing and to his [hunt] camp.”

Childhood seminal experiences. Besides day-to-day experiences with nature in their neighborhoods, the participants spoke of seminal experiences that helped to solidify their love of the natural environment. Richard described a trip he took when he was 15 years old:

...part of my family, we all drove out in an RV to see the west...Grand Canyon and Yellowstone and Yosemite and all of that, and we had so many adventures and I remember just being absolutely awed...and it was epochal, it was absolutely epochal in our lives and supplied by natural wonders.

Debra described her experiences as a Girl Scout, noting, “We used to go canoeing and camping up in New York State, Vermont, and uh, so that really got me started.” John’s “folks would rent a cottage on a lake for one or two weeks each summer and that was as big a deal as Christmas to me, we’d fish and swim...we’d spend time in nature by ourselves...that really hooked me.” These experiences certainly were influential in developing an appreciation for the natural environment.

Self-perception as an active person who cares about the world. An interesting aspect that came out with further investigation was that of self-perception and how the natural environment helps to reinforce the identity of an active person who cares about the world.

John wrote:

I have to agree that the natural environment helps reinforce my identity as: 1.) An active person...2.) A caring person...3.) A sensitive person, a lover of beauty...4.) A scientific person. I like keying out species. 5.) A different person, an individualist.

There just aren’t many people who go for walks in the woods in mid-Michigan.

Stella said:

I see myself as sort of an active person and so...being outside and doing things reinforces that in me...I view myself as kind of being a, like I just don't like to...hang out and watch TV...It helps me see myself as more of an active person who's getting involved and doing stuff and out appreciating our world as opposed to kind of kicking back.

It is obvious from these participants' comments that the natural environment plays an important role in their identity and self-perception.

Conservation. Throughout all of the interviews, there was an aspect of conservation. This was not surprising given that all of the participants were Sierra Club members. Stella commented on the importance of protecting the variety of species of animals, stating, "I really value the diversity of the earth and want it to stay that way so I think that we need to do what we can to make sure to ensure that other species survive along with humans." Debra talked about growing up in New Jersey, where

...you kept seeing natural areas vanish over and over and over again and up the shore too, it used to be a very quiet area and then they just started building it up and my whole life has been just a series of seeing natural areas just destroyed for commercial purposes and so I think that I definitely want that connection between, with the outdoors on lots of different levels...You know we're basically a species that would not be here if it wasn't for the riches of the outside and so we have to remember that constantly.

Carrie commented that:

...this is where we live and it's more of...a kind of responsibility type of thing...We were put here however we developed here with clean water, clean air, clean land, and so it's our responsibility to make sure that those things continue...for our children, for all the other life that's on this planet.

It is evident that conservation is an important value to these participants.

In sum, there were two themes that emerged from this study: the positive health benefits of natural environment occupations and the influence of childhood experiences impacting adult values. In the next section I will discuss these themes further in light of the existing literature.

Discussion

The themes that emerged from this research demonstrate the importance of natural environment occupations to the Sierra Club members. They illuminate the benefits that natural environment occupations provide. Many of the themes and subthemes are supported by existing theories and literature.

The aspect of restoration found in this study is supported by Hartig, Mang, and Evans' (1991) and Kaplan's (1995) environmental psychological research using attention restoration theory. This theory holds that voluntary, directed attention requires effort and, when prolonged, can lead to mental fatigue while restorative environments can renew our ability for directed attention. Restorative environments give us the feeling of being away and have fascination, extent, and compatibility. In other words, restorative environments allow us to attend involuntarily. Kaplan (1995) suggests that most natural settings meet the requirements of a restorative environment and thus can aid in reducing our fatigue and renewing directed attention abilities. For example, Taylor and McGruder (1995) undertook an ethnographic study examining the experience of sea kayaking for persons with spinal cord injuries. A central theme was atmosphere. The natural atmosphere of the sea was tied to fun, relaxation, peace, and unforced laughter. The participants felt that the setting was like a different world. This description matches the characteristics of a restorative environment. Being on the sea is being away and the horizon provides extent, while the fun came naturally, representing unforced attention.

Hartig, Mang, and Evans' (1991) study provides support for the restorative capacity of natural environments. Their finding that backpackers had improved proofreading scores after completing a backpacking trip and that both non-wilderness vacationers and non-

vacationers had decreased proofreading scores is in alignment with the comments of the Sierra Club members. Debra mentioned a “more efficient...smooth way of thinking” and an ability to get her chores done with greater ease after coming back from a camping trip while Stella mentioned a “lasting calmness.” Hartig et al. (1991) also found that nature walkers had higher measures of mental fatigue recovery than urban walkers and a passive relaxation group. It follows that natural environments have therapeutic power and may be an important tool for occupational therapists.

The aspect of relaxation was very strong among all of the participants. They used different words for this such as “calming,” “relax,” and “solitude, peace, and quiet.” This correlates with Ulrich’s (2003) finding that blood donors watching nature scenes on television had lower pulse rates than donors watching urban scenes on television. A lower pulse rate would suggest a more relaxed state. Although not specifically stated as relaxation, Birch’s (2005) study on the Green Gym revealed a theme of mental health benefits.

The aspect of positive emotions correlates with the Hartig et al. (1991) study where nature walkers had higher ratings of positive affect and overall happiness than urban walkers and a passive relaxation group. This suggests that natural environments can improve feelings of happiness and increase positive affect.

The aspect of being in the moment correlates well with Boniface’s (2000) literature on flow. Characteristics of the experience of flow are narrowing of attention, losing oneself in the activity, and losing awareness of time (Czikszentmihalyi, 1993). Being in the moment allows one to focus fully on the activity and get lost in it, much like the experience of flow. Boniface suggests that outdoor and adventure activities can lead to a state of flow. Four out

of five participants spoke about being in the moment. The participants' comments suggest that at times, they may be experiencing flow with their natural environment occupations.

The subtheme of physical health is an interesting one and has implications for occupational therapy practice. This theme helps to illuminate an aspect of "doing" in the natural environment, going beyond a pure look at context. Much of the research, such as landscape architecture, focuses on the benefits of passive exposure to natural environments. The environment is the context within which the regular day-to-day activities take place. Education literature focuses on the natural environment as a context that can encourage healthy child development. This research focuses on the context and the characteristics of the natural environment. Therapeutic gardening literature focuses on the occupation of gardening, which may or may not be a natural environment occupation, depending on the context in which it takes place. This thesis takes a look at a variety of occupations that take place in and involve the natural environment. Most of these occupations involve "doing" as opposed to passively being exposed to the environment.

The participants' comments yielded insight into this "doing" in the natural environment. They mentioned not only liking the natural environment for the physical exercise opportunities it held, but four out of five mentioned preferring to get their exercise outdoors. This exercise is facilitated by a variety of occupations such as biking, hiking, running, and cross-country skiing. The participants appear to enjoy the physicality of their natural environment occupations. This suggests that occupations in the natural environment may have a tendency towards being physically active. This may be because natural environments have fewer modern conveniences and require more physical work to exist in, even for short periods of time.

Another aspect of natural environment occupation is that it involves inherent purpose as opposed to typical exercise activities. Typical exercise activities may have an end goal of improving muscle strength or cardiovascular endurance, but no inherent goal within the activity. Natural environment occupations by nature are purposeful. Many of the occupations mentioned by the participants in this study involved mobility or getting from point to point, such as skiing, running, hiking, canoeing, or walking. Other occupations such as camping or trips involve many occupations within them such as cooking, building, and fire-making. There is inherent purpose in these activities.

In occupational therapy practice, we use purposeful activity therapeutically and define it simply as goal-directed activity (American Occupational Therapy Association, 1993). Purposeful activity includes both an inherent goal as well as a therapeutic goal (Hussey, Sabonis-Chafee, & O'Brien, 2007). When performing purposeful activity, the occupational therapy client focuses more on the inherent goal of the activity and less on the therapeutic goal. For example, a client may participate in a cooking activity. The inherent goal is to prepare a meal, but the therapeutic goal may be to work on dynamic standing balance. Since this activity has an inherent goal, the client may become absorbed in the activity itself instead of thinking about how hard they are working on maintaining balance. They also may stand for a longer period of time than they would have without cooking if that is what the cooking activity requires of them. Typical exercise activities often have a therapeutic or health goal of strengthening and toning the body, but lack an inherent goal. Thus, natural environment occupations are more purposeful than typical exercise activities and may be sustained over a greater period of time. Richard touches on this idea of purposefulness when he says, "I don't like the whole idea of sitting like a squirrel on a wheel,

I like to go places, I like to go out and see, you know.” Traversing natural environments has a purpose of going some place and seeing things as opposed to running on a treadmill. Birch (2005) also found the theme of physical health benefits in his study on the Green Gym. This suggests that natural environment occupations may help to support a physically healthy body.

The aspect of bonding was somewhat surprising since it was not emphasized in the literature previously found. Two early participants actually used the term *bonding* and so subsequent participants were asked specifically about it. Birch’s (2005) Green Gym study found one theme of social benefits. The participants felt a sense of teamwork and valued a shared sense of environmentalism. It is interesting that the Sierra Club members chose to use the word *bonding* to describe the social benefit. In addition, not all participants agreed that bonding is a result of the natural environment. Debra felt that the natural environment could improve bonding between people who were already close but did not think it could bring people together who did not necessarily know or like each other already. Their reasons for why this bonding occurs centered around sharing common goals and being freed from everyday distractions.

Stimulation as an aspect of physical health was also not surprising. Rivkin (1997) advocates for natural schoolyards, which would increase sensory opportunities for children. She writes, “The variety and richness of natural settings—the wind, the sky, the changing clouds, the moving animals, the cycling plants, the hardness of rocks, the flowingness of water, the varieties of colors and sounds, the wide range of permitted behaviors...all contribute to physical, cognitive, and emotional development more than manufactured indoor environments typically can or do” (p. 63). Birch’s (2005) Green Gym study also yielded a theme of stimulation. He noted that the participants in his study found the diversity of nature

and its seasonal changes to be stimulating. This aspect has implications for occupational therapy practice, particularly with respect to pediatric practice. If natural environment occupations provide stimulation that is beneficial to child development, then we need to take a closer look at their value in school-based and pediatric practice.

It is interesting that when asked how they came to enjoy the natural environment, all participants responded with childhood experiences and people who influenced them. This is a strong theme in this study, and participants gave many detailed descriptions of childhood events and people, with happy reminiscence. It would be interesting to hear the voices of those who did not get their start with nature in the childhood years, but in adulthood.

The theme of self-perception as an active person who cares about the world came out with follow-up questioning. It is not a new idea that the participants would find their natural environment occupations shape their identity or how they see themselves. Christiansen (1999) called it *selfing*, and defined it as “the shaping of identity through daily occupations” (p. 552). He also wrote, “...by experiencing our actions and our lives as our own, we adopt them as part of ourselves...” (p. 552). What is unique to this theme is the type of characteristic solidified in the participants’ identity or self-perception. The participants in this study indicated that qualities of being an active person and being a person who cares about the world were reinforced by their natural environment occupations. Therefore, it makes sense that participating in conservation activities as part of the Sierra Club would reinforce the identity as a person who cares about the world. It also makes sense that participation in active natural environment occupations would reinforce the identity as an active person.

The aspect of conservation was not surprising given the participants’ involvement in the Sierra Club. The participants had varying reasons for why they valued conservation.

Stella, for example, values the diversity of species on this planet and would like it to stay diverse, whereas Debra views our survival as dependent on the resources that the natural environment provides. The participant's reasons for valuing the natural environment are reflected in the Sierra Club's mission statement (<http://www.sierraclub.org/101/3.asp>).

A surprising finding was the lack of a theme about spirituality. My first participant eloquently spoke about spirituality so I explored that with others; however, they did not support it. Cox (1995) included spiritual health in her reflections on occupation and the natural environment. She suggests that natural environments provide quiet, reflective spaces for those who seek them. She also suggests that active natural environment occupations can facilitate personal growth and awareness. Spirituality is often a focus of therapeutic gardening literature. In Unruh, Smith, and Scammell's (2000) qualitative study of gardening with a life-threatening illness, spirituality was a significant factor for two of the three participants. However, Birch's (2005) Green Gym study did not yield a theme around spirituality. In addition, there is much discussion about spirituality in occupational therapy literature (Peloquin, 1997; Unruh, Versnel, & Kerr, 2002; Wilding, May, & Muir-Cochrane, 2005). One of the greatest issues is in defining spirituality. Another issue is in determining what occupational therapy's role should be with respect to spirituality. The Occupational Therapy Practice Framework includes spirituality as one of seven contexts within which participation occurs. Spirituality is defined as "the fundamental orientation of a person's life: that which inspires and motivates that individual" (AOTA, 2002, p. 623). I did not explore the meaning and definition of spirituality with participants or look into how it applies to the natural environment. If a participant did not mention spirituality, then he or she was asked if

it was a factor. Given their responses, I decided not to further explore this direction. This may be an area to investigate in the future.

Implications for Practice

Natural environment occupations are part of the roots of occupational therapy. In the early years of occupational therapy's inception as a profession, agricultural activities were used in mental institutions (Dunton, 1917). Kefauver wrote a piece in 1928 on occupational therapy and agriculture where he discusses the benefits of agricultural activities as occupational therapy for patients with both mental and physical disabilities. He writes of the various "outside occupations devoted to farming, dairying, poultry and swine raising, gardening, flower culture, landscaping, building and other allied activities" (p. 193). He continues, "...the physical and mental condition of the patient is being normalized by manual labor and exercise in the open, in accordance with his aptitudes and ability" (p. 193). It is clear that outdoor occupations were a prominent part of occupational therapy's early history. This may have been due to the greater expanse of rural settings with fewer modern conveniences at the time. Natural environments may have been more readily accessible with farming and gardening as common occupations. What is certain is that most occupational therapists today do not utilize natural environment occupations. From time to time, we do hear of a unique farm or nature-based occupational therapy setting (Yuen, Badger, & Austin, 1989), but it is not the norm. Perhaps today's constraints of working within the medical model and reimbursement systems make it hard to allocate resources for outdoor environments.

We know that today's children are spending less time in the outdoors than their parents did growing up (Clements, 2004). Some of the reasons cited for this are concerns

about safety with unsupervised outdoor play and the popularity of electronic media (Clements). This means that children are playing more video games and watching more television, which is replacing outdoor play. If the natural environment is beneficial to child development (Wilson, 2007), then there is a need for occupational therapists to advocate for outdoor play and to utilize natural environment occupations therapeutically. The same follows for adults whose physical, social, and emotional health may benefit from natural environment occupations. The challenge for today's occupational therapist is to return to some of our earlier practices and include natural environment occupations in our repertoire.

Occupational therapists may wish to use natural environment occupations to work on specific goals related to social, physical, cognitive, and emotional health. For clients who indicate a fondness for natural environment occupation, it could be a useful modality. The client who is unmotivated to participate in strength and endurance activities in a rehab gym may be more willing to build strength through natural environment occupations. It is possible that the natural environment can help infuse purpose in our therapeutic activities. For example, taking a walk with a patient down the hallway may not have the purposefulness that a walk outside, on a garden or courtyard path may have. The added positive stimulation of nature may help take the focus off the effort required of them, and clients may walk for further distances or work for longer periods of time. They may also receive benefits aside from the intended goal of therapy, such as stress reduction and restoration, as suggested by the preliminary findings of this study. The restorative nature of natural environments may be a useful adjunct to traditional therapy for those with brain injuries or other cognitive disabilities. Being in a restorative environment may help to relieve some of the cognitive stress faced by someone working hard to regain cognitive abilities. The student with social-

emotional goals may benefit from group occupations in the natural environment. These are all avenues to consider for occupational therapy practice and for future research.

As this study's participants were self-identified natural environment enthusiasts, we cannot assume that natural environment occupations would be beneficial to those who dislike the natural environment. Research in this area would be beneficial to our understanding.

The natural environment, for many, is an overlooked resource. Research on settings that use the natural environment would help yield more insight into the therapeutic power of natural environment occupations.

Limitations

This study used a convenience sample from the Sierra Club. Sierra Club members join this club because of shared values. This is only one such group who enjoy the natural environment. Results may differ if the sample of participants were a different group of natural environment enthusiasts, such as hunters. Also, this purposely skewed sample does not include the thoughts of those who range from indifference to dislike for the natural environment. Thus, the results of this study reflect the unique perspectives held by environmental activists such as the Sierra Club members whose preferred activities include participation in natural environment occupations.

Conclusion

This research adds to the paucity of occupational therapy literature on the natural environment. It sheds light on the various benefits of natural environment occupations and encourages occupational therapists to incorporate them in their practice. This study looks at not only the natural environment context but, more importantly, occupation or doing in that context. More research will need to be done to further illuminate this topic.

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APPENDICES

Appendix A

Informed Consent Form

Project Title

The meaning of natural environment occupations: Exploring the experiences of Sierra Club members.

Principle Investigator:

Tulin Ture, OTR

Graduate Thesis Advisor:

Elizabeth Francis, Ph.D., OTR

Purpose of the Study

You are being asked to participate in a study designed to explore the experience of participation in natural environment occupations such as hiking, biking, canoeing, kayaking, and camping. The purpose of this study is to explore and to understand these experiences and their meaning through the eyes of adult Sierra Club members.

Procedure

If you agree to participate in the study, you will be asked to 1) engage in 1-2 interview(s) with the principal investigator and/or 2) allow the researcher to participate in 1-2 natural environment outings that you will be attending.

Interview(s) will take place in a location of your choosing and will be scheduled at a time that is convenient to you, lasting no more than one and one half hours, each. The questions you will be asked will focus on your experiences of natural environment occupations and their meaning to you. You are free to decline to answer any questions during the interview and may stop the interview at any time with no penalty to you. You will have the opportunity to review and verify any information with the interviewer following the interview. It is possible that the interviewer may contact you at a later date to verify information or clarify your responses. You may withdraw from the study at any time without consequences.

Participant observation will involve the principal investigator attending a Sierra Club outing, such as a day hike, and taking notes along the way on anything that seems pertinent to the study.

Risks

Minimal risks are anticipated as a result of participation in this study. It may be inconvenient to schedule time with the researcher to engage in the interview process. The researcher will adjust her schedule to accommodate you and will meet you at a private location of your choosing. Some participants may experience stress or discomfort as a result of the interview process. You are free to answer questions or not. You may stop the interview and/or drop out of the study at any time without consequences.

Benefits

A potential benefit includes the opportunity to engage in a dialogue with the interviewer and explore the meaning of your natural environment experiences. Contributing to what is known

about the value of engaging in natural environment occupations and adding to the knowledge base about this subject may also be perceived as a benefit.

Confidentiality

All information obtained during the course of this study that can be identified with you will remain confidential. You will only be identified by name on the signed consent form and a log sheet that assigns a number to each participant in the study. Both of these forms will be kept in a locked file separate from all other data. You will not be identified by name on the audio recordings, written notes, or any of the written research. The digital audio recordings will be saved to a memory key which will be kept with the written notes in a locked file separate from consent forms and log sheet. The findings of this study will be published in my masters thesis at Eastern Michigan University. Portions of the study may also be published in professional journals, presented at professional conferences, and may be discussed with Sierra Club, Central Michigan Group; however, no identifying data will be used. Personal data will be altered to maintain your anonymity.

Questions

Any questions you have about this project may be directed to myself in person or to my Graduate Thesis Advisor, Professor Elizabeth Francis, Ph.D., OTR, Director, School of Health Sciences, Eastern Michigan University (734) 487-3231, efrancis@emich.edu.

Withdrawal

Your participation in this study is entirely voluntary. You may withdraw your consent and discontinue participation at any time without consequence to you.

Agreement

I have read, or had read to me, all of the above information about this research project. The meaning and content of this consent form has been explained to me by Tulin Ture. I understand the nature and purpose of this research project and voluntarily agree to participate in the study. I will receive a signed copy of this consent form.

Participant Signature

Date

Interviewer Signature

Date

Appendix B
Interview Protocol

1. How long have you been a member and what brought you to the Sierra club?
2. Describe for me the natural environment activities/occupations you currently engage in.
3. Tell me more about what led you to participate in these particular natural environment occupations.
4. Tell me what it is about these particular activities that make them important to you.
5. What effect do natural environment occupations have on you and your life?
6. What is the meaning of these natural environment occupations to you?
7. How do you feel before, during, and after you participate in natural environment occupation?