Meeting the Personal Environment: Exploring Environmental Sensitivity of Appalachian College Students

Dissertation

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

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2020

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Abstract

The Appalachian area is characterized as a politically conservative, rural region with an economy that is historically based on resource extraction, factors which are thought to correlate with a lower degree of environmental concern relative to urban, liberal residents. Environmental sensitivity is defined as a nuanced form of environmental concern based on experience. It is not known to what extent multiple contextual factors may interact with each other to shape environmental sensitivity, particularly in the Appalachian region. These factors give rise to the following research questions for this work: What influence does outdoor recreation/nature experience and place attachment exert on environmental sensitivity? How do social effects such as religion, politics, and social capital affect environmental sensitivity? And, how does education in environmental sciences interact with these factors to influence environmental sensitivity within this study context?

Within this context, a broad age-and-gender range of eleven Appalachian college students pursuing either an Environmental Science or Wildlife Conservation degree participated in qualitative interviews following a phenomenological, co-constructivist framework. Participants responded to a series of discussion questions exploring place attachment, outdoor recreation and experience, educational experience, and religion, politics, and relationships within an environmental context. Responses were analyzed

according to grounded theory methods, providing a series of codes grouped under larger concepts.

Under this framework, two broad themes emerged: the relation between place attachment and outdoor recreational effects on environmental sensitivity, and a separate discussion of social effects on environmental sensitivity. Experiences that participants had were found to supply meanings to places where these activities occur, resulting in positive effects on environmental sensitivity. Additionally, having good feelings for a well-loved certain place was found to give rise to protective, affective feelings about the natural environment in general in some cases. These positive effects of place and outdoor experience are mediated by circumstantial constraints such as access or monetary restraints. Social factors such as religion, politics, social capital, gender, and income exhibited variable effects on environmental sensitivity, with education acting to mitigate negative influences in some cases. This study finds that multiple contextual factors interact to influence environmental sensitivity, with place meanings emerging as a significant contributor. Implications include the importance of place meaning's role in place discourse and practical management, acknowledgment of the negative effects circumstantial restraints may exert, and the role of education in tempering negative social effects such as political entrenchment.

Acknowledgments

I would like to acknowledge the role of my students in providing the rich background to generating the ideas for this study. Histories of cabins and camping told stories as interesting to explore as the natural world itself. I am thankful also to the institution for allowing this study to take place and realizing its value.

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Field of Study

Major Field: Environmental Science

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Chapter 1. Introduction

Environmental challenges faced by today's society are more pressing than ever. With the growth of the world's population, innovative solutions regarding food security, waste disposal, and preservation of natural resources are becoming more critical by the day. Especially within the United States, political polarization regarding environmental issues has spawned heavily divided factions on climate change and energy sources. Researchers have long investigated the roots of what drive a certain perspective towards either the environment in general or specific issues, from the individual level (Stern, Dietz, Abel, Guagnano, & Kalof, 1999; Stern, Dietz, & Guagnano, 1995; Van Liere & Dunlap, 1980) to the cross-national (Inglehart, 1999; Smith, Kim, & Son, 2017). In the present day, research shares the impetus of past decades to understand what drives these perspectives, but faces two additional challenges: incorporation of newer issues such as political polarization regarding climate change, and the realization that previous findings linking certain demographics to a particular environmental perspective may be changing (Liu, Vedlitz, & Shi, 2014).

One of these previously held understandings that now faces change is the connection between an individual's residence and their degree of concern for the environment. Rural areas, including those with a history of resource extraction, have historically been categorized as evidencing weaker support for environmental issues

compared to urban areas (Lowe & Pinhey, 1982; Tremblay & Dunlap, 1978; Van Liere & Dunlap, 1980). In essence, urban residents were thought to show higher environmental concern due to their greater exposure to harmful environmental effects (Tremblay & Dunlap, 1978), while rural residents are farther displaced from these effects and more directly depend on resource extraction (Harry, 1971). However, more recent empirical work is inconclusive, often showing no difference between urban and rural residents regarding environmental concern (Fransson & Garling, 2009; Huddart-Kennedy, Beckley, McFarlane, & Nadeau, 2009; Gifford & Nilsson, 2014; Sharp & Adua, 2009). If organizations or political leaders seek support for environmental issues, rural areas may therefore be overlooked if a newer understanding of rurality and the environment does not overturn the old.

Discussions of rurality vs. urbanity, and their effects on environmental concern, can be related to conversations of place (Armstrong & Stedman, 2019). Although place literature can be somewhat difficult to trace, growing out of the qualitative tradition and claiming researchers in multiple fields (Trentelman, 2009), it has been recognized for its possible applications to environmental sociology and natural resources work. In some cases, place attachment – an affective, positive bond between groups or individuals and their environment (Altman & Low, 1992) – is found to positively influence environmental concern (Armstrong & Stedman, 2019; Stedman, 2002; Vaske & Kobrin, 2001; Vorkinn & Riese, 2001). Yet, Stedman (2003b) calls for a greater understanding of the *meanings* behind place attachment, noting they are distinct from attachment itself. Brehm, Eisenhauer, and Stedman (2013) and Armstrong and Stedman (2019) even

suggest these place meanings play a superior role in predicting environmental concern to traditional demographics. Masterson et al. (2017) suggest that since place meanings frame what is worthy of environmental protection, it is the meanings themselves that influence both individual and collective environmental behavior. Since quantitative work involving place meanings is limited to researcher-supplied conceptions of meanings, to which respondents choose agree/disagree statements (Stedman, 2003b), there is much exploration still to do regarding place meanings, e.g., respondents supplying their own personal meanings in a qualitative research setting.

Though the interrelation of rural/urban places, place attachment, place meanings, and environmental concern is not yet fully understood, one way in which place attachment is known to reinforce environmental concern is through nature recreation (Larson, Cooper, Stedman, Decker, & Gagnon, 2018). As outdoor recreation, and nature experience, then, are thought to help shape beliefs about the environment (Ewert, Place, & Sibthorp, 2005; Wilson, Szolosi, Martin, & Scanlan, 2014), a new term emerges to capture the component of experiences within an individual's environmental perspective. *Environmental sensitivity* can be used to describe a more nuanced form of environmental concern which hails from a context of having had significant life experiences in the outdoors, as opposed to a more general environmental concern which is not promulgated from a specific source (Chawla & Derr, 2012). It is environmental sensitivity that I will explore in this study to specifically describe environmental concern that is based on experiences in nature.

Social effects such as religion, politics, and social capital may play a role in shaping environmental concern, as well. A greater amount of social capital can be shown to correlate with greater environmental concern (Torgler & Garcia-Valinas, 2007; Hao, Michaels, & Bell, 2019); however, social capital may also play a role in adherence to political parties which are less supportive of environmental issues (e.g. McCright & Dunlap, 2011). By contrast to the concept of urban-rural residence, liberal politics retains the strong relationship it had to environmental concern in the previous decades (Fransson & Garling, 2009; Liu et al., 2014). Hamilton, Hartter, Safford, and Stevens (2014) show that within the rural setting of their study, political conservatism was a negative indicator of environmental concern. However, questions remain on how best to cross this political divide and encourage environmental relevancy to a wider audience (van den Broek, Bolderdijk, & Steg, 2017; Wolsko, 2017; Ziegler, 2017). The connection between religion – specifically, the Judeo-Christian perspective common throughout much of the United States – and environmental concern is far less clear-cut, with some scholars finding a negative effect between religion and environmental concern (Eckberg & Blocker, 1989; Guth, Green, Kellstedt, & Smit, 1995), but some studies showing the opposite (Kanagy & Willits, 1993; Kearns, 1997). Overall, the state of religious effects on environmental concern is not well resolved, but more recent work suggests that important contextual differences among individuals have been obscured by the previous religious dichotomy (Djupe & Hunt, 2009; Munoz-Garcia, 2014).

Lastly under consideration for this study, education may exhibit some influence on environmental sensitivity. Education in the environmental sciences would serve to

inform findings about consequences, critical in the landmark Value-Belief-Norm theory used to describe influences on environmental behavior (Stern, 2000). Although merely teaching to increase awareness of environmental problems may not be sufficient to spark concern (Heberlein, 2012), Metzger and McEwen (1999) state, specific to an environmental sensitivity context, that cognitive knowledge is essential to nurture an "intelligent concern" for surroundings (see also Yu, 2014). Further, Fransson and Garling (1999) note findings in their review that lack of knowledge about viable action strategies is found to be a factor explaining absence of pro-environmental behavior. Gifford and Nilsson (2014) include knowledge/education in their review as one of 18 factors found to influence environmental concern or behavior, describing knowledge as a "necessary but not sufficient" condition for decision-making. Therefore, while not a comprehensive solution to issues surrounding the environment, education still remains an important piece of the puzzle, though what role it may play in any given context remains fluid rather than concrete.

Given this background, the Appalachian Ohio region serves as an area of interest within which to explore these concepts. This region of the United States can be conceptualized according to multiple definitions, and scholarship is ongoing. Weaver and Holtkamp (2016) list four of the most prominent conceptualizations: physiographic boundaries, the Appalachian Trail centerline, "Greater Appalachia" cultural boundaries, and perhaps most famously, the political boundaries designated by President Kennedy's Appalachian Regional Commission. It is perhaps less necessary for this work to select a certain regional definition within which to adhere than it is to emphasize what all hold in

common. Billings and Blee (2000) describe this region as influenced by a strong coal industry, impacted by labor unions, and influenced by traditionalism and familism. In extreme cases, some sociologists have used these familial bonds coupled with traditionalism to explain the poverty of rural Appalachia, suggesting that by remaining isolated, Appalachian residents do not pursue the economic and educational opportunities enjoyed by others (Lewis & Billings, 1995). Students in this region may experience challenges when approaching the post-secondary pathway (Ali & McWhirter, 2006). The resource-extractive heritage on which the region is based can, in some cases, form its own "economic identity" when encouraged by powerful groups such as Friends of Coal (Bell & York, 2010). Jones (2019) demonstrates through a Gallup poll that the Ohio portion of the Appalachian region is politically more conservative than average compared to the rest of the nation. Of note, adjoining West Virginia, where many Appalachian college students retain family ties, is listed as highly conservative according to the modern Gallup survey (Jones, 2019).

According to the previous discussion regarding environmental concern, a question emerges relative to the Appalachian Ohio region: as a typically rural, politically conservative, historically resource-extractive area, how does this knowledge shape expectations of environmental sensitivity? If based on the understanding of previous decades, the region might be assumed to display a relatively low level of environmental concern. Yet, when considerations of place attachment, outdoor recreation, and nature experience are taken into account, combined with the effects of education, it may be reasonable to expect positive influences on environmental sensitivity. Given the urgency

of environmental issues facing the current, highly-polarized American society, those seeking support for these causes can ill afford to overlook the area.

Within this context, a community college serving the Appalachian Ohio region provides a rich field of interest concerning these concepts. Community colleges seek to provide a level of higher education located within a particular place (Dougherty, Lahr, & Morest, 2017), where students are often more strongly situated than at traditional universities, thus providing a context for questions of place. Of the approximately 80 community colleges that exist in the Appalachian region (Baldwin, 1996), 5 such colleges are located in Ohio. This area of Ohio boasts plentiful opportunities for participation in outdoor recreation, in which many students are involved. Students in pursuit of a degree in the natural resources or related field of study might be expected to evidence at least some degree of environmental sensitivity, as appropriate for this study.

It is worth noting here than even given the question of rural-urban divide with regard to environmental concern, many rural-serving community colleges do indeed boast some sort of interdisciplinary environmental and sustainability program (Vincent, Santos, Cabral, Sloane, & Bunn, 2014). However, the Appalachian region falls into the smallest category for proportion of U.S. community colleges offering these and related degrees, at less than 36% (Vincent et al., 2014). Of the 5 Appalachian community colleges in Ohio, 3 colleges offer programs in environmental science or a related field at the time of this study. Of these 3, only 1 institution offers degrees in both Environmental Science and Wildlife Conservation (as opposed to the other 2, which offer either one or the other at the time of this study). Students participating in this work as members of

either of these programs might offer a broader perspective than those drawn from one program alone. My status as an instructor for courses in these programs at this particular college also offers insight via considerations of positionality (discussed in Methods section, following). A pursuit of qualitative interviews with these students can therefore at least partially answer the call of Stedman (2003b) to explore the meaning-based nature of place attachment, as well as providing insight into the other factors listed in the discussion above.

To this end, I conducted qualitative interviews with eleven participants following a phenomenological, co-constructivist framework. Participants were selected according to a broad range of age and gender, but all were either Environmental Science or Wildlife Conservation majors at a community college serving the Appalachian region of Ohio. Participants responded to a series of discussion questions exploring place attachment, outdoor recreation and experience, educational experience, and religion, politics, and relationships within an environmental context. I analyzed participant responses according to grounded theory methods, providing a series of codes grouped under larger concepts. *Environmental sensitivity* was used to describe environmental concern specifically within the experience-based context of the study.

This work seeks to explore the following research questions: 1. What influence does outdoor recreation/nature experience and place attachment exert on students' environmental sensitivity? 2. How do social effects such as religion, politics, and social capital affect environmental sensitivity? and 3. How does education in environmental sciences interact with these factors to influence environmental sensitivity within this

study context? Figure 1 provides a visual model of the conceptual framework used to guide this study.

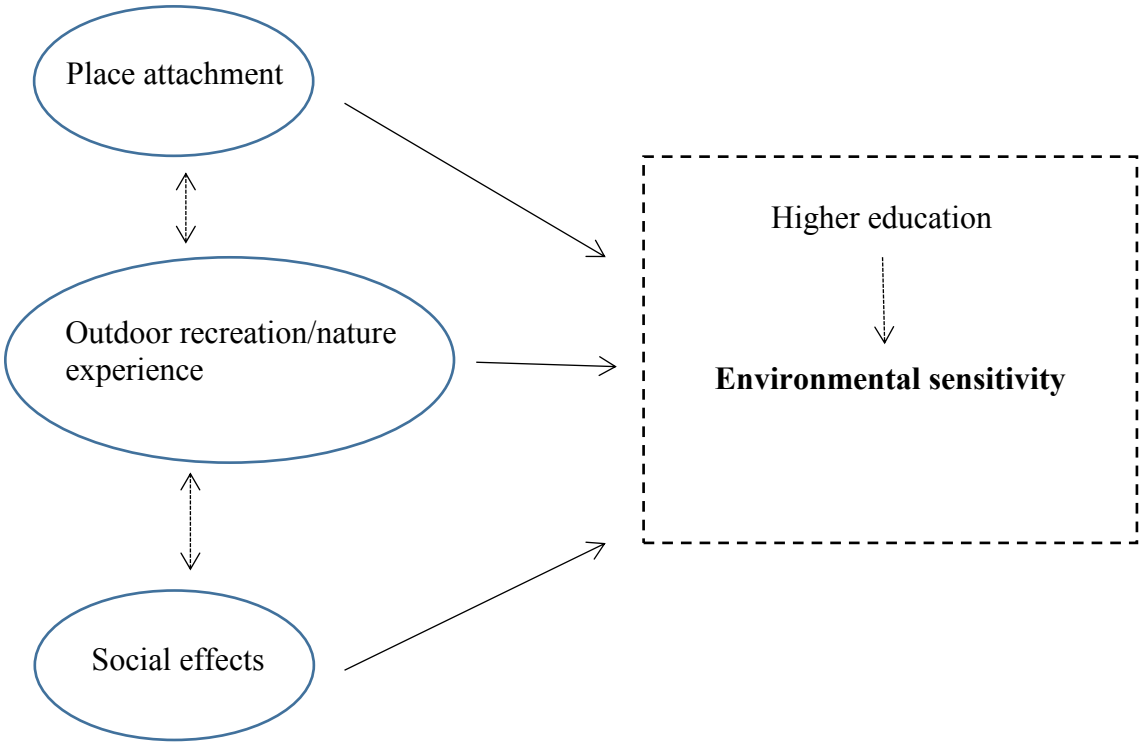

Figure 1. Conceptual framework guiding this study. Place attachment, outdoor recreation/nature experience, and social effects are all suggested from literature to exert effects on environmental sensitivity. However, the extent to which their influence extends in an Appalachian community college context, as well as possible interactions with each other, are not fully known. Further, education can play at least some part in overall environmental perspective; yet, the extent to which it acts in this context, as well as how, is not fully understood.

Theoretical implications of this work include a better understanding of the way in which outdoor recreation/nature experience and place attachment can influence environmental sensitivity. Recent works exploring the relationship between demographic indicators such as rural residence call for a reexamination of connections that have been accepted for decades. There is also a need for a deeper description of the specific meanings behind place attachment. I also explore, in a particular context, the role of higher education in shaping environmental perspective. This effort follows much discourse on the role of knowledge, which is often described as an insufficient answer to environmental issues, yet still incorporated into environmental education efforts. To my knowledge, there is no other study that has qualitatively explored the interaction of these multiple concepts within an Appalachian context at this time.

This topic is of pressing need to study given that today's environmental issues, e.g., climate change and energy sourcing, are globally widespread rather than confined to just one region; yet political polarization on these particular topics in the United States has stymied efforts to reach a unified answering effort. Further, we may well ask in a cutting-edge age of increasing mobilization, globalization, and technology – are matters of place still important? Can they help us begin to answer our environmental problems, or is it more efficient to focus elsewhere? Are there any areas that those seeking support for environmental causes have overlooked? And if so, how to better nurture that support? In a world where education has become more accessible than ever, how does education work to influence environmental sensitivity? What approaches are particularly effective?

Discovering influences on what connects this demographic in this setting to the natural world can enhance rigor for efforts to extend connection opportunities across a wide range of individuals and promote beneficial outcomes associated with environmental concern, such as human well-being, environmental justice, and the wise management of common resources.

These results could be incorporated within those of existing literature to offer further considerations on influences of environmental sensitivity, and would provide evidence from a particular setting which directly contrasts the context of urban residents, research-based university students, and other demographics. Results from this research may therefore not only be placed into the existing context of general research in this area, but may serve to influence environmental policymakers who may have traditionally ignored rural areas due to a perceived lack of support. Additionally, changing the way the Appalachian region is viewed with regard to locally-held environmental values would help prevent the power elite from controlling anti-environmental voting decisions via an appeal to extractive commodity culture (*sensu* Bennett & McBeth, 1998).

This research may also add to theory and general research within environmental education. Results may shed light on what types of connections may be important in efforts to promote environmental literacy in the region within a higher education context. Additionally, discussions including the results of this study would shed light on practical considerations of extending opportunities (outreach programs, recreational areas, college education) to particular groups (i.e., would help forecast what might or might not be effective). Providing a study group in contrast to other geographic locales, and one that

boasts a high incidence of connectivity to the natural environment, would be relevant to both theoretical research interests as well as practical considerations of education in environmental sciences (i.e., what may enhance effectiveness). For this reason, I believe the research to be beneficial on both the local (immediate and institutional) and projected (long-term; furthering the body of knowledge) scales of time and location.

Chapter 2: Literature Review

The aim of this study is to explore possible influences of multiple factors, discussed previously, on environmental sensitivity. While these factors can relate to each other to some degree, each forms its own strand of literature – sometimes borrowing from multiple traditions, as the work on place. This section attempts to dig deeper into what is known about these concepts. As the focus of this study is to discover possible effects to environmental sensitivity, I start with an explanation of this term.

Environmental sensitivity

In order to describe environmental sensitivity, it is necessary to first discuss the concept of environmental concern. Van Liere and Dunlap (1980) reviewed extant literature for what they termed the social bases of environmental concern, which involved bivariate correlations between demographic predictors and measures of concern. They concluded empirical support for theories suggesting that those of younger age, higher education, liberal politics, and urban residence were likely to evidence greater concern. They were emphatic in limiting their effort to studies specifically attempting to measure respondents' level of concern with environmental problems (as opposed to, for example, measures of trust in government to solve the problems, or perception of *causes* of environmental degradation). Perhaps anticipating the wealth of interest and ensuing work

regarding environmental concern their findings would generate, they soon published a plea for caution, emphasizing that *how* environmental concern is measured is significant (Van Liere & Dunlap, 1981). As examples, they provide support for government spending, the perceived seriousness of environmental problems, knowledge of environmental problems, and actual involvement in pro-environmental behavior as representing different ways of conceptualizing concern about the environment, which may rely on different underlying theories (Van Liere & Dunlap, 1981).

Measurement in this way – correlatively through survey data with demographics as predictors – forms the backbone of much environmental concern work (Fransson & Garling, 1999). More recent work such as Liu et al. (2014), using the popular method of national public surveys (see also Franzen & Vogl, 2013), continue to look at changes in demographic assumptions – for example, they find a decreased association between the younger-age, highly-educated relationships reported in previous decades. There are also contextual factors shown to affect concern such as social capital and place attachment (following) that have not been conclusively fleshed out. Noting the change in demographic trends from 1980 to 2014, no demographic category should be concluded as "set" or "stable"; rather, a fuller theory or model of environmental concern should attend to contextual effects that may influence individual-level variables. Further, values (Howes & Gifford, 2009) and identities in an environmental context (Stets & Biga, 2014) can exist as fluid, nested hierarchies which are located contextually, where survey questions regarding environmental concerns are necessarily interpreted in relation to other concerns (Klineberg, McKeever, & Rothenbach, 1998). In light of this conclusion,

great caution is warranted in interpreting the results of environmental concern when seen through a demographic lens.

As we continue to explore possible changes in previous demographic assumptions, environmental sensitivity (ES) emerges as a way to further capture contextual inputs. ES is a specially nuanced form of environmental concern in that it is primarily linked to *life experiences* (Peterson, 1982). It involves an empathetic perspective towards the environment, including the affective as well as cognitive components of psychology (Hungerford & Volk, 1990). In this way, feelings and emotions are explicitly incorporated (Sivek & Hungerford, 1990). The application of ES can be somewhat broadly applied, as Chawla and Derr (2012) also include a predisposition for interest in learning about the environment and "feeling concern" for it, even leading to actions in an attempt to conserve it – but explicitly based, again, on formative experiences. In more recent literature, environmental sensitivity has been incorporated under the concept of environmental connectedness, which forms its own research tradition (Beery & Wolf-Watz, 2014).

Bustam, Young, and Todd (2006) describe ES work as usually following one of two lines of research: that of significant life experiences reported by individuals (e.g., Corcoran, 1999; Place & Ewert, 2004; Sward, 1999), or finding correlates between outdoor recreation and environmental concern among more general populations (e.g., Bright & Porter, 2001; Bustam et al., 2004; Dunlap & Heffernan, 1975; Theodori, Luloff, & Willits, 1998). Within this research tradition, it became apparent that works on significant life experiences often focused on participants in environmentally-based

activities (for example, educators). Chawla (1999) suggest a need for more comparative studies, which Place and Ewert (2004) answer with a study of over 500 university students, yet question their results on the speculation that respondents attempted to give socially acceptable answers. On the other side of the spectrum, the line of research concerning outdoor recreation and environmental concern/ES has usually been more diverse with larger samples than that of the significant life experience work. Samples often incorporate residents of an entire state (Dunlap & Heffernan, 1975; Geisler, Martinson, & Wilkening, 1977; Theodori et al., 1998), but may also focus on visitors to a certain destination (Van Liere & Noe, 1981). Within these research approaches, outdoor experiences are generally found to be significant for persons responding to the life-experience line of inquiry, while a review by Berns and Simpson (2009) finds support for the outdoor recreation – ES association to be mixed. Bustam et al. (2006) suggest that a partial aid to the question of mixed results lies in the differentiating of outdoors activities such as types and setting preferences.

Of note, the specific term *environmental sensitivity* does not appear in all literature cited by authors as relating to ES (see Bustam et al., 2006) – recall again that the criteria for ES requires concern based on *experience*. As such, many works incorporating either significant life experience or environmental concern related to outdoor activity may be interpreted in an ES perspective. In fact, Berns and Simpson (2009) note that the outdoor recreational literature often does not distinguish between *concern* and *sensitivity*, but rather that ES is implied due to its basis of life experience. Keeping this in mind will help the reader make sense of studies that are not always

explicit in their use of the ES term suggested by Peterson (1982), as well as understand its application for the work presented here.

Outdoor recreation and nature experience

Since environmental sensitivity owes its roots to studies based on outdoor recreation and nature experience, I begin here for an exploration of possible influences on ES.

Though the original work by Dunlap and Heffernan (1975) demonstrated relations between outdoor recreation participation and environmental concern, another way in which concern may be manifested is through actual pro-environmental behavior. More recent studies have been able to demonstrate association between outdoor recreation and behavior (Nord, Luloff, & Bridger, 1998; Teisl & O'Brien, 2003; Thapa & Graefe, 2003; Theodori et al., 1998). In particular, these ties between outdoor recreation and behavior can be significantly influenced during childhood (Bixler, Floyd, & Hammitt, 2002; Palmberg & Kuru, 2000). Importantly, experiences in childhood can also extend to adulthood, as Wells and Lekies (2006) find that children who interacted frequently with nature (e.g. camping, hunting, hiking) before age eleven show stronger pro-environmental behavior as adults. In a work following the experiential tradition of sampling the environmentally-invested, Guiney and Oberhauser (2009) find that for most survey participants who expressed connection to nature, connection began in childhood, and was part of their motivation to volunteer as Minnesota Master Naturalists. Although children's knowledge of environmental problems may be fragmentary and out of their context, experiences from outdoor settings such as camps resulted in a strong, clearly

definable, empathetic relationship to nature in a qualitative study of Finland youth (Palmberg & Kuru, 2000). In a study of youth in Grades 6 – 8, Siemer & Knuth, 2001 find that fishing education programs offering hands-on fishing experiences as a component of the program are more likely to influence stewardship outcomes, and conclude that such programs are more likely to influence "antecedents" to behavior than programs without an experiential component. Although it is possible for positive environmental attitudes to form by an indirect experience such as reading environmental literature (Mobley, Vagias, & Deward, 2010), direct experiences in nature education often have a greater impact than indirect in forming the attitudes that influence environmental behavior (Duerden & Witt, 2010). Further, those in leadership positions can play a role, as the secondary factor in a mixed-method study of Wisconsin high school students identified as contributing to environmental sensitivity was the influence/personableness of teachers (after time spent in nature, Sivek, 2002).

Though a growing body of research supports the significance of outdoor experiences to children in influencing behavior, there is also evidence demonstrating links between outdoor experience and adult behavior. Nord et al. (1998) find through a survey of forest landowners and non-owners that outdoor recreation is strongly associated with pro-environmental behavior. Larson, Whiting, and Green (2011)'s structural equation modeling examining interactions among potential predictors of environmental behavior (sociodemographics, outdoor recreation participation in childhood and adulthood, environmental value orientations) report the strongest relationship existing between adult outdoor recreation participation and behavior. This suggests that even

though individual demographic characteristics (Liu et al., 2014) and childhood experiences are significant, adult participation in outdoor recreation should not be neglected in a study of outdoor experience and environmental sensitivity. Further, it is important not to overlook experiences that are not recreational in nature. For example, in addition to outdoor activities in natural settings, Hsu (2009) find experiences such as life in the countryside, formal education opportunities provided by schools, family examples of activism, vocation, and loss of beloved natural places to effectively distinguish environmentally concerned individuals from apathetic.

Common study demographics in this research area are groups of individuals with established environmental interest (discussed above), versus random, nationally representative samples (e.g., Teisl & O'Brien, 2003). Studies are not limited to the United States, with Hsu (2009) studying significant life experience of Taiwanese environmental activists and Palmberg and Kuru (2000) reporting a connection between nature experience of Finnish youth and environmental empathy. Methods are a mix of survey data and interviews, often with special attention being given to those places which offer greater opportunity for outdoor pursuits such as the deeply forested areas of Pennsylvania (Nord et al., 1998; Thapa & Graefe, 2003). As noted, the results of research detailing the influences of outdoor recreation participation on environmental concern are mixed, but suggest that based on the entire body of knowledge, there is an apparent link (Berns & Simpson, 2009).

The Appalachian region is rife with opportunities for residents to participate in various categories of outdoor recreation. A few studies exploring environmental concern

have taken place in the Appalachian region (Aldy, Kramer, & Holmes, 1999; Jones, Fly, & Cordell, 1999; Moore, Holmes, & Bell, 2011), showing mixed support for the education-concern link but echoing the liberal-politics findings of other studies. However, links between outdoor recreation and environmental concern remain limited (Cottrell, 2003), suggesting the need for further exploration. Even in the formative years of this research, Van Liere and Noe (1981) caution that the influence of outdoor recreation on environmental attitudes may be too complex to be understood by a simple one-to-one relationship. The concept of place attachment, discussed below, may therefore exist as another lens for interpretation in further exploring the complexity of these issues.

Place attachment

An exploration of place attachment must first begin with the earlier work on place. Fried (1963) describes the negative psychological consequences of forced relocation, i.e. moving persons from what was perceived to be low-quality homes to better situations. Understandably, the negative response was unexpected. Following this intrigue, human geographers took interest in the difference between space and place, e.g., Relph (1976) and Tuan (1977). Through qualitative inquiry, Tuan (1977) describe *place* as a center of meaning based on human experience, social relations, emotions, and thoughts. This was considered novel and distinct from the geographer's notion of place as explicitly physical and bounded. As interest in this social construction of place grew, the idea of *place attachment* emerged among other terms such as place identity (Proshansky, 1983), place dependence (Stokols & Shumaker, 1981), and sense of place (Brandenburg & Carrol, 1995).

As opposed to identity processes (Kyle, Graefe, Manning, & Bacon, 2004) or functionality (Vaske & Kobrin, 2001), place attachment can be defined as a positive bond that develops between groups or individuals and their environment, and explicitly contains *emotional* content, as defined by the seminal edited book by Altman and Low (1992). As place attachment rose to greater prominence following this work, natural resource scholars began to appropriate the term as relevant to management issues.

One relatively early example of this appropriation emerged when Williams, Patterson, Roggenbuck, and Watson (1992) spoke of moving beyond the "commodity metaphor" of natural areas and recognizing the emotional, symbolic attachment to place. The commodity metaphor is one that assumes natural areas and objects are essentially interchangeable – i.e., if one area of a forest is destroyed, it may simply be supplied with another area. Moving past this metaphor means exploring what is particular to each place such that those who enjoy the forest are attached to it. In this way, discovering the underlying emotions and symbols ascribed by visitors helps forestry professionals better manage their lands. In the years since discovering its relevance, place attachment has also been employed in the context of national parks (Halpenny, 2010), river management (Verbrugge & van den Born, 2018), and community planning (Manzo & Perkins, 2006). Devine-Wright (2009) even finds that place attachment sheds new light on longstanding environmental issues such as the NIMBY (Not In My Back Yard) effect.

Along with realizing the effects place attachment may have on these issues, researchers have also looked to place attachment as a possible influence on environmental concern and behavior. Vorkinn and Riese (2001) find that place

attachment can explain local environmental concern better than traditional measures incorporating demographics. Budruk, Thomas, and Tyrell (2009), Stedman (2002), Vaske and Kobrin (2001), and Scannell and Gifford (2010) all note positive effects of attachment on behavior. Importantly, place attachment can also reinforce pro-environmental behavior through nature recreation (Larson et al., 2018).

However, the *meanings* behind attachment play an important (Stedman, 2002), sometimes superior (Brehm et al., 2013) role in predicting environmental concern. In recent research, relational values (Klain, Olmsted, Chan, & Satterfield, 2017) may be a promising route in fostering environmental concern and behavior. Relational values are values linking people and ecosystems via tangible and intangible relationships to nature as well as the virtues and notions of a "good life" that may accompany these (as distinct from the "instrumental" vs. "intrinsic" values debate). This framework is a way of helping environmental values resonate more broadly with a varied audience. Place attachment may be one avenue with which relational values helps the surrounding environment to become relatable to individuals and thus fostering concern (Klain et al., 2017).

Attachment may also be measured at different scales, for example, an entire municipality in addition to separate subsets that are environmentally impacted (Vorkinn & Riese, 2001). When place attachment became a subject of interest to natural resource managers in the early 1990s, a natural pool for research questions became users of wilderness areas, such as those found in the southeastern U.S. (Williams et al., 1992). Other outdoor enthusiasts provided ample survey data such as users of the rail-trail

system in Florida, Iowa, and California (Moore & Graefe, 1994), Appalachian Trail hikers (Kyle et al., 2004), and national park visitors in Canada (Halpenny, 2010). Stedman, a staunch advocate for translating place work into testable research questions for the forestry sector (2003b), shifted the question from visitors of certain places to those with attachments to personal lakeshore properties (Jorgensen & Stedman, 2001, 2006; Stedman, 2002).

Research on place attachment is not limited to North America. Bonaiuto, Carrus, Martorella, and Bonnes (2002) compare attitudes of economically invested residents of an Italian national park versus those outside the park. A hydropower project in Norway provided opportunity for Vorkinn and Riese (2001) to examine local place attachment and its more significant effect on environmental concern than demographics. In the river-friendly Netherlands, place attachment was used as part of a survey which ultimately evaluated a proposed river intervention (restoration) as positive (Verbrugge & van den Born, 2018). Landholders in Southern Australia helped shed light on the explanatory power of place attachment when exploring the behavior of native vegetation planting (Raymond, Brown, & Weber, 2010).

Common findings include the importance of place meanings in addition to attachment (Stedman, 2002; Kyle et al., 2004, Bonaiuto et al., 2002; Scannell & Gifford, 2010), though Raymond, Kytta, and Stedman (2017) contend that the allowance of immediately perceived meanings, rather than those constructed from longstanding experience, constitutes a major blind spot in the place work. Ultimately, however, an attachment to place can have a positive effect on pro-environmental behavior (Vaske &

Kobrin, 2001; Larson et al., 2018). In addition, place attachment does seem to have effects on environmental concern, via human bonding to the physical environment, ascription of meanings, or local interpretations of ideas such as "conservation" (Vorkinn & Riese, 2001; Brehm et al., 2013; Hamilton et al., 2014; Masterson et al., 2017). Much like the more general attitude-behavior literature, place attachment shows itself to not be an immediate predictor of behavior but more of a contender in the equation, increasing overall explanatory power (see Raymond, Brown, & Robinson, 2011).

Overall, the state of place attachment literature is relatively unstructured, sometimes criticized for the "messiness" of its literature (Trentelman, 2009). Attempts have been made to translate its concepts into more familiar terms, vís a vís attitude theory (e.g. Jorgensen & Stedman, 2001), but these concepts have not become tenets. As Lewicka (2011b) notes, there is so far a dearth of research on the *process* by which it develops, especially in the quantitative work. However, place attachment's birth across disciplines lends itself to the "rich rigor" advocated by Tracy (2010) for qualitative research. Its freedom and flexibility allows the researcher both the opportunity and responsibility to define clearly their own terms and employ them as they see fit to best answer the question at hand (see Kyle et al., 2004 for an example).

Place attachment is associated with lower income and education – both characteristics commonly found in the Appalachian region – across all four study areas in a study of wilderness areas by Williams et al. (1992). Jones et al. (1999) describe residents of the southern Appalachian ecoregion as having a strong social and cultural connection to the land, which, along with community and kinship relationships, has

sustained the region through economic hardships. Norton and Steinemann (2001) are reminiscent of place attachment in their work illustrating adaptive management via its application to environmental and developmental decisions in the southern Appalachians. They describe an additional value, beyond merely aesthetic preference, that individuals place on "retaining key options or opportunities" in the location of the individual's residence (Norton & Steinemann, 2001).

I have noted in the literature above that in cases where the affective bond of place attachment exists, concern for environmental issues may be associated, even manifesting itself in behavior. Considerations of place attachment, concurrent with outdoor recreation, may therefore help explain environmental sensitivity in the Appalachian region.

Social factors

Discovering the drivers behind individuals' proclivity to have affective feelings for the environment is not an uncomplicated task. Historically, survey work incorporating various demographic factors as predictors of environmental attitudes has been used (Van Liere & Dunlap, 1980). Religion and politics are sometimes included in sets of these demographic factors, with the positive relationship between liberal politics and environmental concern remaining throughout the decades, even when relationships between other demographic indicators and concern have changed (Fransson & Garling, 2009; Liu et al., 2014). Early work by Dunlap (1975) posits three explanations for this relationship: that business/industries which support conservative ideologies are often opposed to environmental reforms; that these reforms would require an extension of

government activities (to which conservatives generally resist); and finally, that reforms require action as a departure from established status quo.

There are several explanations given for the relation between politics and environmental concern with regard to the current highly polarized political scene. For example, solidarity connections may exist between those in highly visible positions and members of a political ideology. Identity factors (such as identifying oneself as a "conservative white male" and acting to protect the in-group concerning environmental issues) may play a factor (McCright & Dunlap, 2011). Economic elites and business interests can exert a disproportionate effect on public policy (Gilens & Page, 2014), and citizens may take cues from elites that result in decreased environmental concern, even given information-based science advocacy (Brulle, Carmichael, & Jenkins, 2012).

Schuldt, Roh, and Schwarz (2015) emphasize, in a similar manner to Klineberg et al. (1998) and Van Liere and Dunlap (1981), that the *wording* of how environmental issues are measured is important, in this case with respect to partisan divide. For example, the authors find that a questionnaire using the term "global warming" rather than "climate change" reduced Republicans' but not Democrats' existence beliefs. On a related track, Feinberg and Willer (2012) explain the partisan divide by demonstrating that liberals, but not conservatives, view the environment in moral terms, suggesting that reframing environmental issues according to conceptions of conservatives' morals might be a fruitful effort (see Wolsko, 2017 for related findings).

In summary, the relation between liberal politics and environmental concern persists into the current day, but new challenges are faced in light of a particularly strong

partisan divide, where individuals may be aligning themselves with elite cues rather than scientifically based information. However, recent works have focused on reframing issues as a mitigating strategy to overcome this divide. As the Appalachian Ohio region is characterized as more conservative than average according to Jones (2018), I might expect conservative politics to play some role in influencing environmental sensitivity among college students in this region.

The relationship between religion and environmental concern is unclear. Decades ago, White (1967) suggested a link between the supposed Judeo-Christian value of domination over nature and a negative impact on environmental concern. However, studies since have proven far more inconclusive than their political counterparts. The expected negative outcome is sometimes found (Eckberg & Blocker, 1989; Guth et al., 1995; Hand & Van Liere, 1984). At times there is little relationship (Boyd, 1999; Hayes & Marangudakis, 2001), leaving some researchers to instead suggest the Judeo-Christian religion's pro-environmental effect due to stewardship (Shibley & Wiggins, 1997; Biel & Nilsson, 2005). However, Hayes and Marangudakis (2001) find no significant difference in environmental concern between Judeo-Christians and other religions.

In many cases, empirical studies concerning other religions are few (but see Rice, 2006; Dwivedi, 2006). In light of these considerations, Narayanan (2001) advocates that the significance of religious values in impacting pro-environmental attitudes and behavior should not be idealized. Sherkat and Ellison (2014) reconcile the differences in the Judeo-Christian studies by pointing to the complexity of religious beliefs (for example, the domination vs. stewardship values mentioned above), and cautioning that it is these

varied influences that act on different indicators of environmental concern – not the simple relationship originally posited by White (1967). According to Woodard (2011), religious devotion is among the norms and values that helped shape the culture of Appalachia. Yet, the relation to environmental concern as seen in literature is unclear; this concept may remain the least conclusive as far as expected effects on environmental sensitivity.

Connections to other people may also play an important role in determining environmental concern. Torgler and Garcia-Valinas (2007) use membership in a voluntary organization as an alternative measurement following the social capital literature, showing that high social capital correlates with a greater preference to prevent environmental damage. Further, Macias and Nelson (2011) look at the *diversity* of social connections in their work, showing that even weak ties with others could be positively correlated with environmental concern. They suggest this is due to these weak ties as a network through which an individual can be exposed to differing perspectives than the dominant paradigm of economic growth and low environmental concern. Miller and Buys (2008) suggest that social capital may be responsible for positively effecting water-conserving behaviors in drought-ridden Australia. The effect of social capital is such that Adger (2003) suggests it may be critical in order to collectively adapt to widespread issues such as climate change.

There are several ways for social capital to act to influence environmental concern – at the personal, community, or societal level. Hao et al. (2019) find through structural equation modeling in a Chinese study that the ways people think and act towards others

(for example, trusting in others) influence the ways they think and act towards the environment, including making sacrifices for environmental benefit (see also Macias & Williams, 2016). Cho and Kang (2017) increase the scale of observation: using structural equation modeling on a survey of river communities in South Korea, they find that while the person-level construct of community ties can predict private environmental behavior, the community-level construct of social capital can predict both private and public behavior. Social capital may act through sociopolitical forces, as well. For example, recall that as members of the dominant paradigm, elites may exert a disproportionate amount of influence on public environmental concern (Brulle et al., 2012).

For a study set in Appalachia, most social capital may stem from friend and family relationships, owing to the strong family ties suggested to shape the cultural landscape by Woodard (2011). Yet, what part considerations of politics may play remains as yet unseen. Further, a cohesive picture of how social capital affects environmental concern is not yet well described (Macias & Williams, 2016). However, the preceding literature paves the way for us to understand the significance of including social capital within an environmental sensitivity context.

Education / role of knowledge

Participation in outdoor recreation and place attachment, as well as social factors, are potentially inherent characteristics that the college student brings with them to higher education. As the preceding discussion emphasizes, these aspects are by no means simple; yet the role of higher education in further shaping a student's personal perspective adds another layer of complexity. Though not strictly the panacea it is

sometimes hoped to be, the importance of *knowledge* plays a part in environmental concern or, for these purposes, sensitivity. Though Heberlein (2012) cautions against the idea of simply supplying knowledge to individuals and expecting their attitudes/behavior to change on environmental issues, knowledge may be an important *antecedent* of environmental behavior (Hines, Hungerford, & Tomera, 1987). Importantly, knowledge may serve to inform findings about *consequences* (critical in the Value Belief Norm theory, Stern et al., 1999) and help to develop *norms* influencing environmentally responsible behavior (Bamberg & Moser, 2007; Heberlein, 2012). Even in situations where individuals hold positive environmental attitudes, a lack of knowledge can be a substantial barrier to behavior. For example, in a discussion specific to environmental sensitivity, Beery and Wolf-Watz (2014) suggest that cognitive knowledge is necessary in order to develop "intelligent concern" for surroundings.

Within this discussion, the terms *environmental science* and *environmental education (EE)* also need to be distinguished; *environmental science* describes a natural science content area, while EE retains at its core a specific intent to foster environmentally responsible behavior (Hungerford & Peyton, 1976; Roth, 1970). While environmental science courses primarily exist as vehicles for scientific information, opportunities exist to incorporate EE characteristics as coincident to the general ethic of the discipline. These avenues are naturally implicit rather than explicit; for example, discussing the concept of sustainability in a basic environmental science course typically invokes conversation of poor conditions in developing countries and ethical considerations. In addition to the incorporation of EE, fundamental to any environmental

science course is the basic knowledge of issues and problems and their corresponding impacts on the natural environment. In addition to the wide survey of topics presented in a basic environmental sciences course, possible examples from more specialized courses include information presented on soil loss and degradation in soil science courses, effects of eutrophication in water quality courses, and ramifications of overharvest in fisheries courses. Taken in concert, the ability within environmental science courses to create raised awareness via knowledge of issues, in addition to opportunities for EE, may have as yet unexplored potential to affect environmental sensitivity (Figure 2).

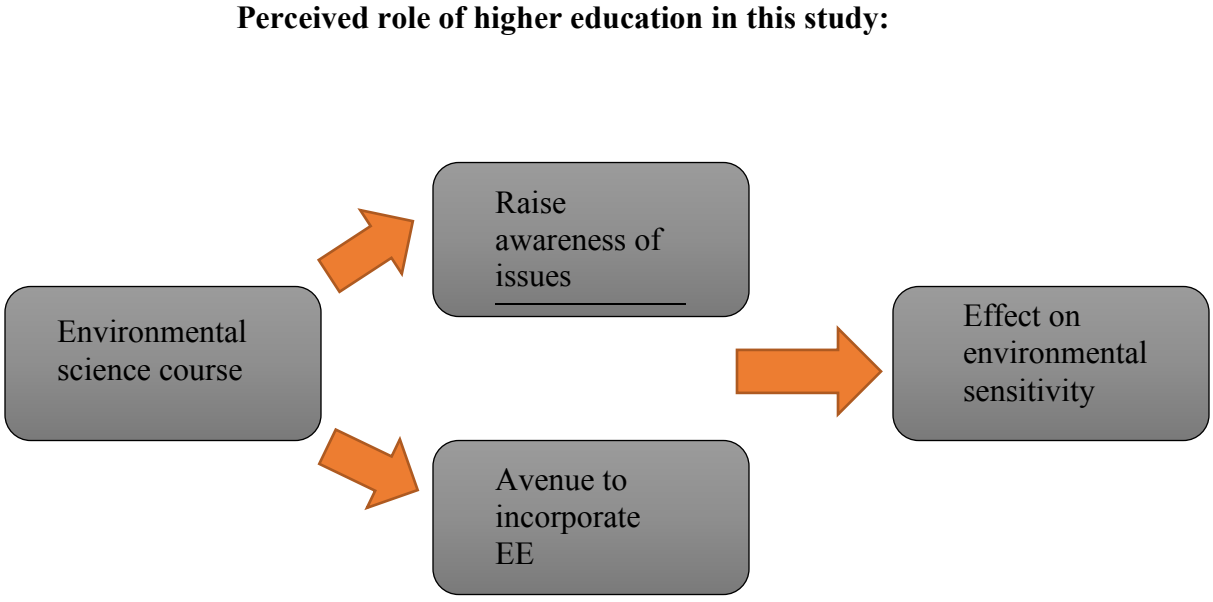

Figure 2. The perceived role of higher education in this study. Courses taken within the Environmental Science, Safety, & Health and Wildlife Conservation programs (containing overlapping curricula) offer avenues to 1.) raise awareness of environmental issues via content knowledge (not always sufficient by itself to produce, but an important precursor to, pro-environmental behavior and 2.) incorporate EE, either explicitly or implicitly. These opportunities taken in concert may have as yet unexplored potential to positively affect environmental sensitivity.

Environmental pedagogies which aim to raise awareness of issues and promote environmental values may take several forms. Examples include the previously discussed environmental education (EE), Education for Sustainable Development (ESD), and ecopedagogy. Debates currently exist as to which form is most effective (Jucker, 2004; Kopnina, 2011); EE may be criticized for de-emphasizing the significance of human interests, while the definition of "development" and its effects on what should be sustained are questioned in ESD (Misiaszek, 2016). Ecopedagogy, which is less known than EE and ESD outside of Latin America, focuses on understanding the connections between social processes, often involving conflict, and environmentally harmful acts carried out by humans. This particular teaching focus may often be hidden in education due to politics, and its essential principle is the impossibility of separating the social from the environmental with an interest towards environmental justice (see Gadotti & Torres, 2009).

Summary

Historically, literature has shown a disparity between environmental values of urban and rural residents, with higher pro-environmental values associated with urban locales. The two most prominent explanations for this disparity involve the concepts of differential exposure and extractive commodities. However, a number of studies have shown a blending of the lines between the traditional rural-urban dichotomy with regard to environmental values. Focusing this broad view through the lens of Appalachian college students reveals the possibility of exploring this furthering trend.

Recall that *environmental sensitivity* is a special term that describes feelings of concern for the environment from an empathetic perspective (Hungerford & Volk, 1990; Metzger & McEwen, 1999), but is nuanced in that it directly relates these affective feelings back to formative experiences (Chawla & Derr, 2012; Beery & Wolf-Watz, 2014). Within the study context of Appalachian college students in an Environmental Science or Wildlife Conservation program, a study of place and place attachment is relevant in that place provides the backdrop against which these experiences take place. When considering the importance of the physical environment to conversations of place, does time spent in nature (via outdoor recreation and other experiences) and associated with place have any effect on environmental sensitivity?

Social factors such as religion, politics, social capital, and educational experiences might influence the underpinnings of concern. However, it is still not fully known to what extent, if any, higher education in the environmental sciences may influence environmental sensitivity. How might these factors act, in this study context, to affect environmental sensitivity? What role does participation in higher education play, and what contextual experiences (e.g. classroom activities, new interpersonal relationships) allow this role its efficacy?

Much work concerning environmental values, issues, etc. has been done through survey instruments; yet, ethnographic approaches exist. Kempton, Boster, and Hartley (1995) as well as Hanada (2003) explore links between spiritual values and the environment. Satterfield (2001) studies concerns resonating with humanistic and biospheric altruism. Dietz, Fitzgerald, and Shwom (2005) note that the ethnographic

work in this field is respected, but not widely used due to labor intensiveness and difficulty in generalization. However, Wolsko (2017) calls for qualitative research to add understanding to the liberal-conservative divide on reactions to environmental appeals in an effort to create attitude change. There are cases in which deeper can get us further, echoing the acknowledgment of Stedman (2003b) even as he contends for rigorous hypothesis testing of place effects in forestry research. Therefore, we find the stage well set for a qualitative exploration of environmental sensitivity within this study context.

This study may have several limitations. First, the credibility of qualitative work is sometimes questioned. In particular, the scientifically based research (SBR) movement (connected to the No Child Left Behind Act of 2001) espoused by the National Research Council has effectively roadblocked much qualitative work. The SBR movement represents a strictly evidence-based, positivistic epistemology (Maxwell, 2004), resulting in a preference for only causal models with independent and dependent variables. Lather (2004) suggests that as a result, high ranking decision makers such as those in governmental funding positions are unprepared or unable to properly evaluate qualitative analyses. However, the environmental field and attendant issues are highly interdisciplinary, requiring discourse between both natural and social scientists in a near myriad of context-specific situations. Taking that discourse one step further involves congress between both quantitative and qualitative researchers.

As this study takes place in a specific context, limitations may exist in degree of transferability to other contexts (discussed further in the following section). Study participants were all members of the same educational institution; more perspectives

could be garnered given a wider range of educational contexts or greater number of participants within the same institution. However, in a work discussing the contribution of place to social-ecological systems research, Masterson et al. (2017) state that the qualitative and quantitative traditions need not be oppositional, but should instead exist as complementary, with each discipline providing its respective insights which can later be conjoined. My aim with this study is to contribute to that insight in an effort to better understand these concepts, with the hope that our environmental future can be better tomorrow than today.

Chapter 3: Study Methodology

This section will explain the methods I used to explore the three research questions of interest. I will explain my choice of qualitative tradition, discuss my positionality and ethical considerations, describe the study participant sample and location, and clarify recruitment methods. Further, I will describe the interview process as well as method of data analysis. A discussion of qualitative credibility is also included.

To qualitatively answer the questions of various effects on environmental sensitivity within the context of an Appalachian community college education, a researcher must first choose which qualitative tradition and methods would be best suited for the task. Although Appalachia can be considered to have its own culture as a region of the United States (Weaver & Holtkamp, 2016), and ethnographical methodology retains an interest in cultural interpretations at its core (Jones, Torres, & Arminio, 2013), my primary interest lies in a focus on particular phenomena (e.g., experiencing higher education in environmental sciences) situated within the regional context. This study therefore attempts to follow a phenomenological methodology, incorporating an in-depth inquiry into a topic with a small number of homogenous participants who have experienced the phenomenon (Glesne, 2016), and focusing on the uniqueness of the lived experience of the individual (Jones et al., 2013). I approach this study using this

methodological framework from an aim to understand participants' experiences from their perspectives (Rumann & Hamrick, 2010). More detailed methods of this approach follow.

The participants who provide the source of data in this study are college students who share the experience of education in the environmental sciences. The study is located at a community college which serves the Appalachian Ohio region, and offers a wide range of two-year technical degrees, two-year degrees which serve as preparation to transfer to baccalaureate programs at universities within the state, and a four-year Electrical Engineering baccalaureate program. Among the two-year degrees offered are Associate of Applied Science in Environmental Science, and Associate of Applied Science in Wildlife Conservation.

My positionality within this study is related to my work as adjunct faculty at this college, teaching a wide range of science courses within the Wildlife Conservation and Environmental Science programs which include lab and field work portions in addition to regular lecture periods. I teach an average of two classes per semester, year-round, including summer session. Because of my regular presence on campus even as part-time faculty, the consistency of having students in multiple courses while pursuing their degree over two years, and the less-structured nature of lab and field work compared to lecture, I am afforded the ability to get to know students in these programs relatively well. Many students, especially nontraditional ones, are apt to converse with me directly; other times, for example riding in a van to a field location, I hear many of the open conversations among students. These conversations strike me differently than between-

class dialogues I have typically heard during my own time as a student at a large urban university. Especially in the fall, much of the talk centers on deer hunting, for example. The same can be said for fishing, depending on the group's primary interest. I hear students telling stories of where they grew up, sometimes linking these properties as the backdrop for their hunting and fishing recounts. Other times, they may trade stories about good places to go for these activities (e.g., certain local state parks for fishing). As their instructor, I might assign them a project where they have to put several ecological principles into practice as a land management activity for wildlife, and often times, they will select their own properties, which can be of large acreage. It is striking to me that I have had multiple students complete these projects not just as assignments but as real plans for what they would like to do with their own land. I also might, in conversation with them, learn something about them personally such that they recently lost a special family vacation property, or in the case of one individual, that he was a highly politically conservative, retired coal miner who had spoken in Washington, DC on behalf of Friends of Coal. This close contact with students, at times feeling like an immersion into their worlds, is what generated my research questions regarding the effects of outdoor recreation and place, and why such students might pursue an environmental track in their college education. I did not pursue preliminary focus group interviews on account of this "pre-immersion" due to positionality, which served as a method to generate research questions and learn about language, norms, and customs of the sample (Glesne, 2016).

I chose to explore these research questions at this institution because of the advantage and insight that this immersion into the context of participant lives has given

me, as well as an understanding of the educational context within which their stories take place. One of the aims of phenomenology is to describe the experiences of a small number of homogenous individuals who have experienced the same phenomenon (Glesne, 2016). Selecting all participants from the same institution ensures that their educational experiences, as delivered, qualify as a single phenomenon (via the aims of this study, which is to explore effects of place, outdoor experience, and social effects specifically within the context of higher education). Yet, their perspectives on this education, typically delivered over the course of two years by the same handful of instructors, may differ in what each participant noted as significant.

Recruitment consisted of identifying students within the Wildlife Conservation and Environmental Science programs who have been noted as expressing particular enthusiasm for an aspect of the natural environment (e.g., a particular species) or outdoor recreation (e.g., fishing), with special attention paid to recruitment of those individuals who have expressed potential for place attachment (e.g., described a loved vacation destination or local place such as inherited hunting property). I sought to include a relatively equal mixture of gender and attempt to incorporate various age ranges, so as to maximize a variety of perspectives. I excluded any students that I currently had in class and recruited only participants who had either graduated or had taken a course I taught in the past. Once about 15 potential participants with the characteristics above were identified, I contacted those persons via email or told them in person about the study. I provided information about the study so that they could make an informed decision whether to participate. They were told that their decision about participation in the study

would not affect their relationship to either the college they attended or the University conducting the research in any way. For the 11 persons that expressed interest, I followed up with an official email invitation to participate in the study as well as provided a consent form so that they could review it prior to participation. I also provided a copy of the form during the in-person meeting to sign prior to the interview.

I followed phenomenological interviewing (Merriam, 2009) in a semi-structured format, with questions constructed to access structure and meaning of the particular phenomena (Jones et al., 2013) in order to explore themes related to environmental attitudes, ties to outdoor recreation, place attachment, and the effect of higher education in environmental science on environmental sensitivity. These interviews took place on an individual level and averaged about 50 minutes across the eleven individuals. Guest, Bunce and Johnson (2006) find that theoretical saturation – the point at which no new themes emerge from participants – may occur between 6 and 12 interviews, though more may be appropriate for even deeper understanding (Hennink, Kaiser, & Marconi, 2017). This study follows the pattern of Guest et al. (2006) in that even new codes that emerged from participants, as the study progressed, all began to support existing themes (designated in this study as "concepts") rather than producing new elements. This is the point commonly known in qualitative research as theoretical saturation, upon which much of the rigor and credibility of qualitative research (pursuant to grounded theory methods) is based. Of note, Hennink et al. (2017) suggest that the advantage of including more interviews lies in further fleshing out these thematic concepts, even after theoretical saturation is reached. For example, the authors suggest that inclusion of a greater number

of participants can add even more codes to existing concepts, which may guide the researcher's insight into which of these concepts might be more significant than another, if that is the direction of the study. However, the focus of this study was an exploration of the relationship between several factors and their potential interactions and effects, without specific focus on which concepts are greater or lesser in significance for this group of participants. Therefore, the original concept of theoretical saturation following Guest et al. (2006) is deemed sufficient for qualitative rigor in its production of conceptual themes and their relation to one another.

Interviews were conducted in a neutral location on campus property, in an area where participants would not be overheard, from mid-July to mid-August 2019. The area, which is modeled after a natural resources-style building and is heavily used by students in both the environmental science and wildlife programs, is a familiar, well-liked location to students and was selected with intent to maximize participant comfort. Times were scheduled according to the convenience of the participant.

Participants were asked to describe places that are especially meaningful to them, their experiences in outdoor recreation, and experiences in environmental science education, and how these factors may or may not affect their feelings towards the natural environment. I developed questions exploring participants' residence from a rural-urban perspective (Armstrong & Stedman, 2019; Gifford & Nilsson, 2014), potential effects of place attachment (Stedman, 2002; Vorkinn & Riese, 2001) including place meanings (Brehm et al., 2013; Masterson et al., 2017), outdoor recreation and nature experience (Larson et al., 2018; Wilson et al., 2014), and social effects such as religion, politics, and

social capital (Hao et al., 2019; Liu et al., 2014; Munoz-Garcia, 2014) on environmental sensitivity. As these experiences took place within the context of higher education, I also designed questions to access participants' educational experience and potential effects of this experience on environmental sensitivity (Heberlein, 2012; Beery and Wolf-Watz, 2014). A full list of questions can be referenced in Appendix A.

The idea of qualitative research being subject to concerns of "validity" is sometimes contested (Schwandt, 1996) as validity is seen as a social construction by some (Kvale, 1995). However, Tracy (2010) argues that having some form of flexible criteria for *credibility* (as opposed to the *validity* term used by positivistic research) is important. *Reliability* is a term under the topic of credibility that explains the fit between what occurs and what is recorded (Lather, 2007). Practices to achieve reliability which I have pursued here include mechanized recording of data, use of participant quotations, participant confirmation of accuracy of observations, an active search for discrepant data, and detailed field notes in the form of a reflexive journal. In practice, participant confirmation entailed asking clarifying questions to participants during the interview or restating their statement back to them to confirm accuracy, as well as member checking during the writing process. I employed an active search for discrepant data by including in my analysis even those statements by students that felt no particular place attachment, did not express a family history of outdoor experience, or did not perceive connections between social factors and environmental sensitivity.

Qualitative work differs from other research traditions in that its generalizability is not based on sampling, but rather a reader assessment of transferability (Erickson,

1986; Lincoln & Guba, 1985). That is, the reader of the study should assess the degree to which findings are transferable to their own context of interest. Thus, the study may achieve resonance with readers even if based on data from a specific participant sample experiencing a particular phenomenon at a specified place (Tracy, 2010).

Study Sample

Study participants are all either past or present members of the Environmental Science or Wildlife Conservation programs at a community college serving the Appalachian Ohio region. Of the 3 Appalachian community colleges in Ohio offering programs in an environmental or related field, only 1 institution offers degrees in both Environmental Science and Wildlife Conservation (rather than one or the other). Students in these programs might offer a broader perspective than those drawn from one educational program alone. I chose to sample from these programs in following the environmental sensitivity literature's original method of focusing on individuals who already appear to be invested in nature (e.g. Guiney & Oberhauser, 2009; see also Bustam et al., 2006). I attempted to include a wide range of age and gender when considering participants, resulting in 5 females to 6 males, and 5 traditional college-age students to 6 of nontraditional college age. The sample is described in Table 1.

Pseudonym	Gender	Age range of college student
Alice	Female	Nontraditional
Brian	Male	Traditional
Darryl	Male	Nontraditional
Dustin	Male	Nontraditional
Hannah	Female	Traditional
Joe	Male	Nontraditional
Justin	Male	Traditional
Kimberly	Female	Traditional
Lucy	Female	Traditional
Matt	Male	Nontraditional
Tabby	Female	Nontraditional

Table 1. Summary description of participant sample.

Alice, Brian, Darryl, Joe, and Matt are all either landowners of relatively large acreage, or currently help a parent manage a large acreage, contributing to an ownership of place perspective. Tabby is a primary caretaker of two children due to her husband's job as a truck driver requiring him to be away from home, which may give some insight into how children might affect an individual's considerations of outdoor recreation and place. Two participants, Kimberly and Alice, are of special interest having moved to

Appalachian Ohio from Maryland and northern California, respectively, providing a contrasting place perspective to those who have grown up in the area. Lucy and Justin are both able to tell stories of growing up on a large acreage but now living in a town, and Dustin and Hannah provide examples of those who have always lived nearby cities, yet still retain a strong outdoor recreation culture. Therefore, grouping individuals according to these categories demonstrates a potential for diverse perspectives on place, outdoor, and social effects though all experience the phenomenon of receiving an environmentally-based education at the same institution. All participants were reflective of the fact that race in this area is predominately non-Hispanic White, and conclusions drawn from this study – especially in the interests of transferability to other studies – should be interpreted in light of this perspective.

The specific selection of an Appalachian community college study context provides a contrast to student perspectives at a large urban university, for example, relative to matters of place. Students attending a community college are likely to be living in the surrounding area, often times having a strong history in, and familiarity with, that locale. As discussed in the positionality section, I often heard student conversations revolving around local areas deemed beneficial for outdoors recreation, or telling about their own properties and the activities they did on those properties. It was rare that any sort of out-of-state trip was mentioned, by contrast to students at a large university who may often take research or study abroad opportunities as part of their schooling, in addition to traveling home to visit family on holiday breaks or even an out-of-state-or-country trip as vacation. In this way, sample selection strengthens the contribution of this

work to a better understanding of place matters, by contrasting to issues of non-place relevant to more mobile university students (see Nakagawa & Payne, 2017, for an example).

Data Analyses

The aim of this study was to contribute to the theoretical understanding of potential effects on environmental sensitivity, within a particular context. As such, I used grounded theory methods for analysis following Corbin and Strauss (2008). Eleven participants responded via individual interview to a set of questions designed to spark discussion about nature experience, place attachment, outdoor recreation, social capital, college education, religion, and politics, within an environmental sensitivity context. I transcribed eleven interviews using a computer word processor, and, following, printed interviews out on paper for the coding process.

For each interview, I used the hard copies of interview transcriptions to perform line-by-line coding. Coding involves recognizing an idea in data that can be represented under a conceptual name (Corbin & Strauss, 2008), usually expressed as an action phrase (e.g. "going outside with family"). Line-by-line coding entails analysis of each line of the interview in an attempt to discover what larger concepts can be generated from the data. From these codes, I produced a codebook where all codes were listed under the interviews within which they were generated, especially noting instances where codes were used for multiple participants.

Codes used more than once became part of a common codebook to keep track of which codes might belong to a larger framework in being shared among participants

(Appendix B). As I analyzed the data and applied codes to the transcripts, I recorded my analytical thoughts and process in a separate memo book following Corbin and Strauss (2008). The memo book allowed me to write thoughts on each common code (i.e. used more than once among participants) while referencing individual codes (specific to a participant) where necessary.

From these data, broader concepts emerged, supplied by participants' perspectives (Figures 3 and 4). Having noted during the coding process that some codes appeared to be more related to each other than others, I sorted common codes into broader conceptual categories by producing a list of concepts (Appendix C). These concepts can stand on their own in terms of research and analysis; yet, taken together, each becomes an important component in the story of effects on environmental sensitivity. Pursuant to the constructivist perspective (Glesne, 2016; Jones et al., 2014) within which I have located myself as a qualitative researcher, this arrangement of concepts remains my own interpretation – others may find the data speaks to a different understanding.

Codes and concepts uncovered can be used to guide future studies in exploring the connections between outdoor recreation/nature experience and environmental sensitivity, while also considering what influences social effects may have and what role education in environmental sciences can play in shaping these connections. Further, this study explores how matters of place can form the basis for discourse on environmental sensitivity in a particular rural, economically disadvantaged setting. In this manner, I attempt to fulfill the phenomenological aim of uncovering an essential structure of a

particular phenomenon, that may in fact resonate with many individuals (in Jones et al., 2013).

Chapter 4: Results

Eleven interview participants responded to a set of questions designed to spark discussion about nature experience, place attachment, outdoor recreation, social capital, connection to nature, college education, risk, religion, and politics, within an environmental context. From these data, broader concepts emerged, supplied by participants' perspectives. These concepts can stand on their own in terms of properties and dimensions; yet, taken together, each becomes an important component in the story of effects on environmental sensitivity. The concepts sorted themselves into two distinct storylines – that of place attachment and outdoor recreational effects (noted as Theme 1), and a separate discussion of social effects (Theme 2), represented by Figures 3 and 4, respectively. Pursuant to the constructivist perspective (Glesne, 2016; Jones et al., 2014) within which I have located myself as a qualitative researcher, this arrangement of concepts remains my own interpretation – others may find the data speaks to a different understanding. The concepts are arranged in the following figures as a road map for the more detailed discussion which follows.

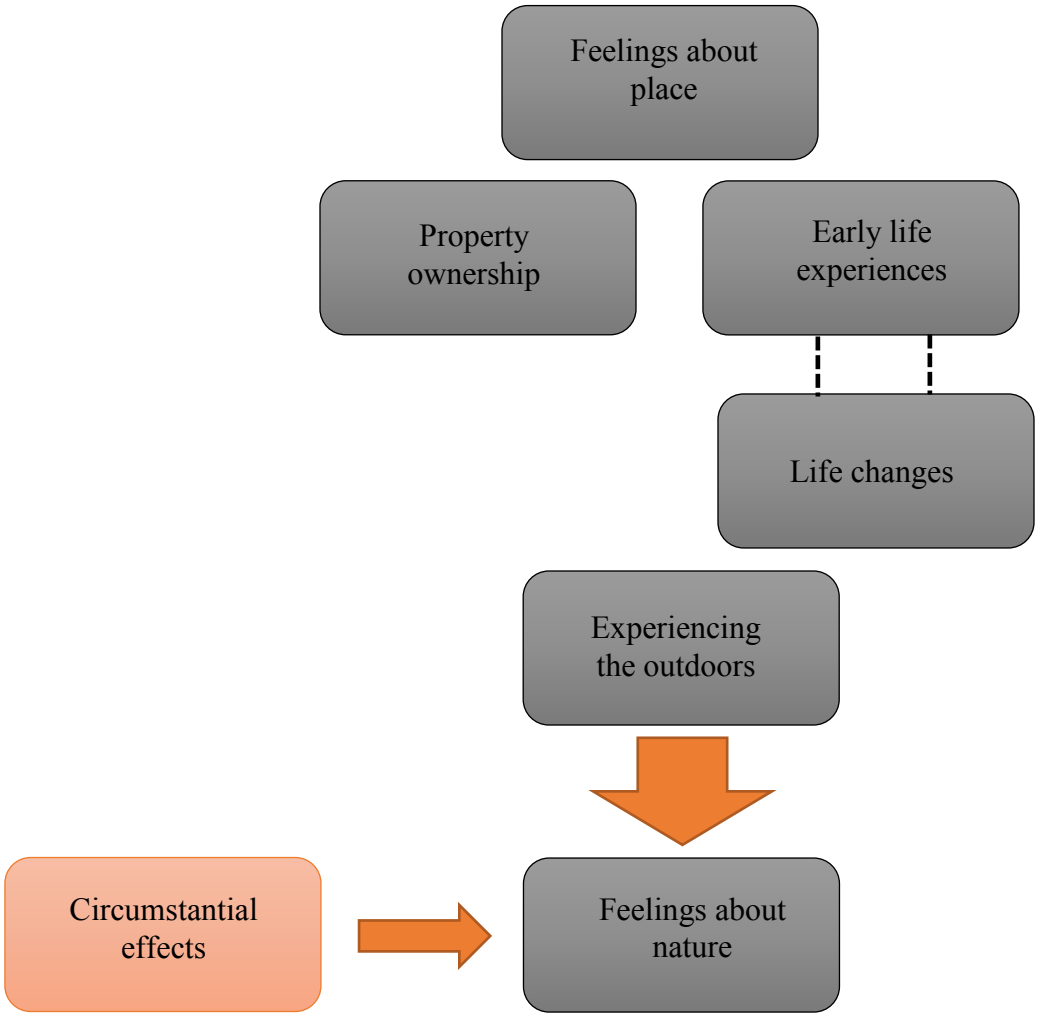

Figure 3. Theme 1: Broad concepts emerging from participant interviews regarding place and outdoor recreation. Feelings about place, property ownership, early life experiences with resultant life changes, and experiencing the outdoors all exert effects on feelings about nature. This influence can be mediated by circumstantial effects, which the participant may have no control over. For example, if outdoor recreation is considered a part of experiencing the outdoors, restricted access to outdoor recreation may attenuate its ability to influence feelings about nature.

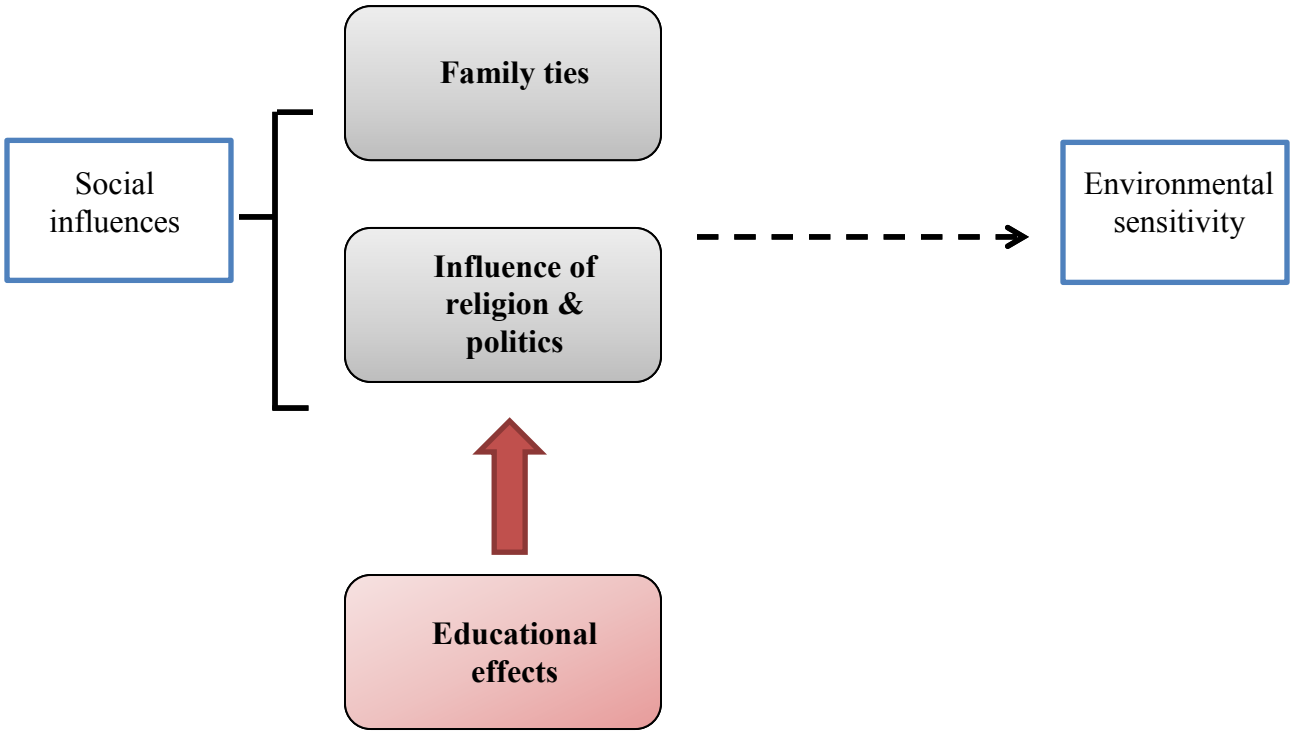

Figure 4. Theme 2: Broad concepts emerging from participant interviews regarding social effects (concepts are shown in bold font within shaded boxes). Social influences such as religion, politics, and social capital (for example, family ties) exert effects on environmental sensitivity. Further, education can play a role in increasing environmental sensitivity via removal of knowledge barriers. Of note, effects of social influences may be attenuated by educational effects. For example, encounters with college educators or other students with an opposing political viewpoint may serve to better ameliorate a politically "deadlocked" position, which is cited as a source of frustration to participants in the present civic climate.

Theme 1 Concept: Feelings about place

Given that place is still found to be relevant to modern research conversations (see introduction, above), we should ask how individuals describe themselves when locating their "place." Though, in accordance with a phenomenological perspective, participants shared the commonality of attending an Appalachian community college while pursuing an environmentally-tailored degree program, and as a result have ties with living in the area, differences exist among individuals with how they locate themselves.

Being rural

Appalachian Ohio, where the college is located, is a largely rural area. Rurality vs. urbanity has at times acted as a demographic thought to influence environmental concern. For example, the hallmark study by Van Liere and Dunlap (1980) included urban residence as one of 5 key demographics thought to predict environmental concern, due to urban dwellers' proximity to harmful environmental effects. However, more recent works such as Fransson and Garling (2009) and Liu et al. (2014) caution us that these demographic "predictors" are not set in stone and change with society's changes. Specifically, Fransson and Garling (2009) find only two studies in the early 1990s to support the urban-resident hypothesis, noting that generally increasing environmental concern may attenuate historically assumed demographic differences.

What does being rural really mean? To Alice, the place where she grew up is a "little town, 4000 maybe" that exists in the foothills near Yosemite National Park. To Brian, his home in Ohio is "in the cornfields, nothing too exciting." Darryl's hometown is "200 people, surrounded by farmland and woods." Alice's town could very well be a host

for wealthy tourists, a very different situation than a town of 200 in Ohio, yet both are rural. Even these few differences should caution us against the straight dichotomy of rural-urban as a demographic predictor for environmental concern.

What access differences exist between these locations? For Alice, going to see the redwoods was not the journey of a lifetime that it might be for other travelers. She describes herself as "lucky" to have that access – a circumstantial effect. Of interest, Brian's comment of "nothing too exciting" could be perceived one way at face value, but the entirety of our discussion suggests otherwise. He talks about living there all his life, only straying as far as portions of southern Ohio for vacations, and his own property gives him much access to the activities he truly loves to do – trapping and hunting. He is using "exciting" in one sense – maybe a sense he feels is generally acceptable, as though most people would not find much to do there – yet his entire interview is littered with activities he likes to do and he does not stray far from home. Individuals may unconsciously assume others will take a certain view of their located place; yet bound to a certain place where enjoyable activities are accessible, place attachment thrives, possibly via dependence on that place (Stokols & Shumaker, 1981; Vaske & Kobrin, 2001).

Having a family history to a place could strengthen attachment. Justin and Lucy both live in a city apartment that suits their current needs and they enjoy the independence. However, both also describe a sense of attachment – expressed through missing, and enjoying access to – their parents' properties. Lucy says "we were 3 miles out in the boonies so my dad always called it 'down in the holler'." Of note, Justin's

family has been there so long that the road he grew up on shares his last name, since his great-grandfather was the first house to be put on the road. In fact, the view of Hay (1998) states that the 'ancestral' typology of place is one of the only typologies that can develop a 'true' sense of place (but see Kaltenborn & Williams, 2002; Stedman, 2006 for an opposing view).

However, take note of the negative case. Dustin grew up in a mid-size city in Ohio and says "I've always been in the city," later on speaking of an actual need to be connected with the city. Yet he qualifies "…but I do like outdoor stuff." Dustin enjoys the same activities that the more rural participants do: canoeing, fishing, camping, off-roading. However, as a nontraditional college student, he talks about the parks in the city as being safer when he was growing up than they are today, where he had ability to do these activities; the rural-urban question of environmental concern or, for this study, sensitivity, could ultimately be attenuated by opportunity and access. Further, I see corroborating evidence to the cautions of Fransson and Garling (2009) regarding unilateral assertion of reduced environmental concern in rural areas (given that most students expressed a rural heritage, yet all participate in either a Wildlife Conservation or Environmental Science degree program).

Being nonnative/having displacement difficulty

Another way individuals may locate themselves within space and place is "being nonnative." The dimensions of this term seem primarily to be a product of scale (see Lewicka, 2011b for a discussion on the relevance of place scale). For example, Alice has crossed the country from northern California to live in southeastern Ohio, and describes a

vacation to the east coast. She expresses disappointment with the litter culture she saw on the east coast (where litter is culturally normalized to her view, by contrast to her perspective of the west coast) as well as the climate of Ohio (with the unfamiliar humidity of summers making outdoor activity less desirable). I noted that disappointment as an instance of "having displacement difficulty." Kimberly has moved to the area from coastal Maryland, but did not mention specifics things about Ohio that she dislikes; rather, just that it has never become home. Having moved during a difficult time in her life (preteen) when she was already "mad about everything," she still thinks of Maryland as her home. She says Ohio is beautiful in its own way but that she is not really very attached to Ohio. This lack of attachment may not result only from transferring from state to state but circumstances – she not only moved from the coastal area here, but to a house in the city where she lost easy access to natural places. In fact, Kimberly remarked that she could easily see herself becoming more attached and feeling more as if Ohio is home if she had better or easier access to natural places here in Ohio. Kimberly's case is particularly difficult because she does not have a car, further restricting her access.

By contrast to Alice and Kimberly, Darryl lives in the same general region as the area he grew up in (southeastern Ohio), but in speaking of the particular small town he grew up in, he says "now I don't hardly know anyone," which is a different sort of displacement – moving just a little bit out of his "native" town. It seems that "nonnative" can be on a scale from town to countrywide (see Laczo, 2005 for work on attachment from local scales to country-level). Also considering product of scale, as a child Hannah became very upset moving from her small lakeside community to another mid-sized town

in Ohio – not at all on the scale of California to Ohio. However, it was enough that to a child, it upset her world to attend a different school. She mentions being able to walk to everyone's houses at her previous home.

I do notice that Alice spoke a little more about difficulty and disappointment; for Darryl it just seemed to be a matter of losing a portion of social capital through networking ties. For example, he speaks of not having access to a childhood spot because he "didn't know whose driveway" he would be parking in to access it anymore. It seems greater distance can augment the difficulty, since part of Alice's disappointment included cultural views (e.g., littering) and climate differences (humid summers).

Another two points along the continuum of being nonnative would be near the extreme end (Matt states he lives within 15 minutes of where he grew up and has never lived elsewhere), as well as Tabby's living "all over" – including cities both in and outside of Ohio – but returning to her present community to bring the continuum full circle. Both these points – as well as the other situations here – bring up different conversations as far as access to nature changing throughout the life course. For example, Matt did not stray far from the area when he was younger, because he had all he needed where he was (basically, 1100 acres' worth of area to hunt due to making relationships in his area and obtaining permission). But now, he likes to spend money on going out and seeing new places and hunting out west when he does hunt. Tabby returned to raise her family in an area she once lived in; but due to not having much money or good credit, her family purchased a house in a neighborhood that she considers unsafe – different from her father and grandmother's acreage. This situation is something that causes stress for

Tabby. A person could therefore be located along a continuum of both native vs nonnative and having access; both factors should be taken into account in matters of place attachment.

For some, perceptions of being nonnative vs. native may affect how the "outsider" is viewed. (For a discussion on the negative association between neighborhood diversity and community attachment, see the works of Putnam, 2007 and Stolle, Soroka, & Johnston, 2008). For example, Brian made a comment about knowing someone who is not local has been around when he comes across a fishing spot that has been littered. Here, "nonlocals" (and thus, nonnative on an unspecified scale) are equivocated with people who do not care about the place. There are certainly nonnative employees working the fracking jobs where Dustin lives. Dustin mentions that the local workers are treated more like "disposable employees." Being nonnative in the discussions during this study seems to carry a negative connotation to this point. It creates hardships for the people who have moved, and the locals may view those individuals differently. However, one common thread to help people through these transitions is what *general type* of place they prefer. For example, Alice enjoys her property very much though she experiences difficulty in Ohio versus California as a whole. Dustin talks about always needing a connection to the city and growing up in a mid-sized Ohio city, but he did not mention any particular difficulty living in the smaller city where he currently resides. Hannah may not have wanted to move growing up, but her parents chose to drive her so she could attend the same school. Even in difficult transitions, individuals may negotiate preferences in order to achieve the best outcome. In so doing, they may, over time, pass

through the increasing gradations of "insidedness" (using a total alienation from place as a starting point) suggested by Relph (1976)'s work.

Literature provides us the foundation to show that place is still important in modern society. Yet, evidence exists that place is important within the conversations of this study, as well. One way in which I see the effect of place is with those individuals experiencing displacement difficulty. When speaking from a nature perspective, what can cause individuals difficulty when they move to a place that isn't "home" and become "nonnative"?

Kimberly is in her early twenties and has lived in Ohio since middle school, but even given that length of time, she has not been able to see Ohio as home. She lives in town with no car and restricted access to nature which is very important to her, and every trip to be in nature has to be planned out. Kimberly considered that being able to more easily access the nature places in Ohio that do make her feel more at home could very likely lead to her becoming more attached to Ohio.

Tabby has lived in different areas around Ohio and even in New York, but she does not express particular difficulty with living in Ohio as a whole. For her, the difficulty lies in where in Ohio she lives; specifically, a bad part of town. Instead, she would rather live in a rural area where she can have some of the opportunities she desires such as space for her kids to play, being able to raise chickens, shoot bows, and have greater safety. Her present home feels crowded to her, solicitors are frequent despite signage, and at times she has heard gunshots. This might be especially difficult for her since she grew up on her father and grandmother's property, by contrast to Dustin

perhaps who always wants a connection to the city. These data do not necessarily suggest that where a person grows up is deterministic of their future desires (see Felonneau, 2004 for work on the role of individual differences in preferences for urban or rural communities), yet it is interesting to note the differences between cases. Of further note is the particular stress caused to Tabby by the surrounding environment due to her concerns for raising children. Women are found to express greater environmental concern than men in many studies (Hunter, Hatch, & Johnson, 2004; Xiao & McCright, 2012). While not all females are primary caretakers of children and not all primary caretakers are females, I note that caring for children represented a significant factor in Tabby's ethos. Strapko, Hempel, MacIlroy, and Smith (2016) note that an ethic of care is found to supersede the effects of gender in that it may be gender neutral. From this perspective, caring for dependents might represent a more crucial piece to the environmental sensitivity puzzle than strictly gendered considerations alone.

One metric that is sometimes used in measures of place attachment is home ownership (Brown, Perkins, & Brown, 2003; Jorgensen & Stedman, 2001; Mesch & Manor, 1998). Alice owns her own rural acreage, thereby having much greater access to nature than Kimberly, who lives downtown. But because she moved here from northern California, she struggles with the humidity here – it makes her not want to do as much outside. She is also put off by water quality issues. Being used to the ability to swim in clear waters such as Tahoe and mountain pools, it was a new experience for her to smell the dead fish coming off the river in Ohio in mid-summer. However, access remains an important issue despite this difficulty – Alice loves her home and talks about taking it for

granted, whereas Kimberly's focus is on earning enough money to purchase a car, and be able to apply for jobs outside Ohio. Like the idea of being nonnative, having displacement difficulty may exist on different levels of intensity related to scale. As a corroborating example of the effects of these levels of scale, consider the multinational survey by Laczko (2005), where U.S. citizens felt more strongly attached to their state (than to neighborhood or city). The displacement difficulty participants felt through moves of this scale could be mitigated by increasing nature access, as Kimberly states; or ability to discover new places, as Alice recounts.

Diminishing places

Another way in which we see the importance of place within these discussions lies in the concept of diminishing places. Although previously in the conversation, Dustin mentioned the need for some places in the natural environment to be altered "because humans are here," he also balances that statement with "some places…are just too beautiful, why would you ruin them?" One of the complications with diminishing places could be that beauty remains relative to the individual when it comes to development. For example, someone might see a hiking path with a waterfall as "too beautiful" to ruin. But, Joe also says, "cornfields are getting wiped out, and big businesses are getting put in," and, "it's awful." To others, simple farm fields may represent a loss of a beautiful place. Matt says that he likes farms and farmers and wants them to keep doing what they are doing, so that buildings do not get put up in their place. He recounts the drive to Columbus as changing over the years to more "spots and plots," and speaks disparagingly about the loss of "mom and pop" stores to Dollar General, for example. In many cases,

loss of place is out of the individual's power – not only due to big businesses. Matt speaks of losing a house at Martha's Vineyard that has been in the family, and a family vacation spot, for years. A relative has decided to sell it, and due to the property value in the area, Matt says "I just can't afford it, I would do something."

When Darryl talks about small-scale places like the kids' hangout pond he grew up with, he suggests that those types of places may be disappearing due to "urban sprawl" and "technology." These two categories appear to be either structurally or individually driven. Some of it, for example urban sprawl, is not individually controlled; but technology may represent a choice where individuals choose to engage with technology rather than their environment (Kareiva, 2007; Louv, 2005). In this way, places may diminish from two separate aspects (but see Fletcher, 2017; Sandbrook, Adams, & Monteferri, 2015 for positive effects of technology on nature conservation).

Creating a place

Diminishing places and having displacement difficulty both represent negative effects of place – specifically, the loss of a certain place. One strategy that individuals could use to mitigate effects due to loss or alteration is "creating a place." Using such a strategy is likened to Lewicka (2011a)'s conclusion that place attachment persists in the modern age through a more self-conscious, active form of attachment (rather than traditional, unselfconscious attachment).

Recall the early literature (e.g. Tuan, 1977 – place as a center of meaning or field of care) that first began to describe place as nonphysical. When Alice talks about moving here to southeastern Ohio from California, she talks about the process of "making her

house a home" and specifically, memories as being what makes the home feeling. "It's not the furniture…it's staying up with Jason until 5 am listening to music and laughing." For someone so displaced from anything representing previous physical home, the nonphysical portion takes on an even greater significance. Also as regards the physical, consider the ability and desire of individuals to create something different than what they are given. This could be another aspect of "making a house a home." When Darryl talks about the tree line he planted around his property, he recounts his exasperation at a brother-in-law for mowing over a section of the growing tree line, resulting in a noticeable hole. But, he says "the way we've done it, it looks nice," indicating making specific improvements to make the hole something his family could live with. He also speaks of his property as "our little place in the world." This perspective provides some weight to including property ownership in measures of place attachment, as well as fitting into the new typology of active attachment in Lewicka (2011a).

Going to new places

As I think about place attachment I want to consider different aspects of place itself. One of these characteristics are places that are "new" versus "old." Hannah mentioned going to the Smoky Mountains as a significant experience in the outdoors specifically because the environment is so different. When Alice was moving with her husband from California to southeast Ohio, they looked ahead on a map to see the different water bodies around the area in anticipation of going to those new places. She talks about when they first moved there, how it was a hobby of theirs to go out and explore new places as often as they had opportunity. Being able to visit these new places

initially appeared to help with place satisfaction, which is an attitudinal judgment about the perceived quality of the place, influenced by place meanings (Stedman, 2002). Alice talks about how if she were to get back in the habit of going out and exploring, she might feel a little more at home and feel more satisfied again.

One surprising concept that emerged during our discussion was the idea that rather than particular places being significant to enjoy the outdoors, all places are important, and even cherished for their novelty. Justin said, "for me they (places) all matter a huge amount…I just like to see new places." Individuals might feel a sense of invigoration by going to new places, and that might be one characteristic of enjoying the outdoors for some. For example Kimberly, with limited access to outdoor spaces in her current situation and not having a car, can really only walk to the small garden park nearby. She says she will do this a couple times during the spring especially but "it's like the same thing over and over…you can only do so much there." Hannah talks about not wanting to walk the bike path over and over with her mother more than a couple times a week in the summer, when she was growing up, and wanting to do something else for a change. And Matt, who has lived in the same area all his life, now enjoys going out and seeing new places, if he's going to spend money in the first place: "Being able to venture (and do) different things…that's pretty awesome." Relative to Matt's perspective, we might expect that increased income correlates to increased mobility and nature access with particularity to "new" places. This finding might exist on different locational scales; for example, a slight increase in income results in more "gas money" to visit local parks,

while a large increase (such as that accrued over a career, in Matt's case) makes out-of-state trips accessible.

Even though I emphasize place attachment both here and in the literature, discussions with participants yielded a surprising amount of affinity for new places. Nakagawa and Payne (2017) caution against dogmatic assertions of place, suggesting not to neglect those aspects of individuals that resonate with mobility, or non-place, characteristics. The authors assert, from a qualitative study of college students traveling abroad, that place and non-place intersect within mobile individuals and that these collisions are characteristic of a postmodern, highly mobile, affluent society (Nakagawa & Payne, 2017). The conclusion I can draw is that, similar to the debate on importance of physical or nonphysical aspect to place, neither place nor non-place effects should be unilaterally assumed in any situation, or ignored at the expense of the other.

The suggestion in literature that place remains important is echoed in those individuals who express displacement difficulty, negative feelings about diminishing places, or remain on either side of being nonnative. However, one way in which individuals might cope with this difficulty is by "creating a place." Similarly, several participants expressed both place attachment (for example, to their own property) yet an affinity for going to new places. Place is significant; yet individuals retain differing perspectives on how that significance is experienced. Further, the dimensions of "being rural" are arranged on a spectrum by which we may question characterizing environmental concern along a straight rural-urban divide. Since I find place to indeed be

important, I will turn now to those perspectives that describe place specifically within an ownership context.

Theme 1 Concept: Property ownership

Property/home ownership is often used as a metric in place attachment studies (see Brown et al., 2003; Jorgensen & Stedman, 2001). This study included a diverse age range of participants, with some students at a life stage of owning their own rural property (allowing frequent, easy access to the natural environment). Participants that are non-traditional, property-owning students or that otherwise have a sense of ownership in some way provide an interesting contrast in this study to participants not displaying those traits.

Place as work/responsibility

Alice and Darryl are both non-traditional students and are responsible for caring for their own relatively large rural properties, while Brian, who is younger and does not own his own property, talks of working on his relative's farm growing up. Although work is a different way to experience the natural environment than the outdoor recreation focus of this study, the feelings expressed by the participants are still positive. Alice acknowledges that she believes there is an age difference with how she experiences the outdoors relative to a younger person (perhaps for younger people it is more "luxury" than work, she says), and that it can be "overwhelming," but also talks about the good feeling she gets when the work is done. Also, "overwhelming" was specifically tied to the amount of invasive species/understory brush in her woods/property, something she would

not have known about except for education. In that sense, education may appear to augment a sense of work and responsibility.

Although Justin is younger and not responsible for his own property, he grew up helping his father, and says "to maintain it takes a lot of work." Although farm work is hard work, for Brian, it was specifically a positive experience because it was outside. For him it was better than being indoors, and he says it taught him to work hard, too. Justin talks about working outdoors growing up as being a different experience than his friends in town had. He says "the natural world taught me to be a hard worker and that that's okay." If education is thought to be empowering, can working in the natural environment be empowering too?

Hearing Joe talk about his property, as much as he talks about loving it, echoes Alice's thought of a 20 year old experiencing the outdoors differently (as "luxury" rather than work). When it's all on Joe's shoulders, he says "it's rough," and though in a different context during the interview he talks about how much he enjoys his solitary leisure time on the property, he also looks forward to when his father and his father's friends can get down to join him on the work it takes for upkeep. However, the work does not appear to draw away from his feelings of attachment to the property; he also expressed wishing he could live there – not to make the work easier but because he loves it. Also consider Matt's feelings, who said about his property "it's a lot to mow…but I want it to look pristine…I wouldn't have to work that hard if I didn't want to, I could just let it grow." In this case the work isn't even strictly necessary but self-imposed, because of the feelings he has towards the property in wanting it to look good ("I like having my

own property.") At least in speaking with this small sample of students, home and property ownership appear to merit inclusion in measures of place attachment (used in Bolan, 1997; Brown et al., 2003; Mesch & Manor, 1998).

Caring about/for property

One measure that I did not ask about specifically but that appeared to emerge from participants is that of caring about/for property. Caring suggests an affective emotion, different from ownership and property as work. In Brian's case, he is watchful of his property in keeping people off who would harvest wood. Similarly, Matt enjoys owning his property because he can "regulate it, take care of it, see what's going on." As a direct result from the knowledge she gained from her degree program, Alice has a desire to do something about the invasive species in her woods area.

The preceding examples all mention caring tied to a specific place of ownership; however, it is possible to view caring for the natural environment in general as an extension of this more specific action. Although Darryl does many groundskeeping activities on his property, one activity he mentioned specifically as caring for it is to refrain from using too much or many harsh chemicals. This aspect focuses on caring for the natural environment specifically, rather than just for property – though the action itself stems from activities on personal acreage. Justin talked about "keeping our own place clean" in the context of both his apartment and his father's property. Note in particular that an apartment is not ownership in its strictest sense, and that it is placed in a more urban setting. In this sense, his statement indicates that caring can be a characteristic of individuals that transfers to different contexts.

When asked how significant places and the meanings attached to them made him feel towards the natural environment, Joe responded, "it makes me want to protect it." I know that "Deer Camp," a large section of area that Joe helps care for, is significant in his life as a getaway and as therapy and as fostering a great part of his social relations. In this way, caring about/for property may elicit protective feelings toward the natural environment in general, following the relational values framework of Klain et al. (2017).

In this study, property ownership can be experienced as work or responsibility, or as caring about or for property, potentially giving rise to positive feelings about the natural world in general. Further, caring for property and viewing it as work/responsibility crosses the gender divide in this sample, as Alice expressed similar views on property ownership as that of male participants. However, even if individuals do not own their own properties, they may still be set on the path to environmental sensitivity via early life experiences.

Theme 1 Concept: Early life experiences

The aim of this study is to explore possible influences on environmental sensitivity. Chawla and Derr (2012) define environmental sensitivity as a 'predisposition to take interest in learning about the environment, feeling concern for it, and acting to conserve it, *on the basis of formative experiences* (emphasis mine). I further note from literature that these experiences often have their roots in childhood (Ewert et al., 2005; Guiney & Oberhauser, 2009; Wells & Lekies, 2006), and explore participants' recollection of these experiences.

Being gone/having freedom

Many participants spoke of "being gone" all day as a child. Alice says about her parents, "I think my parents were aware that stuff could happen…but there was a freedom there." Tabby talks about she and her siblings loving to ride their bikes all over the area with the only restriction being to be back at a certain time, and as the oldest, she was in charge of her younger siblings. The aspect of being gone is such that in Matt's words, the "crick" where they would go down to play was "like a babysitter." Moving to teen years, both Alice and Darryl talked about teens getting together and having secret parties. However, there is an adult aspect too, where Darryl talks about his dogs not knowing what it is to be confined; they "run free." Further, he describes a typical day without chores for him is to get on his 4-wheeler, take a six pack, and go from one fishing hole on his property to the next. Darryl's description of time spent in the outdoors as in adult echoes, in some ways, the story some participants tell of childhood.

Dustin speaks of how he "always had to be out of grandma's hair." Similar to Dustin's grandmother, Hannah says her mother said "you're either in or you're out," so she stayed out so as to not get yelled at, and does not remember a time she was not outside. Kimberly similarly recounts "I was always outside…digging around in streams and stuff." Lucy says with a smile, "My parents always said as soon as I could reach the doorknob I was gone…I had that free range, and my parents didn't like lock me up so I so was able to do what I kind of wanted and check things out." This reminds me of Alice talking about her parents wanting her outside even though they were aware things could happen. Dustin says "back then we could go by ourselves" and "we were gone all day."

What exactly does being gone mean? Though every situation is different, in each case the children (or adults) were gone from home (with home being the physical dwelling such as indoors in a house), to a specific place like Darryl's childhood pond. In order for children to have the ability to be gone and be able to have those nature experiences that may contribute to environmental sensitivity, they need *access*.

Having unstructured time

How else might children (and adults) spend their time being "gone?" Unstructured might be an appropriate label for going outside and not having a specific timeframe or designated activity (such as fishing). Justin says "usually I didn't have a goal, like I didn't have specific things I did," though he does mention looking for animals or taking pictures. I can associate unstructured time more with imagination or exploration or strengthening social ties, maybe the self-described "childish" activities that Hannah talks about that she continued on in teenage years. Dustin says of being gone, "we stayed there all day just wading through the cricks and stuff," and Hannah talks about running through the woods, playing with sticks and rocks, building forts. As Kimberly says, "I like just going and wandering;" and Lucy: "I was just out and about…I would just go out and walk up the hills, and down the hills." Interestingly, in this sample, females and males participated in the same sorts of activities during unstructured time – playing in streams, flipping rocks, and building with natural materials.

Perhaps having unstructured time represents the seeds of what will someday be the desire to overcome a challenge in adulthood (see Morgan, 2010 for a developmental perspective on place experience). Or for some, it could represent what will later become

therapy –freedom from the demands of doing a certain thing, or having it done by a certain time. Justin talks about "feeling the wind or looking at a tree…just became therapy…half the time I don't care what activity I'm doing, as long as I'm happy," he says with a laugh. "Structure isn't what's going to get you through life…it's the adventure and the unknown and the slow."

Parents encouraging

In many cases a parent, grandparent, or other relative was a significant influence on participation in outdoor activities. Alice remembers when her family received a certain video game system, but also that her parents put a limit to the time she could play it before going outside. Dustin talks about having to be "out of grandma's hair," but also speaks fondly of the section of canal that his grandparents owned, and spending outside time in that area, "things like that, that our grandparents let us experience," as if they were providing him with something good. Even Hannah's mother saying "you're either in or you're out" was an encouragement, as Hannah chose to be outside and form her own entertainment. When Joe remembers his childhood, he speaks of "spending almost every weekend on the river." That would be an area that his parents would pack the family up and drive to, so their choice and their influence is part of the reason Joe repeatedly mentions the amount of time he both spent and spends outdoors today.

Tabby recalls her father "wasn't big on staying in the house at all," listing various activities from mowing grass to cutting limbs to falling asleep in the snow. Now, she and her sister take on that role of parental encouragement: "We say get outside, don't stay in the house." Parents might also encourage by supporting a choice of

environmental/wildlife education, as Lucy talks about her father being so proud of her picking wildlife conservation as a college major. And Kimberly mentions in the case of urban children having the opportunity to experience the conservation camps that Kimberly works at, that the knowledge of the camp is largely passed among parents by word of mouth. In that case the parents would be making a choice that they would like their child to have this specific opportunity. Both females and males mentioned their parents encouraging outdoor activities as children, which may reflect on the broader adult community in the area as supporting such activity regardless of gender.

Another aspect of parents encouraging is trying to teach or pass on information. Justin says of his father, "What he did know, he tried to teach me." Even though Kimberly describes herself as not coming from an outdoor family, she says it was her grandmother who first showed her the tide pools and how to find starfish at the coastal Maryland beach where she worked, and took Kimberly along with her to work. For Kimberly, the most prominent memories of her childhood are being at the beach with her grandmother. Lucy's parents moved down from Akron when they decided they wanted to farm and taught themselves a new life, passing information on to Lucy. She says: "My dad's always known a little bit…he'd tell me little things now and again," and talks about him not being afraid to pick anything up, "so then I'm like that way, too."

However, an individual may take on the characteristic of outdoor recreation or nature proclivity themselves without strong parental influence, as Matt recalls his parents being frustrated because "all I did was hunt." He did not learn his outdoor skills from his father but from others – the same as it was for Darryl. And Kimberly states that she did

not come from a big outdoor family – it's a path she has chosen from a young childhood experience. These life stories that participants retell, taken in concert with the *place* of early experience (i.e. living rural vs. living urban, as Dustin did) remind me that while we can determine possible routes of influence on environmental sensitivity, these routes are not in and of themselves deterministic (note Lewicka, 2011b for discussion surrounding an inconclusive question: do preferences predict residence or does residence shape preferences?).

In this study, I see that early life experiences include aspects of having access, being gone/having freedom and/or unstructured time, and the positive role of parental encouragement. With regard to income and early outdoor experience, income does not appear to be as significant as regular, convenient *access* (as significant experiences described by participants do not appear to be expensive activities). However, how might this experience change throughout a participant's life?

Theme 1 Concept: Life changes

Environmental sensitivity focuses on an empathetic perspective for nature based on formative experiences. Place can provide the context of these activities; further, I see that resulting experiences might likely form in childhood. In this section, participants note some changes that they underwent in these experiences as they progressed through the life course.

Changing teen years

Teenage years are often marked as times of mental and emotional change for individuals, in addition to the physical. These nonphysical changes might factor into the

choices of activity that a person participates in while outdoors, especially if tied to social capital. Both Alice and Darryl mentioned being able to drive and having secret parties as characteristic changes of their teen years. In these cases, the focus is less on nature experience itself and more tied to other life developments. In Brian's case, he took it on himself to teach himself a new activity, trapping, which he may not have had the skill to do when he was younger. Similarly, Matt talks about venturing out of the "crick" and learning from uncles and a friend's father how to hunt and fish, and Joe talks about taking up trail running. Teenage years may therefore, through either social aspects focusing less on nature experience or new horizons opening up via personal growth and independence, change the type of activities individuals participate in outdoors.

Individuals might also continue on doing the same activities but in different ways or for different reasons. Joe mentions continuing on doing the same things he had been doing – for example, fishing – but that he increased his activity, doing it more after his mother passed away. Justin continued on with the same activity of simply going outside for the experience, but for a different reason – he says his teenage years "got more into the anxious, anxiety and having issues", and he pursued nature experience as therapy.

Hannah mentions continuing to go fishing but being able to go more on her own. However, she also talks about still doing "childish" type things such as flipping rocks. Similarly, Tabby talks about continuing on doing the same things, playing in the mud and making "potions," even in her teenage years, because she was playing with her younger siblings outside. What makes an activity childlike to our perception? Do we identify simplicity or exploration with children? In looking through these cases, activities done in

childhood can persist in a similar or different form during teenage years. Further, cementing these outdoor activities done in teen years may cross over into adulthood, as Matt states, "one of the two (hunting or fishing) I was doing, as a teenager to this day (laugh)."

A hallmark of teen years, the ability to drive also has relevancy to access, opening up a wider range of access to natural places. Darryl mentions being able to do more things on his own in addition to being with friends. In a similar manner to Darryl, Dustin mentions main aspects of teen change as being able to do more either on your own or with friends, and once somebody gets a driver's license, access increases. Here is yet another aspect of accessibility – mobility.

Another aspect of changing teen years might be less participation in outdoor/nature activity. In Kimberly's case, she was moved from coastal Maryland to Appalachian Ohio, where she lives in town with little access to natural areas. But she notes her time of moving was preteen years where she was already "mad about everything" and did not want to ride her bike or play outside much anymore. Perhaps being upset about moving from home combined with restricted outdoor access contributed to this change. Lucy notes a change in her life from being homeschooled to going to public high school where she became involved in track, and attributes less time in nature with her schooling change as well as having a phone in her hand to play with rather than going outside. Alice also notes she remembers spending less time outdoors, and that it became more "others motivated." In all cases, these participants talk about going to college for the wildlife program as being helpful to get them back outside.

Changes during teen years for this study can be summarized in Table 2:

Changes During Teen Years	
Type of change	**Characteristics**
Choices of outdoor activity	Persist in similar manner Change to different form
Ability to drive	Mitigate restricted access Increase independence
Less time spent outdoors	Not irrevocable over life course

Table 2. Summary of participant changes during teen years and their characteristics.

Changing over life

Individuals both experience change over their life (circumstantial, to follow), and themselves change over life (personal). Some of these changes are tied to the natural environment, with three non-traditional students - Dustin, Darryl, and Matt - providing a broader life course perspective. Dustin gives some examples of personal changes: nature experience changing from recreation to therapy, placing less importance on social relationships, increasing appreciation for peace and quiet. He also mentions being less attached to his political party. Darryl talks about a change in activity too, describing how he is more into taking pictures than hunting now. Matt echoes the same desire to take pictures rather than kill things for a trophy. Like Dustin, Darryl experiences the

environment less in a group (and perhaps, places less importance on that) but more with a single other person, his wife.

On the circumstantial side, Hannah, in her twenties, talks about doing the activities she did with her father "before (the town) got bad." Similarly, when talking about spending time on the river fishing as a child, Joe (in his thirties) said, "the water level seems much lower than it used to be…fishing isn't as good." These are changes that happened in just a couple of decades, but individuals seem to be conscious of changes they both observe (circumstantial) and experience within themselves (personal) over a wide range of age.

Also on the circumstantial side, access can change, too: relatively restricted from areas that would make her feel more at home in Ohio, Kimberly's purpose for working a retail job right now is to save money for a car since she does not have the convenient nature access she did as a child. Lucy, too, says she needs to put more effort into getting out to where she can experience that peace of mind, since she cannot walk out her door to 60 acres anymore. Though an individual rather than structural change, Matt recalls how he used to stay in the same area for everything he liked to do because he had everything he needed and hunting access was free, but now that he has worked in his career for a time, he would rather go out and see and do different things since he has the money to do so. As noted before in the "seeing new places" section, increased income throughout life can contribute to increased mobility and afford greater, or different types of, nature access.

Following the constant theme of access, providing outdoor access and opportunities to people might therefore need to accommodate for a wide range of changes over a person's life course, if possible. Consider that as individuals are constrained by fluid, nested hierarchies of value judgments (Howes & Gifford, 2009), and as they must choose between competing statements used to measure environmental concern (Klineberg et al., 1998), they are required to select their actions contextually. Similarly, they appear to be limited by circumstantial affects regarding their nature experiences, which can therefore limit the effect these experiences have on positively influencing environmental sensitivity.

From a gendered perspective, males and females shared similarities and differences in changing teenage years. Both males and females in this sample mentioned the ability to drive, and a focus on being with friends against a nature backdrop (rather than nature experience itself being the focus). However, some females mentioned a drop in outdoor activity, noting that what outdoor activity they did pursue was "others motivated" (such as participating in a group activity or athletic team). Over the larger life course, by contrast, some male participants noted that they began to place less emphasis on social relationships relative to the outdoors, maybe enjoying nature experience with just a spouse or by themselves.

Changes over the life course, then, can include changes over teen years (including less time spent outdoor which may not remain a permanent change) or changing over the life course, and be either personal or circumstantial in nature, with possible gender differences relative to changing experience. One important circumstantial change is

access to nature, with resulting positive or negative effects (as to whether that access is obtained or removed). I will explore in the next section what effects an obtained access to nature might have.

Bridging the gap to environmental sensitivity: effects of nature experience/outdoor recreation and place

The data so far paint a picture of participants' experiences in nature, via outdoor recreation (e.g. camping, hunting, fishing, walking, etc.), childhood pastimes such as "being gone," and other activities such as seeking therapy or working outside. These conversations also unpack the characteristics of place in this study; for example, dimensions of rurality, having displacement difficulty, and taking care of property. In this way, the experiences that persons have, whether being outside as a child, or seeking a specific activity such as recreation or therapy, supply meanings to places where these activities take place (Table 3). Nonphysical meanings attached to physical places may play a role in predicting environmental concern (Brehm et al., 2013; Stedman, 2002). Therefore, outdoor recreation can be linked through experience to conversations of place, with effects on environmental sensitivity (discussed in following).

Participant	Possible place meaning / supporting data
Joe	"The outdoors is everything you can do" "It's therapy" Bonding experience with parent: "I don't know what we would be doing if we didn't [work together managing property]"
Justin	Overcoming a challenge: "I want to camp, by myself...leave me alone, I got this" Teaching work skills: "The natural world taught me to be a hard worker"
Lucy	Place to feel good: "I always feel better when I'm spending time outside"
Matt	Place to work: "I want it to look pristine"
Darryl	Ownership: "…our little piece of the world"
Brian	Place for family activity: "talking about it [hunting on property] later" A place to get away: "…even from family"
Alice	A "spiritual experience" (summiting mountain with friends)
Kimberly	A place to be calm: "Nature's always calmed me down"

Table 3. Sample of participant data supplying a range of place meanings. Meanings are constructed through experience with a particular place. In some cases, general statements are made (for example, "the outdoors is everything you can do," and "the natural world taught me to be a hard worker"); these statements emerged from conversations of activities tied to specific places. Note these data are not exhaustive; other meanings may be construed from the data as applicable.

Theme 1 Concept: Feelings about nature

The experiences that occur in particular places give rise to certain feelings that can, in some cases, be considered markers of environmental sensitivity. Recall that environmental sensitivity is marked by affective feelings and concern towards the natural environment, based on formative experiences (Chawla & Derr, 2012). Descriptions of feelings about nature that emerged from participant discussions follow.

Having good feelings

It may be difficult for individuals who are being asked to examine themselves for the first time in this regard to be very specific about how they feel towards places and the natural environment. Though a dichotomy in terms of negative/positive, good/bad may be tempting in its simplicity, there may yet be dimensional levels along a continuum of feeling. Even so, "feeling good" emerged as a common way for participants to describe their feelings. Of note, the same broad emotion of "feeling good" is applied to many situations. Alice talked about having good feelings about her home, mentioned more than once that being outside made her feel good, and added the aspect of feeling good after work outside gets done. Thus, the natural environment may fill multiple needs in an individual's life that they may yet not even aware of beyond a simple good feeling. Lucy says, "even if you're in the city, everybody's connected (to nature)." If that is taken as true statement, then persons might not even be aware of all the needs they have the environment could fill, and thus not be as enthusiastic about supporting the environment as they might otherwise be. Darryl mentioned the same "good feelings" towards his home, saying that it's "perfect" and "beautiful." In one of his statements about keeping

balance between nature and human needs, he stated that he "likes" and "loves" the natural environment, even as a person heavily invested in resource extraction (retired coal miner, often speaking on industry behalf) – both could be considered good feelings. When asked to describe how important places and activities made her feel towards the natural environment, Tabby stated "just happy in general"; but she became deeply emotional not long after in the discussion, whispering "I just love the world so much," as a tear ran down her face. Good, affective feelings in these discussions show themselves as multidimensional properties, touching not only multiple activities but various sides of the emotional spectrum, as well.

Being outside in nature might provide a physical aspect that feels good too – like Alice and her friends getting in the cool water after summiting the mountain in the heat, being almost a 'spiritual' experience. Lucy says, "I always feel better when I'm spending time outside and running around…it's healthier…it makes me feel good, being out and about." Healthier could of course mean emotionally as opposed to just physically (see 'experiencing nature as therapy'). Justin talks about growing up in his log cabin home without central heating, and that he actually enjoyed waking up on cold mornings and going downstairs for a cup of coffee, saying, "it was more classic, it might have been more uncomfortable, but it felt good." Here is yet a way in which I might not expect the physical to influence the emotional: more uncomfortable = feeling good. Was it the aspect of being home? Feeling closer to the environment? The relief of getting warm coffee when he felt cold? Here too, "feeling good" is not necessarily the simple cause-and-result I might expect.

On the opposite end of the spectrum, Hannah does not like her boyfriend's house because of its lack of access to the woods, though she does like that it is a small town. Joe says that he "despises" where he lives because it is an apartment, while a few lines later saying "it's all right, you know." Further, he says it is nice that it has a balcony, yet he wishes it were on the side that faces the woods, "but oh well." Aspects of place may therefore exist as competing dimensions which feed into having "good feelings." There can be a temporal component to the effects these dimensions have, as well. For example, when Lucy describes the things she does not like about living in her apartment in town, most especially restricted nature access after growing up on 60 acres, she talks about how it works for now because she knows it is just for now. In like manner, Joe's apartment is just now for when he is in school, and he talks favorably about his ability to spend the majority of his time elsewhere. When "good feelings" do not exist for places in these cases, it results from their lack of nature proximity or access. Individuals with an affinity for the natural environment may negotiate their circumstances such that less desirable places are mitigated by a temporal aspect as well as the ability to gain a desired outcome in return (being in a small town, having independence from parents, or the convenience of renting, for example).

Taking for granted

Another aspect of place and natural environment I had not considered until participants specifically addressed it is "taking for granted." When Alice speaks of visiting the redwoods often, with Yosemite in her virtual backyard, I am reminded again of access. The trips of most visitors to the redwoods are meticulously planned out family

visits, possibly involving expensive plane tickets, or driving hours from a home location. Although she does not explicitly talk about taking that childhood for granted, Alice does call herself "lucky" (and repeats this thought multiple times throughout the interview, for various reasons). She talks about her current property as being what she takes for granted, because "it's there all the time" and "I get that constantly," but she consciously acknowledges that would be different than others who do not have the same ability. This brings up an interesting point on a conscious vs. unconscious taking for granted (perhaps similarly to conscious vs. unconscious place attachment, Lewicka, 2011a). Darryl attributes "taking for granted," by contrast, to a function of youth. In his case, he mentions little outdoor spots he enjoyed as a child such as a favorite pond where everyone would hang out. He talks about those little places existing less and less as time goes on, as a function of urban sprawl or technology.

Other aspects emerged conversing with Darryl that center around taking for granted. He talks about himself as being more into sports than viewing himself as an outdoorsman, but as we talked, he acknowledged this identity more and more when he consciously thought about all the activities he did outside - "You're making me feel better about myself!" He expressed the same thought about his actual home property – "Maybe I'm more connected than I realized," and even describing activities – "As we're talking, I guess there's more ways to enjoy the outdoors than hunting or fishing." This expression appears more in line with unconscious vs. conscious awareness of the natural environment. How many others, who would not necessarily classify themselves as outdoor people, might, given the right impetus, realize that they are more connected to

the outdoor than they thought? Is having access to physical property as a resource like Darryl a necessity, or is there another connection that might be drawn, for example, vacation memories? Note the work of Stets and Biga (2003), who conclude that the individual agency responsible for influencing environmentally responsive behavior is most driven by identity processes (rather that attitudinal processes regarding a specific action or situation). Therefore, if a person sees themselves as having an environmental identity, this identity can transcend other actions precipitated by specific situations in a political context, for example. Just as speaking with Darryl changed his perspective to include a more prominent environmental identity, so too could other individuals' experiences be drawn out in the same manner.

Having appreciation

By contrast to "taking for granted," another dimension of this property of feelings about nature is "having appreciation." For example, Justin says "I feel super blessed" to have the property to live on and share with his friends that he did growing up. Dustin mentions that for him, having appreciation is part of the therapeutic aspect he experiences on his nature property. Joe mentions a wide variety of forms that having appreciation might take: spending so much time at "Deer Camp" because he appreciates it so much, "there's nothing like picking up a clump of soil and understanding what that can do," "I get a great appreciation for wildlife" from nature observation, appreciating his uncle showing him skills and activities (such as woodworking) and spending time with him. In these examples appreciation takes the form of function (being able to have therapy, what

soil can provide), place (spending time at a place because it's seen as valuable), and fostering relationships (perhaps similar to bonding with parent).

With further regard to the place aspect of appreciation, experiencing different places allowed Matt to appreciate the differences in natural resources management style between states – what works and does not, what areas appear to be well managed. Having appreciation can stem from a religious aspect of a person's life as well. In talking about his religious perspective Justin says "I see wildlife as primary and job as secondary…it's just a different level of appreciation."

Just as Joe spends time in nature because he appreciates it, the reverse might be true also: time spent in nature can increase appreciation. When asked about how time spent in nature made her feel about it, Lucy states it made her appreciate it, specifically, its beauty, interconnectedness, and positive feelings from being part of it. Appreciation can also extend to access, as Lucy says "I really appreciate having the ability to go to these places…for that…peace of mind." And if something occurs to either remove that place or restrict access, it is possible that only then do we experience appreciation for what we had. Matt speaks several times, always disparagingly, about increasing development and loss of places. In his words, "when you have it, then you lose it, you appreciate it."

Not liking being indoors

Rounding out the data that emerged for "feelings about nature", a number of participants volunteered bluntly that they just do not like staying indoors very much. Hannah talks about being at work in the kitchen at the pizza delivery during the summer

and her thoughts being all about being outside. “I could be fishing, helping my friends with the horses…anything but being inside right now.” Matt talks about working his entire career indoors and how that’s driven him to his pursuit of higher education: “I don’t want to be inside anymore; I’m done with the factory.”

This desire seems to be more closely tied to the outdoors itself rather than strictly recreation or leisure time. Joe talks about liking to mow “just to be outside.” Brian, who grew up helping to do work on family farms, states that he does not like to stay indoors for a long time, so there is a time dimension to it, too. Further, Brian does not like indoors activities – video games were the example he provided. Along with that time aspect, Kimberly says, “the longer I’m inside, the more I cannot wait to leave,” and following Brian’s thinking on indoors activities, says “I will always choose to be outside, just wandering if I can, than to sit inside and stare at the TV or something.” And for Joe, “…the outdoors is…everything you can do, right?”

For these individuals, time outdoors was a heavy, perhaps primary influence of their childhood recreation – to the point where Joe equates the outdoors with everything you would want to busy yourself with. I cannot help but think this must be different than a child growing up without much access to these activities. Perhaps their primary recreation is video games because it is not safe to be outside where they live, as in the situation with Tabby and her children. Once again, I return to the idea of providing nature access in order to obtain the beneficial outcomes these experiences can provide.

The feelings that participants describe as having towards nature, generated by their experiences outdoor, are overwhelmingly positive (“having good feelings”), to the

extent that some do not even like being indoors. Further, in this sample, aspects of feelings about nature were common across males and female participants, including mixed-gender voices relating to having good feelings, taking for granted, having appreciation, and not liking being indoors.

There is an interesting contrast between taking nature for granted versus having appreciation for it, which stems back to access. That is, having nearly constant access to nature may result in taking it for granted; yet for some, increased access increases their appreciation for it. As access may be determined to a large degree by forces out of an individual's control, I turn now to an exploration of these circumstantial effects as supplied by participants.

Theme 1 Concept: Circumstantial effects

Even if an individual exhibits a high level of environmental sensitivity, there are factors which remain beyond individual control that may attenuate the effects of place and nature experience on sensitivity; or further, the effects sensitivity might have on actions or behavior. I have termed these factors "circumstantial effects." From participant discussions, these effects emerged as having access, having urban access, being lucky, and existing generational differences.

Having access

Dimensions of access can range from being able to walk out your own door and have access to the things you like to do (Darryl has everything from fitness trail to fishing ponds); walking out and having access to some things you like to do (Brian mentioned hunting and trapping but goes elsewhere to fish); being able to ride a bike a short

distance, as Alice did, to meet her cousin; getting in a car and driving a short distance (Darryl to state park); or finally, driving a long distance (Alice to mountain hiking when in college with friends). Parks remain an important access point such that individuals often do not have to own their own amenities (ex: horses and property to ride them, as Tabby mentioned she experienced growing up going to a park and riding horses that belonged to family). Having access might also change over a lifetime, as when Kimberly became older and did not have access to nature as she did in childhood, due to living in town and not having a car. She speaks of her grandparents having a lot of property she had access to as a child; now, every trip has to be a planned trip, and she wishes she lived further out of town so that she could drive only a few minutes to go explore. In her words, "if I could spend like the amount of time that I choose out there, I could easily see myself getting attached."

So increased access might mean increased attachment opportunities for those who are nonnative and experiencing displacement difficulty. Now that Justin has moved away from his family's property and lives in town, he says "it's nice to know my dad isn't too far away so I can always go to that place." Retaining that tie back to place and nature has become important since he has moved away. Tabby too, with restricted access to outdoor play due to an unsafe neighborhood, values being able to take her kids to her father and grandmother's acreage for play dates with her sister's children. Of note, Lucy grew up on 60 acres; now she says "I have to drive or bike or find somewhere else to get to in order to have that peaceful mind." In this case, considering nature places as therapy (see Table 2), access becomes even more important to individuals' well-being.

Having urban access

What might be the dimensions of urban access to the natural environment? When Dustin talks about living in his town of residence, he says "there's nothing really" and there's "no woods." What does having nothing actually mean? When Dustin talked about going canoeing at the creek, he said it was less than 2 miles away. This would be much different than in other cities, or even in rural areas, where a person might drive much longer to reach an access point.

When Joe talks about the apartment he lives in, even though he does not "like" it in the sense of being an apartment, he also said it is nice because he can spend all his time elsewhere. When we talk in terms of tradeoffs, it could be that actually living in an urban environment allows individuals more opportunities, even as regards outdoor experiences, with the rest of their time. Essentially the apartment serves a function while Joe is at school, and he knows it is temporary (as in the "having good feelings" discussion, above). But even in that temporary zone, individuals have preferences (such as having a balcony or facing a wooded view) that may increase their place satisfaction (Stedman, 2002) or place dependence (Stokols & Shumaker, 1981) if not attachment. If this is the case, the place may simply be the best among poor alternatives (Jorgensen & Stedman, 2001).

Tabby, however, talks very strongly about not liking where her family lives. Some aspects she mentioned are the fact that she does not have much land, her "outdoor" time consists of being on her porch, and the area is not safe. She mentions a church that gives her family permission to shoot bows on their property. This seems like a creative

way to increase urban access; of note, it is an opportunity formed directly by social capital with the church group. As social capital is thought to positively influence environmental concern (Macias & Nelson, 2011; Torgler & Garcia-Valinas, 2007), here I see it can also play a part in increasing urban access to nature for individuals. For those individuals without readily available social capital, structural remedies may serve to ameliorate limited nature access (e.g. improved public transportation, greenspace planning).

Being lucky

I can perhaps think of "being lucky" in two ways: as a conscious contrast to the attitude of "taking for granted," and/or as an acknowledgment that an individual has received a structural benefit. I might find both dimensions of "taking for granted" and "being lucky" in the same individual with regard to many objects/situations that are either consciously appreciated or unconsciously assumed. For example, although Alice talks about taking her property for granted because it's always there, and also about how much work it is to maintain, she uses "lucky" four times in her discussion – she considers herself lucky as far as growing up with close proximity to the national park, that her generation was not as technologically attached and spent more time outside, that she indeed does have her own property, and that she has 2 dogs to enjoy on the property. Joe too acknowledges about his "Deer Camp" property, "I'm fortunate that we have what we have and that I'm able to go there." Hannah, who does not own property, takes a slightly different slant when she considers herself lucky "that I have the time when I have the time to be out there" and that "not everybody gets the chance to do what I do" (speaking

of kayaking). When Justin talks about sharing his father's property with friends, he says he's "very lucky to have that stuff."

The commonality of these differing individuals' voices is the thread of appreciation among diverse situations. That is, it is perhaps not a matter of providing the same types of opportunities to every individual before that individual can appreciate the benefit of the opportunity. For some "being lucky" might mean owning property, as for Alice and Joe; but it could also be having the time to spend outdoor anywhere, even if that place is not owned, as Hannah expressed. It might even be for owning an animal, as Alice mentions her dogs. If, as advocates of promoting environmental sensitivity, we take the perspective of attempting to completely equate circumstances and opportunities between urban and rural dwellers as far as acreage ownership, or between those with funds or family ties to own property or not, for example, we quickly find ourselves in an uphill battle. However, we may get further if we focus more on access and available opportunity located within their contextual situation, as in place, not space (Relph, 1976; Tuan, 1977). As in possible discussions of rural poverty, enhancing structural factors (allotted funding for green space, access, transit, etc.) provides opportunity for persons to work within their individual circumstances to allow maximum benefit. Therefore, the effects that place and outdoor recreation exert on environmental sensitivity, via nature experience, may be mediated through both individual-level and circumstantial effects.

Existing generational differences

Another circumstantial effect emerged from multiple participants while speaking on a range of topics. Though each individual presents their own perspective on this effect,

I have termed it "existing generational differences" to capture the similarities. For example, Alice says that her generation was "lucky" in that they were able to be outside all day long. She also recounts how her family received a new video game system, but her parents put a limit to playing on it before they had to be outside again. Perhaps in Alice's case, "lucky" meant that the overall culture was that kids still played outside, not only with technology. Similarly, Tabby's telling of her own childhood was playing outside, making potions in the mud with her younger siblings and biking. Now, she explains she is constantly encouraging her kids to go outside and not to stay in the house; however, often they would rather play video games. Something else to consider is that other participants, from a younger generation than Alice and Tabby, mentioned a decrease in outdoor activities as a teenager due to, among other causes, receiving a phone or other device to play on.

Matt too expresses differences between generations when he considers his son and his son's friends. In these cases, technology is not necessarily decreasing the amount of outdoor activity, but changes *how* people experience the outdoors. For example, of his own experience hunting, he says "it was so much more simple." He contrasts this with the technology used today (e.g. trail cameras) that, from his perspective, most young people think they need to have in order to hunt. He also talks about how younger people are constantly buying and selling outdoor gear, influenced by hunting shows, commercials, and Facebook Marketplace. Though he talks about how his generation thought they were pretty good at hunting without the extra amenities, he does acknowledge, "we never had the opportunity for that." The difference here could be due

to the opportunities available at the time of current technology, such as Facebook Marketplace.

Matt also says "the ability to do what we did…it costs so much more, that's the hardest thing." Though not strictly tied to technology, if the culture of a younger person from their peers, availability of gear swapping due to communications technology, etc. is that they need more than a license and bow to hunt, then they might suffer a prohibitive cost. In our discussion, Matt explained how when he was growing up, he did all his hunting on landowner permissions, but nowadays for his son's generation, much of the good hunting property is now leased land in order to make money. Here is another way in which experiencing the outdoors now costs more.

Matters of accessibility remain relevant to discussions of outdoor experience and effects on environmental sensitivity. For this study, they include having urban access specifically in addition to a more generic sense, "being lucky," and access differences between generations. Members of both genders expressed the idea of "being lucky" and/or a feeling of missing the large properties they grew up on, especially if they live in an urban environment at present. Having urban access to nature might prove particularly significant to females designated as primary caretakers (for example, Tabby with her children). Differences between generations in the form of reduced nature experience might prove a more general societal trend than gender-specific (e.g., Louv, 2005); but one male participant expressed generational differences specifically in how his son, and his son's male friends, participated in outdoor recreation. From his perspective, the culture of gear-and-technology-heavy hunting and fishing, as opposed to the simplicity

with which he himself grew up, could be a circumstantial constraint due to financial limitations. Here again we see that increased income could change the way the outdoors is experienced – whether simply, or material-intensive.

To follow a logical conclusion, the positive effects that may be incited by feelings about place, property ownership, and experiences in nature may not be effective in positively influencing feelings about place if they are constrained by circumstantial effects such as access restrictions. This conclusion should strengthen our impetus to extend structural accessibility options as much as possible. The following section will deal with the second theme that emerged from participant discussions – that of the possible effects of social factors on environmental sensitivity, within an educational context.

Theme 2 Concept: Family ties

I noted that social capital, i.e. relationships with other people, can play a part in developing environmental concern. Social capital may include family relationships such as a shared heritage of outdoor lifestyle, shared nature experiences, or bonding experiences that take place in the natural environment. Strong family ties are among those norms listed as shaping the cultural landscape of the Appalachian region (Woodard, 2011). What role does having a family heritage of outdoor activity, or shared experiences, play in a person's proclivity towards following this path?

Having family heritage

Brian describes himself as coming from a "big outdoors family," to the extent that he took it on himself to learn a new skill – trapping, which his grandfather did – for

winter recreation. Further, this type of heritage does not necessarily need to extend back for generations. On one side of the spectrum, Justin's family name remains on the road he lives on in rural southeastern Ohio, as his prior ancestors were the first to place a house in the area. But on the other end of the spectrum is Lucy, who also talks about learning everything she knows from her father. Her parents moved from a large city because they decided to learn an entirely new lifestyle of farming, in the same rural region as Justin, although "newcomers" to the area.

However, ultimately I see much that is left to the individual. Kimberly speaks of wanting to be outside more the longer she is inside, stating that she would always rather be "wandering" than watching television. However she also says "my family's never been the outdoorsy type." What this means to me is that an individual does not have to be from a certain situation or family "type" to enjoy nature. Therefore, urban outreach - like the conservation camps Kimberly works at - may be an effective way to reach those individuals in an effort to promote the beneficial aspects of nature experience and recreation.

Bonding experience with parent

Though not explicitly stated this way, bonding experiences with parents so far have seemed to occur mainly during teenage years. Though she had visited the redwoods as a child, Alice felt it was a whole new nature experience when she went with just her mother as a teenager, expressing a different feeling than she did as a child in a group, which is where the in-vivo code "bonding experience" comes from. Bonding experience may have the dimension of increasing time spent along with it, as Brian says he "started

hanging out with my dad more" when he began fishing. Darryl, a third generation coal miner, talks about how his father worked all the time, not leaving much time for outdoor activities together. Though Darryl thinks first of his uncle and cousin's husband when he thinks about spending time outdoor in his youth, he mentions a special activity – fox calling – that occasionally involved his father. Though he did not explicitly state it, I might infer from the fact that his father was not the primary source of outdoor activity that this represents a special time as far as spending time outdoor with his father.

Of helping his father manage their "Deer Camp" property, Joe says, "I don't know what we would be doing if we didn't…probably be doing it somewhere else." And he talks about his father being somewhat cantankerous and hard to relate to, in contrast to his uncle, with whom he is very close and spends much of his time. Having a common goal or activity together can help those relationships that may not thrive otherwise or are not specifically close.

Similarly to Joe's father, Justin talks about his family not being very close as far as talking/confiding in, but says that "the best memories I have of my dad are when we're walking around" (on their property, doing things to maintain it). The outdoors and accompanying experiences can also provide opportunities for bonding where it may be difficult in other cases.

Going outside with family

Though many participants have talked about having a sort of bonding experience with their parent, others have spoken of spending time outdoor with family even in the present. Given the accessibility (proximity and affordability) of regional campgrounds,

Dustin says he likes to "grab the kids" and go there "on an adventure." Accessibility may mean more workability into family schedules for outdoor activities ("grab the kids" as opposed to a planned out vacation). Brian talks about going kayaking with his mother and sister on a nearby river, while enjoying a big hunting group of extended male family during hunting season, to the point where "talking about it later" becomes part of the overall experience. Tabby tells how she and her sister will take their children to play together at their grandmother's property. For Matt, other people are a big part of enjoying some outdoor trips, such as his annual friends and family trip to Canada. Perhaps in these cases, enjoying nature may not specially be an end of itself but a means to an end. We can use the relational values framework of Klain et al. (2017), which allows respondents to explore their perspective on what a good life entails and the activities accompanying this (for example, enjoying nature with others), or Heberlein (2012)'s suggestion to explain the benefit to the individual provided by the environment, to reach those persons who fall into this category.

For this study, the concept of family ties is comprised of outdoor time as being a bonding experience with a parent, going outside with family, and having a family heritage of outdoor activity. In this sample, gender and income do not appear to significantly affect these components of family ties. Enjoying the outdoors in this way represents an important avenue of social capital and may be an avenue with which to relate environmental values to individuals who may not express such values strongly otherwise. Another context in which environmental values might interact with social effects is within the spheres of religion and politics, which I will explore next.

Theme 2 Concept: Influence of religion and politics

Religion and politics are social effects that I note from literature as having a possible influence on environmental sensitivity. Along with family ties, religious devotion is said to have shaped the values of the Appalachian region (Woodard, 2011). Further, this area is characterized as either highly conservative or more conservative than average (Jones, 2019). It is within this context that participants respond in a discussion of these particular social effects.

Religion having influence

Participant response to the question of religion's influence on the environment ranged from seeing no connection between the two, to feeling a deeply religious bond to the environment, with some having never considered the concept before. Hannah seemed unsure of how or if religion could influence people's feelings towards the environment. She said "I think so…" and took some time to think about it, but struggled to give a clear example. She related a personal account of why she does not talk much about religion, saying that for her, religion and the environment are separate – but acknowledging it might not necessarily be that way for other people. Matt struggled to see the connection between religion and the environment too, saying he had not heard anyone ever say anything to that effect. Though Matt could not think of an example of this topic, he asked me if I knew of one – his curiosity surprised me at the time. I see a trend of open-mindedness among participants, rather than the closed "insidedness" sometimes typified of the Appalachian region.

When Alice talks about religion having an influence, it seems mostly tied to the opportunities available as a social group. Her narrative describes a time when she felt ostracized/judged by her previously closely knit church group, and says “I think it did <influence me> though, because I didn’t spend as much time outdoors after that.” For her, the people she picked to spend time with already had an affinity for nature, so their various backgrounds were eclipsed by that commonality.

Some participants espoused stronger viewpoints when discussing the environment and religion. Brian, a student I know holds personal spiritual beliefs, surprised me by primarily expressing frustration during the interview question about religion. One of the first words he used was “deception,” and further elaborated using the phrase “telling you what your opinion is.” It almost sounds like the political polarization/segregation of the day. Similarly, Kimberly feels as though individuals who choose to worship a different religion than what they were brought up with might have more open minds, and therefore more likely to form their own opinions about the environment (rather than being told, as Brian mentioned). Almost as an afterthought, Brian mentions the importance of taking care of the environment as a function of religion; but he heavily emphasizes it should not be a religious or political thing, just that it is “the right thing to do.”

By contrast, Darryl, who I also know to hold personal religious beliefs, emphasized the taking care aspect as primary, and explicitly connected this to morality. For some participants, feelings towards the environment are deeply ingrained in religious belief. Justin and Lucy both stated that they are Christians and that they view the environment as being specifically created, which influences their feelings towards it.

Lucy emphasized the taking care concept: "This was specifically made…this was all planned out…that's really cool, and I appreciate it…you want to keep it like, good and clean and everything." Justin's perspective suggests a possible focus on *identity*: "I feel like I'm created in tandem with it…when I'm separated from it, I feel like I'm not all me." Tabby states emphatically, "We're supposed to take care of this planet;" later, with a tear or two trickling and a long pause in between: "If we can't do that…then what were we put here for?"

The original proposition of White (1967), by contrast to the stewardship/caretaking examples expressed earlier, was that Judeo-Christian beliefs emphasize the domination over nature aspect, not an empathetic perspective towards the environment. One example that might stand out from this study as a corroborating case might be Joe's experiences. Joe did not espouse a strong personal connection between religion and the environment, stating a need to take care of it that is not necessarily connected to religion. But he did talk a little bit about the contrast from his perspective between the U.S. - a predominantly Christian nation, where the focus is on "development and materialism" - and some of the places and peoples he had seen during his Army tours in the Far East, where nomadic peoples are more detached from materialism and development. Joe's experience allows him to see a contrast that may not spring out to most, and seems to echo the original proposition of White (1967).

By contrast however, note that four participants have explicitly expressed taking care of nature as directly tied back to a Christian religious belief (see Kanagy & Nelsen, 1995; Shibley & Wiggins, 1997), possibly in conjunction with environmental identity

considerations (Stets & Biga, 2002), with others expressing less direct connections. This indicates the matter is not a closed book, in like manner to the original demographic work on environmental concern being updated from time to time instead of being taken for granted. The main point of caution here is to not let prevailing survey work obscure important differences and cases, thus missing opportunities in outreach.

Politics having influence

Alice (admitting she is not very knowledgeable about politics) and Hannah (who says she tries to stay away from politics and not discuss them) nonetheless both see a possible influence of politics on the environment through money (in fact, that's one reason Hannah states she tries to stay away from it). In Hannah's words, "if people can make money off the land they're going to do it." Tabby expressed hating politics and that in her personal thought, politics has nothing to do with the environment, but believes politics could play a role if a person subscribes to a certain side and listens to everything they say without doing their own research: "That's with a lot of people, I think." It is also possible to not be strongly politically minded, but not see the connection to the environment, either, as Lucy does not feel that they directly relate and that it is more an issue of the individual person and how and where they are raised.

Joe described some of what goes on in politics as being leaders-driven; for example, if a person likes President Trump (as Joe does), going with whatever President Trump says on climate change (which Joe does not). Along these lines, Joe talked about making assumptions without carefully looking at what the data say. One of the ways in which assumptions can be made or incorrect conclusions drawn might be due to "the way

people say things sometimes, politically" (in the example Joe was giving, climate change versus global warming as a more correct term). Related to the way people say things, even using the same example of climate change versus global warming, Kimberly talked about how role models (comparing politicians to celebrities in this discussion) are criticized for changing their mind on something - as if what they say or believe is what they say or believe forever and they can never change, which stifles new information in her view. She perceives this as a negative of political influence, also. Participants on either side of the political spectrum, during these discussions, do not appear to paint politics as a black and white issue.

Having no middle ground in politics

There is a frustration among participants on the state of politics. Not one has expressed politics in a positive light. Most are not strongly interested – even Alice, from the very different state of California, did not start off stating she strongly adhered to one party or the other. Even Darryl, who wore a t-shirt of the Republican national convention to class on more than one occasion, was quite more mild-mannered than I expected. Although I know Brian to be a staunch gun rights adherent, he brought up "going with what your party believes in" as a drawback, while Darryl mentioned stereotypical labeling and being divided as blocks between the parties. Matt called the level of (bipartisan) separation in current politics as "crazy" and stated that it should not matter what side a person is on; there should instead be some way to meet in the middle with regard to the environment because it is "where you both live." Justin's blunt answer to the question of "do politics have any influence?" is "it can if you let it." With regard to

the labeling Darryl mentioned and similarly to religion but in a negative way, he points to identity issues again by stating "I don't think anyone should put a label on themselves…if you put a label on yourself…and you do everything they say…you're not really being you." Also along the lines of labeling, Kimberly says "everybody's different; you never know. There's stereotypes, there might be a majority; but it doesn't mean that's always the case."

It may be easy to assume that frustration only exists among members of the political party not currently holding the Presidency. In discussing these issues with study participants, I found instead a more widespread frustration with politics and its possible role in environmental issues. Dustin (a previously staunch Democrat) talks about "spending money on the stupidest things" and "you can't get anything done." Brian (a conservative proponent of gun rights) says he cannot even talk about politics or religion and the environment without getting "fired up," "cause I feel like it shouldn't be an issue but it is" (i.e. neither religion nor politics should have influence on doing the responsible thing environmentally). Related to that thought, Matt says "I don't know why we can't put it together in the middle and not worry about our sides and our feelings." And of the entire political system Hannah asks, "is politics even a thing anymore…or is it just a bunch of people arguing?" Similarly, Tabby says "I can't stand politics…all it is, is a big argument between one side and another."

If even this small sample of college students perceives the state of politics this way, caution is warranted in lumping them into a certain category with regard to environmental or political beliefs in this region. In Hannah's words, "I'm a very middle

ground person, like I can see your side, and I can see your side." Those are Hannah's own words representing her own perception of herself; however, the truth of that statement appears to be evidenced in her previous statement on others experiencing religion and the environment differently than she herself.

Being unattached to political parties

Following this theme, I was somewhat surprised when I talked with my participants given the prevailing politics of the region or the stereotypes I might think of as associated with Appalachia. I did not ask about individuals' political views or views on the president directly; but in asking whether they thought political considerations might ever influence people's feelings towards the environment, many volunteered their own standpoints - for example, stating they liked or didn't like President Trump. Of interest, many participants are indeed conservative-leaning, protective of gun rights, etc., and several are not - yet none expressed the "my party at all costs" attitude or even seemed particularly attached to their party if they did express membership. Each individual seemed relatively open-minded no matter what their views, and at least someone a person could discuss viewpoints with. But there was none of the complete party adherence that might be expected.

For example, Dustin has changed over life from always supporting the Democratic Party to "now I'm just Dustinish." He expressed disillusionment with current politics but even as a lifelong Democrat he saw the need to work with President Trump because "he's the one that's there." Brian, who I know to be a gun rights advocate and who I felt sure would be more strongly attached to the Republican Party, says, "I just care

about doing the right thing" rather than attach to the party and says that he would vote for anyone he thinks is doing the most right. Alice, from California, is not invested or highly aware of politics and only mentioned almost as a minor side inference that she does not like the current president. Hannah stated bluntly "I try to stay away from politics too, because it's about money." Darryl even spoke in Washington, D.C. on behalf of the mining industry and as an advocate for coal; but he was not as vehement and attached to the Republican Party as was expected. He gave illustrations of labeling into political categories and how that was not a good thing. Not one person expressed a "party line at all costs." It would be a disservice to this region, arguably, if they were to be labeled into a certain preconceived category.

Striking balance between humans and nature

A certain characteristic about this area is that it has a history of resource extraction and many students return to school after working in this field. One of the reasons I wanted to do this study was interest in students from this background deciding to enter into the environmental science field. For example, Dustin sees opportunity in his town for jobs in the area after the shale gas resources have been developed. Darryl is very proud to be a third-generation coal miner and having graduated with his degree, recently secured a job with Ohio Department of Natural Resources as a mine inspector. How might they and other students at this institution reconcile resource extraction with feelings for the natural environment?

Dustin sees the need for fracking given energy demands and the economic change in his town, and says that "yes, some areas need to be altered because humans are here."

But he is also a strong advocate for putting care and forethought into extractive activities before they take place, to a further degree than perhaps most lucrative industries would prefer. Darryl too sees resource extraction as beneficial and positive, but states that it does take effort and acknowledges that industries and people are dollar driven. He puts it as "working with Mother Nature" instead of against, and several times during our discussion he advocated the importance of enforcing regulations. So while Dustin emphasized the pre-process, Darryl brought out the enforcement aspect, though both view extraction as generally positive.

Joe talks with regret about his area and the changes it is currently undergoing via development. It is interesting to me that he says "it's sad, but that has to happen, you know." For Joe, too, it seems that his words acknowledge human needs and interests; but regret, also, for the changing of cornfields into businesses. It remains significant to take these perspectives into account, as the Appalachian region has a strong history of resource extraction – its residents could easily be stereotyped as uncaring about the natural world; these statements speak to the contrary.

The overall message from these participants was frustration with the current state of politics. Members of both genders and across income differences consistently voiced this message. Many expressed a political apathy, citing disillusionment with perceptions of the two major political parties in constant arguments with each other, while the participants themselves largely viewed environmental issues as independent from political partisanship. For those who expressed a stronger political identity, environmental issues were viewed as matters upon which parties meet in the middle to

work together, because it is the "right thing to do." By contrast to some literature and congruence to other works, religion seemed to have a positive influence on environmental sensitivity where it had influence at all. It is reasonable to assume that participating in higher education might have some interaction with, or effect on, the types of social effects seen so far, and I will consider the educational context next.

Theme 2 Concept: Educational effects

A person's educational experience can be thought of as another social process which may influence environmental sensitivity. In fact, it may be crucial, as Hungerford and Volk (1990) express that knowledge is critical to develop an "intelligent concern" for surroundings. In gaining this knowledge within a college setting, however, other factors than simply the information itself come into play, which I explore in the following section.

Education as increasing knowledge

Within the arena of increasing knowledge, many participants spoke positively of knowledge acquisition. When asked about his educational experience, Dustin says "that's what I like about it," regarding learning all that goes into water treatment and making it safe to drink. Another aspect might be skill-related, as Dustin also talks about not remembering all the environmental regulations from the course he took in that subject, but rather "I know where to find them." In that sense he took away the most important skill from the course. Similarly, Joe says "Everything I'm learning here will help me in the future" regarding taking care of his property. And Tabby states that "learning new

things is like the biggest thing for me," especially being able to connect it with what she already knows and can use in the future.

The aspect of education increasing knowledge seems to litter Brian's speech. Getting his education seems to have truly permeated his thinking down to the expressions he uses: He refers to "going back to the teachings" (from hazardous waste class) on determining what the proper waste disposal method is, at his job at a county health department. When he speaks negatively about the environmental situations in other countries – for example, China – he admits, "I don't have all the expertise on it" (how often would that cross some individuals' minds before they even spoke?). To Brian, having the knowledge is important, and he sees the value of it for others, too: he states that "not having the knowledge makes a big difference" on people's perception of differences between small and large contributions to climate change. It is likely that the application of knowledge as a pill to cure issues, as Heberlein (2012)'s book describes, is probably an oversimplification as stated in the book and not a panacea. However, seeing it from the perspective of college-educated individuals (for example, Brian who used to think burning tires was neat because of the black smoke), there is also a danger of overlooking the possible impact that knowledge can make in individual cases.

Further, education increasing knowledge may foster appreciation as well, from Lucy's statement "the more you understand it the more you appreciate it…so like learning…being afraid of like a wasp and then learning what it does for you." One way to strengthen these links between knowledge and appreciation might be through the relational values framework of Klain et al. (2017), who propose relating environmental

principles back to personal, non-environmental issues such as place attachment or family life. If an individual holds their political identity as paramount, rather than an environmental identity (see Stets & Biga, 2003), they may choose to align themselves with the "typical" environmental views of that party. If those political views are not sympathetic towards the environment, knowledge application regarding the environment via the relational values framework might resonate more effectively with this demographic (see also Wolsko, 2017).

Education as recognizing error

In some cases, the acquisition of accurate information helped student participants to recognize inaccurate information. Brian speaks of environmental controversies and becoming educated on these matters, as well as not judging people but judging what they do because "sometimes what they do is pretty stupid." Darryl talks about commercials put forward by interest groups; for example, seeing a negative picture of a power plant with emissions coming from the stack - but having toured the plants during his college education and taking an air quality class, learning that the emissions are primarily water vapor. Similarly, Kimberly talks about having discussions with her boyfriend centering on the coal industry (of which he is a supporter due to his job), saying, "I learned in school the complete opposite." She points directly to her knowledge from school in this case. She also says "seems like there's a lot of propaganda going on about global warming," which suggests that there is a right and a wrong way to view that issue, as well, which she very likely she learned in school. In all cases, individuals are placing value on their college education. That is something instructors might take for granted but

should not: the explicit ties that these individuals make back to what they have learned suggests we should make every effort to promote and strengthen those ties in an environmental context. Further, the ability to recognize error in this manner (for example, commercials that are given a certain slant) could allow individuals to critique information by themselves, rather than subscribing to what a certain political or religious viewpoint might be.

Education as mind opening

I can consider education as mind opening as being different from simply increasing knowledge, although the two might go hand in hand. Mind opening, to me, means willing to consider something that is different than what a person initially thought, indicating not just a straight knowledge addition but an actual change. For example, Darryl talks about increasing his appreciation for education in general, and understanding better now everything that his daughter went through in her nursing program. As he continually brings up the importance of environmental regulations in his discussion, he notes that was a new aspect of his education too, that he did not necessarily appreciate when he was actually working in the mines. Too, he speaks of initially pursuing the environmental degree because he wanted to learn "the other side" when he spoke out on behalf of the coal industry; but then opening his mind to safety as a career choice (which he accomplished successfully soon after graduation). Like Darryl, Kimberly too had a certain idea of the degree program, in this case thinking of wildlife conservation as being focused on "animals everything," but learning "that's not even close to what it is…but that wasn't a bad thing." Matt talks about not paying much attention to current events

when he was a kid, including various environmental disasters; but now finding them fascinating to study in class. Like Darryl, he finds special appreciation for why we have the regulations we do: "If you didn't have that, where would we be?"

And Joe, in speaking of managing his property, is always trying to find ways to manage it better. He sometimes spends time talking over possible projects or new ideas with the people in charge of spending money for the property. In finding out how Division of Wildlife is managing food plots using a particular planting and care method, he says, "if they're doing it out there, it means we can do it better." Not let's stay where we're at – "we can do it better." I see that an education in environmental science can be mind opening via knowledge application.

Part of what goes into the characteristic of educational experience being mind opening is the opportunity in a college atmosphere of exposure to differing viewpoints. Experience in higher education might therefore serve to help some individuals' abilities to discuss other sides. Darryl stated that he challenged a particular instructor on some points of which he had a differing view, and that he was not quite satisfied with the answer he got - yet does not speak of it as a negative experience. He also talks about discussing issues with another student who had "180 degrees" the opposite viewpoint as him (i.e. Democratic instead of conservative) and how he became friends with that student after being able to discuss those topics. He mentions how it is important to appreciate the other side in politics, and how labeling or stereotyping (assuming you can fit the person into a box, e.g. if a person is Republican, they are A, B, C….) is a bad thing. And, Dustin, from a Democratic background, nonetheless mentions the need to

work with the current President. I might assume some (or much) of these effects are left to individual agency – i.e. the college experience may have either little or great effect on a person's open-mindedness. For Dustin, it might not have made any difference if working with the current leader was his mindset regardless. Darryl, however, mentioned specifically these aspects as a beneficial part of college. For some individuals that already have the predisposition or willingness, higher education can provide important opportunities for learning to better discuss other sides and increase appreciation for the opposing viewpoint. In the current political climate, this ability is a needed trait to ease the deadlock of opposing perspectives.

Education as affecting behavior

A partial inquiry of this study was the role that education might play in a person's feelings toward the environment. Feelings can certainly be manifested in behavior. Although nature experience is important, Brian said when I asked him about experience that it was not only experience outdoor but also education that made him "more cautious" in what he does as far as changing behaviors such as tire burning. Alice states that she is overall "more aware;" for example, of the invasive species work that needs to be done on her rural property. While not much interested in politics, Alice also says that her education opened her eyes to become more aware of how who is in charge (for example, an agency director) affects natural resources, and says that being educated in this way may influence her to become more politically aware/interested in the future. As discussed above, it is also very possible that education played a part in Darryl becoming more able to dialogue with opposing sides, as he recounts his experience during higher education. It

is important to note here the long-established acknowledgment of disconnect between attitude and an actual behavioral change (Schuman & Johnson, 1976). Though a treatment of attitude theory and the troubled relationship between measured attitude and measured behavior is beyond the scope of this work, recall for this study the role of knowledge (in this case, provided by education). While Heberlein (2012) cautions against the expectation of changing attitudes (and perhaps pursuant behavior) strictly through knowledge provision, knowledge remains an important precursor to environmentally responsible behavior (Jordan, Hungerford, & Tomera, 1986; Newhouse, 1990). Of importance, in this study, participants volunteer examples of their own behavioral changes which can perhaps eclipse some of the uncertainty encountered in traditional quantitative measures (where they must choose between tradeoffs based on how questions are worded, Klineberg et al., 1998).

Class activities as beneficial

Given the possible educational effects listed above, some effort is warranted to discover what, in these students' experiences, helped the benefits to take place. When Alice talks about what she does not like about her current experience at the university she attends, she says it does not have field work and hands on activities like she had before. She also mentions the natural collections (e.g., twigs, insects) that Wildlife Conservation students have to do as part of the program. Part of what influenced her to become more aware politically seems to be how the instructor asked questions in a particular way (e.g. "Why do you think this person is in control?...were they elected?) that she had never thought of before. So perhaps for some it is asking questions in a particular way. As a

non-traditional student retired from a resource extractive career, Darryl mentions that he appreciated being asked for his perspective in class, as he often was. Although the teaching mode labeled ecopedagogy is not explicitly incorporated into these college science courses, there does seem to be a corollary to what Darryl viewed as being helpful. Asking for student perspectives in this way is a form of appealing to "ingenuous knowledge," a tenet of ecopedagogy (Misiaszek, 2016). Two characteristics might serve to label these experiences: Interactive (questions, perspective) and hands-on (field work, collections). Further examples of interaction include many of Hannah's recounted experiences, such as others-related activity directed by the instructor's encouragement – for example, "professors making you do group work, getting to know everyone on a personal level, not having just lecture with everyone taking notes and no one ever talking."

These categories are not exclusive, however - Kimberly mentioned the field work being helpful (hands-on), as well as the "professors getting us involved."(interactive). Lucy also mentioned specific activities (for example, a scavenger hunt, or going to count bird calls) where students had freedom to explore in nature with a definite goal, but not micromanaged (a combination of interactive and hands-on). From an interactive viewpoint, Lucy also mentions loving all her teachers. Tanner (1980) notes teachers as influences of environmental ideals (interestingly, the teachers not strictly as conductors of knowledge, but 'enthused' about study of the natural world or sympathetic toward the student's interest). Those in teaching positions might therefore serve an influential role in

the absence of parental encouragement, with friendliness and personableness of importance (Sivek, 2002).

Activities Joe cited as beneficial appear to all fall under the "hands on" category. He liked the Limnology class, which is one week of full-time field work plus five weeks of online work afterwards, because he liked being able to go out and discover, saying that is how he learns best. Matt too mentioned not being stuck in a classroom and getting out to see new places and things, and also specifically mentioned "hands on" as a benefit. He also mentioned the school's natural resources classroom area as a specific place for hands-on activity as beneficial to students (a "gold mine"). Hands-on activity also allows for direct application of classroom material in the field, as when Tabby's class found a well when they were out exploring property that had not been properly abandoned and were able to advise the neighboring church property about it.

Though Joe may not "like" it in the same way as going in the field for Limnology class, he mentioned several times about learning how to use a pipet as part of the hands-on lab work in the chemistry course. Finally, he both stated his outright dislike for the environmental regulations course but acknowledged how useful it was his first two days on the job. So for him, even the activities he didn't "like" were beneficial strictly due to their hands-on nature. In like manner Tabby found the requirement to present material in front of the class uncomfortable, but states the self-directed research she had to put into the topic very helpful from a learning perspective. Lucy too seemed to gravitate towards the hands-on, since during the field classes she liked being able to see things, touch things, and have them explained as the class went along. The hands-on activities that

students have mentioned can be related to experiential learning, where students participate in actual experiences rather than only "classroom" learning. Experiential learning is found to be beneficial in environmental applications (Duerden & Witt, 2010; Siemer & Knuth, 2001). In a related manner to hands-on, experiential learning, Hannah said it was helpful to have the material related to real-world situations, like the Soil Science final exam.

Importantly, social group and ties can be a beneficial aspect in addition to the interactive and hands-on categories. For Kimberly, having small class sizes and going through the program with the same people in classes meant a close friend group that provided a low-stress atmosphere. For example, Kimberly says she learns better by guessing answers to questions the teacher would pose, even if those answers are wrong; being among a group of friends changes the dynamics of the class environment, making guessing wrong answers acceptable. She also mentioned the small friend group keeping tabs on each other, helping each other to be more successful in their classes. Matt mentioned the small class sizes too, describing his previous experience at a large school where the professor was not as accessible in a large lecture hall. Therefore, smaller class sizes might further improve the interactive dynamic found to be a beneficial classroom experience. Also given this example, it might also promote the instructor's ability to be an environmentally influential persona (Sivek, 2002; Tanner, 1980).

In this study, multiple educational effects emerged as playing a role in participant perspective. Among these are education as mind opening, increasing knowledge, recognizing error, and learning to discuss other sides. In some cases, education did affect

behavior, even given the knowledge-behavior gap sometimes found in literature. There were particular classroom activities cited as beneficial to the students' learning experience, most notably the hands-on aspect of many courses. A discussion of how educational effects might interact with social effects to influence environmental sensitivity will be found in the following section.

Chapter 5: Discussion

The purpose of this study was to explore possible interactions among place attachment, outdoor recreation/nature experience, and social effects, with an effort to uncover their influences on environmental sensitivity within a higher education context in Appalachian Ohio. Research questions included the following: 1. What influence does outdoor recreation/nature experience and place attachment exert on students' environmental sensitivity? 2. How do social effects such as religion, politics, and social capital affect environmental sensitivity? and 3. How does education in environmental sciences interact with these factors to influence environmental sensitivity within this study context? This section will deeper discuss the findings of these research questions in the form of two emergent themes resulting from participant discussions. Theme 1 (Figure 3) deals with the effects of place attachment and outdoor recreation/nature experience on environmental sensitivity, and Theme 2 (Figure 4) will explore the influence of social factors and the educational context.

Theme 1

The forces of modernization and globalization might lead us to question the importance of place; yet, place emerges as a significant concept here as well as in literature (Lewicka, 2011b). Studies have diversified in their focus on the physical (Sack,

1997; Shumaker & Taylor, 1983; Stedman, 2003a) as well as nonphysical (Greider & Garkovich, 1994; Williams & Stewart, 1998; Tuan, 1977) importance of place. In this study, I emphasize the natural environment, which lends itself to a discussion of physical place, yet not to the exclusion of the nonphysical (see Table 2, "Possible place meanings"). Taken in concert, the nonphysical meanings attached to physical place may play a role in predicting environmental concern (Brehm et al., 2013; Stedman, 2002), especially the nuanced form of environmental sensitivity which is based on experiences (Chawla & Derr, 2012; Peterson, 1982).

From participant conversation, I see that "being rural" entails differing dimensions, which may lead us to question the dichotomy of "rural/urban" often used in quantitative work (e.g. Fransson & Garling, 2009; Lowe & Pinhey, 1982; Van Liere & Dunlap, 1980). Further, access differences exist among these dimensions – from owned property to a virtually backyard National Park. Additionally, "being nonnative" has effects both on the local person and the "displaced," and can exist across different scales. I see that the degree of scale may affect the degree of displacement difficulty as new scale-related factors (e.g. climate, culture) are introduced. For this study, an increase in scale (i.e., moving from both the west and east coast to southeastern Ohio, as Alice and Kimberly did) resulted in more strongly felt displacement difficulty, as opposed to moving from out of town (as Darryl and Dustin have). As a corroborating example of the effects of these levels of scale, consider the multinational survey by Laczko (2005), where U.S. citizens felt more strongly attached to their state than to neighborhood, city, or continent. Displacement difficulty felt through these increases in scale, for example an

out-of-state move, could be mitigated through increased access (for this study, to natural areas). Finally, diminishing places may be structurally driven but, as Darryl mused, also include a component of individual choice, such as choosing to engage in technology instead of nature places (Kareiva, 2007; Louv, 2005; Pergams & Zaradic, 2006; but see Fletcher, 2017; Sandbrook et al., 2015 for a positive role of video games in conservation). Creating a place and going to new places represent positive avenues to mitigate negative effects of both losing places and having displacement difficulty, with non-place matters remaining a consideration (Nakagawa & Payne, 2017).

Place may also be viewed as work or responsibility, but this view remains positive with the voices in this study. Ownership appears to merit its inclusion in place attachment measures (e.g. Bolan, 1997; Mesch & Manor, 1998). Taking a step further, caring about/for property may give rise to protective feelings toward the environment in general. This data appears to support the relational values framework proposed by Klain et al. (2017), where the authors suggest a potential avenue to encouraging environmental values lies in "anchoring" these values to someplace that is already cared about or identified with.

Environmental sensitivity is a term that specifically emphasizes a favorable perspective on nature as an influence from formative experiences. Time spent in nature may serve as this type of experience. In Sivek (2002), the primary factor in a mixed-method study of Wisconsin high school students identified as contributing to environmental sensitivity was time spent in nature. In addition to time spent in nature, other experiences such as life in the countryside, formal education opportunities provided

by schools, vocation, and loss of beloved natural places can distinguish the environmentally committed from the apathetic (Hsu, 2009). This form of environmental concern, then, is based on formative experiences, which often occur in childhood (Bixler et al., 2002; Ewert et al., 2005; Guiney & Oberhauser, 2009; Wells & Lekies, 2006).

A related term that is sometimes seen in literature is "connectedness" (see Tam, 2013 for many examples on measures of connectedness). Connectedness may be traced back to value considerations, for example, the term *biospheric* values described by Stern, Dietz, and Kalof (1993). In this perspective, the authors adapt Schwartz and Bilsky (1990)'s landmark values work (self-enhancement vs. self-transcendence, openness to change vs. traditionalism) to discuss altruistic views specifically for the environment (as opposed to humans only). Like environmental sensitivity, connectedness is a term which specifically denotes an affective outlook on nature based on an experiential relationship (Mayer & Frantz, 2004) and forms its own relatively new strand of literature. For our purposes however, note the work of Martin and Czellar (2017) who approach biospheric values from a connectedness to nature perspective and find that stronger self-nature connections in individuals are related to stronger biospheric value orientations via individual environmental identity.

In this study, both aspects of spending time in nature as well as childhood experience emerged as significant, often going hand-in-hand. Being gone and having freedom, as a part of both childhood and adulthood, in addition to having unstructured time outdoor, are important aspects of experience which are mediated through access and

the role of parents. Recall that in the absence of parental encouragement, a well-liked teacher might play the role of encourager (Sivek, 2002; Tanner, 1980).

Experiences might change during the life course. Changing teen years might entail different choices of activity while outdoors, continuing the same activities in different ways, or continuing the same activities for different reasons. These activities can persist into adulthood just as some activities can persist from childhood to teenage years. The ability to drive represents a key point of increasing nature access. Less time may be spent outdoors too, though not an irrevocable change. As the life course progresses, experiences might include an element of loss due to diminishing places, found to influence environmental commitment according to Hsu (2009). Further, life changes may be personal or circumstantial in nature, and access/opportunities should account for these changes over the life course wherever possible.

Feelings about nature as a result of these experiences took several forms in this study. Affective, positive feelings in these discussions were multidimensional, touching various activities (being outside, relaxing after outside work gets done, participating in a recreational activity such as mountain climbing) and emotions (joy, connection, love/caring, feeling physically good). The aspect of "taking for granted" represents the distinction between a conscious vs. unconsciousness awareness of the natural environment, and may represent an opportunity to bring nature connections more into the spotlight. This occurs by emphasizing what has previously been "taken for granted," similar to Lewicka's (2011a) suggestion of place attachment growing from an unselfconscious to conscious attachment. By contrast, having appreciation may stem as

either a result of time spent in nature, or itself drive a desire to be in nature; can provide a component of therapy or religious experience; and may be most strongly felt after loss of an important natural place (see Hsu, 2009 for loss of important place as a category of significant life experience used to predict environmental action). For many individuals, outdoor activity figures so prominently in their early life that they have developed a strong dislike of being indoors, further highlighting the importance of formative experience in discussions of environmental sensitivity (e.g. Bixler et al., 2002; Ewert et al., 2005; Guiney & Oberhauser, 2009; Hsu, 2009; Wells & Lekies, 2006).

In the environmental values and attitudes literature, individuals are influenced by fluid, nested hierarchies of value judgments (Howes & Gifford, 2009), which affect their choices between at-times competing statements used to measure environmental concern (Klineberg et al., 1998). Therefore, individuals are constrained to select their actions contextually. Just as individuals are constrained in choosing among several choices and values, they are also limited by circumstantial effects over which they have little control. Perhaps the most prominent of these constraints is that of having access. In this study, access has the potential to increase place attachment and can mitigate displacement difficulty. For those individuals who experience the outdoors as therapy, having access is a crucial link to overall well-being. Importantly, having nature access does not equate to having rural access. Urban access opportunities exist, and may increase through social capital ties, though ties of this sort remain highly individualized. (Note also that social capital is thought to positively influence environmental concern in some cases, Macias & Nelson, 2011; Torgler & Garcia-Valinas, 2007). Structural efforts such as canoeing

access and parks might alleviate situations where little social capital exists. Many participants expressed a sentiment of "being lucky," which varied from person to person (as to what "being lucky" consists of). Thus, focusing on access and creating opportunity in a contextual manner via the "place, not space" of Relph (1976) and Tuan (1977) affords maximum benefit to individual circumstances. Some of these opportunities might include allotted funding for green space, access, or transit; created multi-family housing which includes an allowance of pet ownership or combination greenspace/dog park; or provision of a rooftop garden or other local space. Each of these urban applications calls back to the aspects of "being lucky" cited by participants: access to outdoor places and activities, interaction with animals, and ownership.

Lastly, generational differences exist that affect both how and how much nature is experienced. Though changes in technology are cited by participants as changing how and how much time is spent outdoor, parental encouragement and outdoor experiences remain strong influences for those expressing affective emotion for the natural world. Monetary costs, too, are associated with generational change relative to spending time outdoors. The vast field of increasing nature access remains a fertile ground for creative future efforts to mitigate costs, reduce access barriers, and raise nature concerns to the foreground rather than the unconscious. Yet, understanding the significance that successful efforts of this kind have brought to the lives of this sample of Appalachian college students, these efforts are surely justified in both the present as well as in ongoing generations.

Theme 2

We have seen in Theme 1 how place, and its associated place meanings, has the potential to positively influence environmental sensitivity. Before proceeding to a more detailed discussion of individualized social effects on environmental sensitivity (research question 2), I will first address effects that social factors might have on place attachment, thus forming another route an individual might take on the path to environmental sensitivity.

Although not one of the variables specifically examined in this study, the interviews with the participants suggest that income is related to place attachment. First, income may negatively affect attachment to place if it restricts access, and can exist on different spatial scales. For example, Tabby has negative feelings towards the place where she lives because it is not in a neighborhood she considers safe for her children, and she does not have much yard for them to play in. Their activity at home consists of indoor entertainments, unless she can get out to family property. Yet, on a larger scale, Kimberly states that she is not very attached to Ohio despite having lived here about a decade, but mentions she can see herself getting attached if she could only visit nature areas more frequently and conveniently. At the time of our interview, she expressed her nearest goal was to work hard at her new retail job to earn enough money for a car, thus increasing her nature access.

Second, income might also affect attachment to a *new* place if lack of sufficient income causes the loss of a beloved place. For example, Matt, despite his status as one of the higher-income participants, expresses frustration at his inability to prevent a beloved

family vacation house in Martha's Vineyard from being sold to others such that it will not be in the family anymore. From his statement "I just can't afford it, I would do something," we can see his preference is for this place, not another place. It is reasonable to assume that attachment to a new place might be more difficult in light of the strong preference for the old.

Last, income might be an aid for individuals to "create a place," noted in this work as a possible mitigation strategy for displacement difficulty. Though, importantly, Alice mentions the *nonmaterial* aspects of creating a place ("It's not the furniture"), Darryl mentions the *material* side in describing what he's done with his property, such as planting trees for a boundary. As a retired coal miner, Darryl is one of the higher-income participants and can afford to modify his large acreage to better represent what he wants.

Though income perhaps has the greatest impact on place attachment in this work, other social factors may play a role in conversations of place as well. Gender appeared to affect place attachment only insofar as the role of primary caretaker is concerned (e.g., Tabby expressed negative place attachment due to its unsuitability for children). Of note, Dustin describes taking his children to a specific campground which he enjoys, so this factor may not be gender-specific.

Religion in these conversations seemed to have an effect on feelings about nature in general, and not necessarily place attachment. For example, recall that Justin, a participant who expressed deep religious ties to nature, volunteered a concept of "new places" to this study, in contrast to *only* attachment to the old. We see this in his statement that "for me, [places] all matter a huge amount."

Politics perhaps had the least effect seen on any feelings directed to place or nature in this study. Participants appeared not to tie political feelings to either place or environmental sensitivity, expressing instead their frustration with the current bipartisan divide on environmental issues, if not an apolitical attitude entirely.

Though perhaps not explicitly stated by participants, social capital may play a role in place attachment insofar as others are incorporated into specific place meanings that participants volunteer. This could be through a *bonding experience with a parent* (Joe: "I don't know what we would be doing if we didn't [work together managing property]"), *place ownership* with someone else (Darryl: "it's our little piece of the world"), a *place for family activity* (Brian: "talking about it [hunting on property] later"), or a *spiritual experience* (Alice's summiting the mountain with her friends).

Given this insight into the nature of social factors' effect on place attachment, I turn now to consider how these factors might affect environmental sensitivity even more directly. The classic work of Van Liere and Dunlap (1980) attempted to uncover links between particular demographics as predictors of environmental concern. For decades, these types of connections persisted in literature, with some showing a more enduring character than others. However, more recent works such as Fransson and Garling (2009) and Liu et al. (2014) caution us not to accept these findings and relationships as set in stone. Although the original proposition by White (1967) that religious beliefs - specifically, Judeo-Christian values - have a potential negative impact on environmental concern is supported by some works (Eckberg & Blocker, 1989; Guth et al., 1995; Hand & Van Liere, 1984), caution is similarly advised in taking this relationship for granted.

First, some scholars find that religion has the opposite effect on feelings towards the environment, due to a pro-environmental stewardship effect (Kanagy & Willits, 1993; Kanagy & Nelsen, 1995; Kearns, 1997; Shibley & Wiggins, 1997; Woodrum & Hoban, 1994). And second, *how environmental concern is measured matters*. Van Liere and Dunlap (1981) suggested this even as early on as they proposed their own survey findings. When Klineberg et al. (1998) look back at the research accomplished largely through Likert-scale correlations or similar measures, they note a lack of consistent relationships between standard demographic predictors and environmental concern. They suggest rather than take such results at face value, that interpretations of the studies must acknowledge the *tradeoffs* that are reflected in the way issues are framed in questionnaire items. In other words, they argue that attitudes toward environmental issues are necessarily measured, whether explicitly or implicitly, in relation to other concerns they may have (Klineberg et al., 1998). Connections can be drawn between this suggestion and the values work of Howes and Gifford (2009), who suggest that values, thought in themselves to be stable entities, are dynamic in their *importance*, existing in nested hierarchies which cause individuals to select actions contextually. Further note the work of Stets and Biga (2014) who include a measure of gender identity in their study of environmental concern, but find that this identity loses significant influence when compared to the *environmental* identity. Therefore, if values, identities, and attitudes regarding environmental issues all can exist as fluid, nested hierarchies which are located contextually, we should take great caution in interpreting the results of environmental concern when seen through a demographic lens.

Correlating with this caution, the evidence for the effect of religion that emerged in this study was varied rather than clear-cut. The strongest takeaway from these discussions was that of *possibility* rather than broad trends. Some individuals, corroborating with the stewardship hypothesis mentioned above, possess a deeply seated environmental ethic that, in their own telling, they explicitly relate back to religious belief. This connection between two identities – the religious and the environmental – is thus very possible, as supporting work has shown. It has potential to be a strong motivator, as evidenced by one participant's discussing of the issue with tears. For individuals that do not themselves express a deep personal connection between religion and the environment in this way, some nevertheless can see the possibility of this relationship existing for others. And it is even possible for White (1967)'s supposition to be supported in some cases, as Joe recounts his experiences between areas of the world (from his perspective, with the United States and associated Judeo-Christian values following the "domination" path rather than those of nomadic eastern peoples).

Although a direct correlation between religion and environmental concern/sensitivity may prove difficult to uncover, this study opens us up to the possibility of religion to be of influence – in ways as varied as the individuals that make up the study and indeed, the nation or world. As such, great caution is advised when interpreting the results of any particular study of these connections, or when attempting to elaborate a theory explaining either a pro- or anti-environmental effect of religion (see Guth et al., 1995; Sherkat & Ellison, 2014).

Political affiliation is often used as another demographic predictor of environmental concern. By contrast to religious belief however, this relationship remains mostly consistent in the studies within which it has been measured (with political liberals espousing greater environmental concern, Liu et al., 2014). It remains important, however, to remember the caution advised by Klineberg et al. (1998) in interpreting these results by understanding the tradeoffs reflected in the choices individuals make via contextual constraints. Though participants purported a wide range of personal political orientations, ranging from conservative to liberal to apolitical, they largely expressed frustration at the current political climate. Most acknowledged the influence that politics can have on a person's environmental beliefs, regardless of whether they believed it should be that way. Those who acknowledged a need for development and resource extraction also evidenced feelings of care for the natural environment – details that could be overlooked in a political designation of a resource-extractive region. Further, those who did subscribe to a particular political leaning did not evidence strong emotion or adherence to that perspective, or an assertion that they were "right."

Of special note, climate change could be construed as an issue especially embroiled in politics of today. McCright and Dunlap (2011) posit the *identity-protective* cognition thesis as an explanation for the "conservative white male effect" on high levels of climate change denial among this grouping, where possible environmental values are subsumed in an effort to protect the individual's in-group and cultural identity as conservative white males. However, an individual's identity may also present a promising route to encourage environmental sensitivity. Experience in nature and

"connectedness," or the extent to which the individual includes nature in the cognitive representation of self (Schultz, 2001), might promote value formation at the individual level, as biospheric value orientations (i.e., "nature-centered" values) can be linked back to the individual through identity. In this way, nature experience taken in concert with the knowledge gained in higher education might produce an environmental identity which demotes the "conservative white male" identity with regard to climate change (and, conceivably, other environmental issues).

On the other hand, when political appeals to the environment match with the already-established political values of the group, success may be high (Wolsko, 2017), leading us to the conclusion that *how* the information is presented matters a great deal in political considerations. For example, Wolsko (2017) suggests that environmental appeals to conservatives from *conservative* values (e.g., purity) rather than those more commonly thought to stem from the liberal environmental perspective (specifically, harm and damage) is a more effective way to purvey environmental goals and provides empirical evidence from a series of responses to varied public service announcements. Similarly, van den Broek et al. (2017) found that environmental campaigns that matched recipients' values (either economic values or environmental values) were more persuasive than an appeal combining both value sets. Ziegler (2017), in an approach considering multiple countries, explores interaction effects between political orientation and environmental values on climate change beliefs, suggesting that specific communication campaigns are a promising strategy to reduce climate change skepticism in the United States.

Any effort to discuss environmental issues in this setting should be mindful of both the area's political background, as well as caution in assuming that all students are "cut from the same cloth" (as I found evidence to the contrary even in discussions with eleven participants). The landscape is not homogenous and should include those with divergent viewpoints in any environmental discussion. In searching for "win-win" scenarios, a diverse perspective would not necessarily require all stakeholders in environmental issues to hold the same values (e.g. biospheric), but rather allow other "reasons" for essentially environmental behavior (for example, benefit received by farmers for some action, or the adoption of 'green' marketing in business). As a historically workforce-oriented institute, it continues to be important to engage employers from the private and public sectors to have input into training needs for environmental management and policy, following the discourse of Steiner and Posch (2006) in taking a truly transdisciplinary approach.

The issue of education is to a large degree related to the attitude-behavior linkage incorporating the aspect of knowledge, and to what degree knowledge makes a difference to individuals regarding environmental issues. I have chosen to approach this issue from the perspective that though knowledge in itself is not always sufficient to change environmental attitudes (Heberlein, 2012), and that if it does, attitudes do not always lead to the expected behavior (see Schuman & Johnson, 1976 for a review), knowledge still provides an important precursor to environmentally responsible behavior (Jordan et al., 1986; Newhouse, 1990) and plays a role in developing the "intelligent concern" required for environmental sensitivity (Hungerford & Volk, 1990). Within this context, courses

taken within the Environmental Science and Wildlife Conservation programs offer avenues to obtain this type of knowledge and experience these environmentally positive effects. Students both discussed the positive effects of knowledge they received during their college experience, as well as mentioning what was beneficial during their education to receive these effects (most notably, hands-on experience, which I relate here to experience-based learning).

The form in which environmental education takes place does seem to matter, with preference given to experience-based learning. Siemer and Knuth (2001) found that youth who participated in programs that included experience-based fishing were more likely to report desired stewardship outcomes (as opposed to programs which did not include actual fishing activities). Palmberg and Kuru (2000) discover via qualitative analysis that environmental education programs that incorporate experienced-based learning (field trips, hiking, camping) increased students willingness to participate in future outdoor activities (see 'self-perpetuating', Guiney & Oberhauser, 2009, above), and nature took on new *meanings* for them as an individual (a possible link to exploring environmental issues via place attachment). They further displayed a clearly empathetic relationship to nature as described by environmental sensitivity (though the specific term is not used in this study). Duerden and Witt (2010) also find that direct vs. indirect nature experiences may have different effects. Specifically, in their study, environmental knowledge increased more than pro-environmental attitudes during the indirect portion of the program (classroom based), where direct experiences (during an international workshop)

"catalyzed" that knowledge into a stronger motivating force for behavior than the indirect portion.

In addition to experience-based learning, the concept of "ecopedagogy" is one that can be incorporated as an element of education in environmentally based classes. Misiaszek (2016) uses the approach of a qualitative study involving 31 ecopedagogues including experts from Argentina, Brazil, and, notably, the Appalachian region of the United States. Respondents indicated a need for an ecopedagogical paradigm shift in teaching and research in order to achieve an effective environmental pedagogy in both their regions and the global stage. Misiaszek (2016) notes, importantly, that labelling an environmental pedogogy as ecopedagogy is not seen as essential, but rather that an ecopedagogue is determined by how their teaching adheres to ecopedagogical practices and goals such as active dialectic and problem posing. Therefore, if research indicates a need for ecopedagogy as part of a more effective environmental pedagogy in Appalachia, this goal could be achieved not by the somewhat daunting task of funneling certain experts to a disadvantaged region, but rather by incorporating certain teaching practices and emphases into already existing environmental education structures, notably within science-based courses. One way in which this could be done looks back to considerations of place attachment and appealing to environmental values possibly already inherent in Appalachian students.

Ecopedagogy advocates "arousing a person's curiosity, using their ingenuous knowledge" (Misiaszek, 2016), and appeals to "common sense knowing…extracted from pure experience" (Freire, 1998). One example of this practice in place might be when

Darryl felt it was significant to be asked for his input as a coal mine veteran during classes. Misiaszek (2016) suggests that this background is the base upon which more epistemologically rigorous understanding can develop. For example, if Appalachian residents ascribe inherent value to forest and wilderness areas via recreational opportunities or simple existence factors (Aldy et al., 1999; Moore et al., 2011), or experience ties of place attachment via place-dependence or place-identity on these areas (Norton & Steinemann, 2001; Williams et al., 1992), ecopedagogy may be used to effectively draw on these experiences in order to produce a more comprehensive environmental pedagogy in the region. As awareness of environmental issues does not always result in stimulation of environmentally responsible behavior, place attachment might therefore exist as another asset to environmental education (Vaske & Kobrin, 2001), even within the higher-education sciences.

Rather than simple lecture format, problem-based learning scenarios of different types can also be effective (Dahlgren & Oberg, 2001), as can the use of transdisciplinary case studies (Steiner & Posch, 2006). Warburton (2003) suggests that "deep learning" (drawing connections, comparisons, personal relevancy as opposed to surface-level, "rote" learning) can be effective but may be inhibited if students have a strong disciplinary focus (e.g. accounting instead of sciences), so this type of learning may not be as effective in courses where non-science majors take the course as an elective. Scholz, Steiner, and Hansmann (2004) find that a required internship for environmental majors helps improve critical skills such as communication, which is yet another skill required to alleviate stalemates between opposing views in politics or religion.

The social factors of gender and income were found to contribute in several ways to the conclusions of this work. Notably, income can increase mobility, allowing opportunity for "going to new places" which some participants cite as a meaningful way they enjoy the natural environment. This opportunity can vary from "gas money" used to access local parks, to taking an expensive out-of-state hunting trip. Increased income can develop as part of a change over a person's life course, and might provide opportunity for property ownership, found to play a role in environmental sensitivity for some participants. However, income did not appear to play as significant a role with consideration to early life experiences, since participants commonly recounted experiences of the type that do not cost very much, if anything. *Access* appears to be more significant in these cases.

I did not perceive significant gender differences for the concepts of family ties, educational effects, feelings about nature, property ownership, early life experiences, or religion/politics. In cases where parental encouragement was a factor, this encouragement occurred regardless of the child's gender. However, some female participants cited a reduction in outdoors activity as part of changing teenage years, and that the activity they did engage in was predominantly socially driven. By contrast, some males that had progressed further through the life course placed less emphasis on social relationships for outdoors activity. One female participant with children often brought up concerns about her surrounding environment, expressing a desire for increased nature access. Differences in environmental concern could therefore exist along a gendered divide *if* females have

the role of primary caretaker for their children. For this study however, the commonalities in perspective across genders outweigh the differences.

Limitations

Several limitations exist for this study. I have discussed the merits of qualitative research relative to this study topic in preceding sections. However, in a plea for a more rigorous program of quantitative hypothesis testing, Stedman (2003b) cautions that a qualitative-only approach may impede the development of principles that can be examined across settings. This is the classic "generalizability" argument often raised against qualitative research. In its most limiting case, the idea of qualitative "transferability" (in which the reader decides the applicability of principles that can be transferred to a different study or context) may not produce valuable insight into another setting, depending on the researcher's judgment. Further, as Stedman (2003b) notes, a program of strictly qualitative research may be a barrier to integrating place variables within traditional forest management. Much funded work and federal policy is reliant upon quantitative research and a positivistic, hypothesis-testing approach. However, as I have noted when discussing the value of place meanings, qualitative work is of value in first deciding what variables to include in a positivistic approach (for example, the participant can supply a range of place meanings rather than the researcher).

Additionally, following the discourse of Hennink et al. (2017), the inclusion of more participants could deepen understanding of the concepts that this study generated. That is, even if no new thematic concepts are developed from additional participants, the additional codes they might supply can aid in understanding which concepts might have a

greater significance in affecting environmental sensitivity relative to others. This study is limited in such a fashion that it seeks to describe only the interaction between concepts and how they affect environmental sensitivity, without consideration given to which of these components appears to have a greater significance than others.

Future Research

Recommendations for future work include an exploration of the inclusion of place attachment in the relational values framework (Klain et al., 2017), and the efficacy of including ecopedagogical tenets in classroom environmental discussions, especially in an Appalachian context (Misiaszek, 2016). As concepts such as NIMBYism are viewed differently in light of place attachment (Devine-Wright, 2009), so might studies of Appalachian environmental attitudes benefit from a place attachment perspective.

Future work should also take into account the variability in religious beliefs as they intersect (or not) with environmental concern, being cautious when interpreting results. The same caution is warranted when politically categorizing a certain region of the country, with the realization that much of the climate of polarization does not necessarily filter down to the everyday citizen who does not strongly ascribe to politics. In consideration of those that might have a stronger political identity, more work is called for on what types of classroom activities and environments are beneficial in producing students better poised to create a "middle ground" in politics. As efforts are ongoing in how to best reconcile the partisan divide with regard to environmental issues (van den Broek, 2017; Wolsko, 2017; Ziegler, 2017), education research might prove a fruitful arena within which to incorporate practical suggestions from these works.

Gendered differences in this study largely fell within the idea of "changing teen years," with more females than males expressing a reduction of outdoor activity, and that it became more others-driven. Future work could take this finding into account when attempting to craft effective nature outreach programs (i.e., specifically acknowledging and further exploring the role of social interaction with female teens in the outdoors). Further, future research may look into the differences between how females and males might experience the natural environment as adults, as a focus on populations other than Appalachia might reveal greater distinctions than found in this study.

Increased income may be significant to enjoy the outdoors in a particular way (e.g., technology-intensive hunting or "seeing new places" on a larger scale); yet, income did not seem to affect early childhood experience in nature for this sample. Future studies should focus more on potential differences in income and nature experience for those of early childhood age.

As an individual progresses throughout the life course, increased income can also afford the benefits that participants cited regarding property ownership, and may affect access in some places (e.g., owning a car or having "gas money"). Future research in the discipline of city planning could produce needed solutions in the problem of access, especially urban access, which I find here as being so critical to individuals' enjoyment of positive benefits from nature. Examples of increased nature access within this work could include greenspace incorporation, public transportation, and the idea of "urbanized" nature (i.e. rooftop gardens, interaction with animals/wildlife).

This work is also limited in that it focuses on one area of the Appalachian region (southeastern Ohio). Other locales in the area, such as the deeper portion of the region stretching through West Virginia and eastern Tennessee, might showcase the attributes of Appalachian culture even more strongly and yield findings that further understanding. Future studies might also include qualitative interviews with residents outside of the Appalachian region, students in majors other than environmental sciences, or those with no experience in higher education. Findings from these types of studies might provide a contrast to this study in Appalachian Ohio, further illustrating the significance of place and context.

Implications

One important implication of this study includes support for the increased role of place meanings in both place discourse and the practical management setting. This could mean, for example, a qualitative pre-survey to uncover what specific place meanings are germane within a particular land management context before further quantitative work is attempted in that locale (discussed in more detail, following). As seen from the place meanings supplied by participants, family can play a significant role in outdoors experience. Further works might take into account the special role of children with relation to environmental experience as well as sensitivity, not thoroughly unpacked here.

A second implication relates to an acknowledgment of the negative role that circumstantial constraints can play on positive effects to environmental sensitivity. In essence, it necessitates a realization that aspects out of the individual's control may dominate attempted management efforts unless those constraints can be lifted. In some

cases, a structural fix such as increased opportunities for public transportation or planned "urban nature" spaces may be called for. Although nature access existed as a prominent theme in this work, I have in no way managed to address all questions or possible solutions regarding the dimensions of access. This concept should be examined further; the literature of city (and community) planning might prove a fruitful field for these efforts. A further circumstantial constraint involves intergenerational differences, also not expounded in detail for this work. Future works, especially those with a focus on cultural shifts (vís-a-vís the discussion of Matt and his son's differing technological tools for outdoors activity and the monetary costs involved) might therefore take these generational differences into account more explicitly.

These findings also have implications for the role of education in tempering possible negative social effects such as political entrenchment. That is, learning how to participate in constructive dialogue with those of an opposing viewpoint provides skills necessary to alleviate bipartisan friction on environmental issues. A particular focus of ecopedagogy, "appealing to ingenuous knowledge," was invoked in this study as effective in the learning environment, warranting further incorporation into educational efforts. Conversations of place might represent one avenue of exploring ingenuous knowledge – for example, a classroom instructor might ask about particular places of import to students, with intent to generate discussions concerning possible environmental effects on those places. In cases where students express a degree of attachment to place, an instructor could craft further discussion questions or activities that assess students' perceptions of linkages between attachment for a particular place and the natural

environment in general. In situations where environmental conflict resolution is used as a classroom simulation activity, the instructor could bring out place attachment as an alternative framework for NIMBYism in order to help opposing sides better understand and resolve the issue.

Finally, though knowledge may not be a definitive cure-all for environmental issues as Heberlein (2012) cautions, this work does imply a significant role for gaining knowledge as part of the higher education context. In this study, outcomes resulting from gaining knowledge include behavior change as well as learning to recognize error in media.

Last, we see a role for qualitative work in questions of place and other factors' relations to environmental effects. Given the prominence of place meanings in this study, we can easily see the value to even a mixed-methods work. For example, preliminary qualitative efforts to uncover various place meanings could then be incorporated into conventional survey research, thus satisfying the demand of funded forestry (or other recreational space) management as relying on large-sample, quantitative work, yet guided by the deeper meanings supplied by qualitative inquiry (rather than researcher-supplied). One possible scheme is as follows: 1. Identify a particular area where a management decision is to be applied, e.g., conversion of a particular sector of wilderness area to recreational use, 2. Proceed with recruitment efforts for preliminary qualitative work, in the form of brief interviews regarding meanings that participants have for the wilderness area, and 3. Incorporate this sample of meanings in construction of quantitative surveys regarding the proposed land use change. More information might be garnered by

inclusion of "other" as one option for place meanings when the survey is administered, allowing respondents to supply their own terms that, even if not incorporated into statistical results, can shed light on a deeper understanding going forward of the meanings that individuals have for places.

Conclusion

This work was an exploration of factors which may have an influence on environmental sensitivity – namely, place attachment, outdoor recreation and experience, and social effects with an emphasis on education. As we return to research question 1, regarding effects of place attachment and outdoor recreation/experience on environmental sensitivity, an overall positive story can be told. In this study, I see that having good feelings for a well-loved certain place may give rise to protective, affective feelings about the natural environment in general. I also find that the experiences that persons have, whether being outside as a child, or seeking a specific activity such as recreation, therapy, or time with family, supply meanings to places where these activities occur. In this way, outdoor recreation is linked through experience to conversations of place, with resulting positive effects on environmental sensitivity.

As a caveat to this first research question, these positive effects of place and outdoor experience are mediated by circumstantial constraints such as access, acquisition of situational advantages (i.e. "being lucky"), and monetary or opportunistic restraints imposed by generational differences. Though situational constraints or generational circumstances may be individual-level challenges that remain difficult to answer, opportunity exists to augment these positive effects via structural-level efforts focusing

on increasing nature access to individuals. As such, in today's highly interconnected, technologically advanced world, I see there is indeed still a place for nature.

I also explore the possible influences social effects on environmental sensitivity in the second research question, and educational experience in the third. Beginning with the second question's focus on social effects, I see income as a possible influence to environmental sensitivity when viewed through the lens of its implications for place attachment. Reduced income may restrict access to nature and decrease place attachment, or increase it through the opportunity to create a new place. Gender effects on place attachment appear to be significant only insofar as they relate to the role of primary child caretaker in this sample.

In consideration of direct effects on environmental sensitivity, I see that religion is found to exhibit influences as varied as suggested by literature. That is, some participants tie religious beliefs and environmental feelings together tightly in a stewardship mentality, while others without these connections are open to the possibility these beliefs might have influence for others. With regard to politics, participants expressed frustration with the current political climate and mostly conceptualized environmental care as "the right thing to do" rather than a religious or political issue. Focusing on social capital, I see that while social capital assets such as having a family heritage in a natural area or family history of outdoor activity can help to promote these traits to others, much is left to the individual as I take note of those participant examples lacking this heritage, yet showing a strong proclivity for nature. The outdoors and accompanying experiences can provide opportunities for bonding between individuals

who might experience difficulty otherwise, and can also be a way to encourage a pro-environmental outlook to those who primarily view nature as a place to enjoy others-related activities.

The third research question requires taking all of these possible influences in hand – place, outdoor experience, and social effects – and situating them in an educational context, specifically, participation in higher education. I can think of the primary influence of educational experience in this case as providing knowledge, which is known from literature to be a significant precursor to environmentally responsible behavior, as well as allowing the opportunity to develop an informed concern for surroundings as inherent to environmental sensitivity. Other effects discussed by participants include the ability to recognize error, the ability to discuss other sides, and the possibility for educational experience to be mind-opening. In this way, positive educational effects have the potential to mitigate negative social effects (i.e., religion "telling you what your opinion is," or political deadlock due to strict party adherence or having no middle ground). Class activities cited as beneficial by students placed a heavy emphasis on hands-on, i.e. experience-based learning; other suggested approaches to produce a positive outcome in environmental issues have been discussed above.

Overall, from these discussions with eleven Appalachian college students emerges a ray of positivity and hope for both environmental proponents and educators. As the region is heavily resource-extractive based, with a history of political conservatism and religious adherence, it would be easy to make the mistake of painting in broad strokes and overlooking the details as relates to individual feelings about the natural

environment. Participants discussed the need for a balance between humans and nature in the face of resource extraction and development, and expressed frustration with political deadlock and having no middle ground, rather than a strict party adherence. Further, religious influence existed primarily as a pro-environmental stewardship ethic where it existed at all. Education emerges as having a very real positive effect for some individuals; the traits it fosters such as open-mindedness and the ability to recognize error may serve to alleviate negative effects in dealing with politics, for example. In a region where it is easy to overlook the support that may exist for ecological issues, I find instead this may be the perfect environment for nature.

There are several broad takeaways to be garnered from this work. First, in regard to the nature of the interaction between outdoor experience, place and environmental sensitivity, we see that outdoor recreation/nature experience positively influences environmental sensitivity through *place meanings* as varied as the individuals supplying such meanings. Second and importantly however, these positive effects to environmental sensitivity are mediated by circumstantial restraints, such as access, which remain out of individual control in many cases. Third, the oft-contested question concerning the role of knowledge as regards environmental concern (or sensitivity in this study) is found to play a role in the setting of higher education, where knowledge provision can mitigate negative social effects in this context. Fourth, we see the prominent role of hands-on learning as an effective teaching method, further supporting the work on experiential learning for environmental outcomes. And finally, we are advised to use caution when interpreting environmental concern (or sensitivity) through a rural-urban lens, as there are

many dimensions along a continuum of "rurality" and rural residents in this study espoused a high degree of environmental sensitivity, by contrast to some earlier research findings. While this study took place in a particular context and is comprised of individual perspectives, it sets the stage for meaningful discourse involving concepts that may be fruitfully explored in other settings. In considering every one of these aspects in whatever context we find ourselves in, we can benefit not just the Appalachian region, but ourselves as a whole.

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Appendix A: Interview Questions

Where did you grow up?

Tell me about your experience spending time outdoors as a child growing up.

Tell me about your experience in outdoor activities as a teenager. Did your experience change in any way relative to childhood?

Are there any experiences in nature from any age that have been particularly significant?

How do you think time spent outdoors might influence your life and relationship to nature now?

Tell me about the place where you live. (See what scale they provide as a starting point).

Do you have any particular feelings about this place?

Tell me about places that are important for you to go to enjoy the outdoors. Why are they important?

If you had to describe what these places mean to you, what would you say?

As we're talking about all these places that are important to you, how do these places and activities you do in them make you feel about the natural environment?

Do any relationships play a part in how you experience the natural environment?

Can you describe any sense of connection you see yourself as having to nature?

Has that connection ever caused you to make any sort of decisions in your life related to the natural environment?

Tell me in your own words about your path to higher education.

Can you describe your overall college experience?

What led you to choose this major?

Can you tell me about any effects your college education might have had on how you think of the environment or wildlife?

Can you tell me about anything that went on in class in particular that helped these effects to happen?

What are the risks to the environment or to wildlife in the area where you live?

How do you perceive risk to the environment or wildlife on a larger scale (for example, nationally or globally?)

Do you have any personal experience with how religion might play a part in how you feel towards the environment?

In your opinion, could a person's religion have any influence on how they feel towards the environment?

In your opinion, could American politics play any sort of a role in a person's relation to the environment?

Appendix B: Common Codebook

Codes listed in bold. Supporting data from interview process follows.

Being nonnative: equating not local with littered fishing spots, "now I don't know hardly anyone' in original hometown, "they treat the locals as disposable employees" for fracking, moving towns as a child and being upset, state versus region (coastal Maryland), living all over but returning, growing up 15 minutes from present home, never living outside of it

Being rural: 'little town, 4000 maybe," "in the cornfields, nothing too exciting," 200 people, surrounded by farmland and woods, "I've always been in the city" "…nobody even knows where it's at…my great grandpa put the first house on there so (the road)'s the same as our last name." "We were 3 miles out in the boonies, so my dad always called it 'down in the holler'"

Having access: national park, family property, personal property, state park, football in yard, grandparents owned part of Erie Canal, state parks, AEP free camplands, walk/bike with father to downtown Newark and walk around, not liking boyfriend's house because can't walk out back door to walk through woods, increasing access to activities for city folk, participating in community activities – Boy/Eagle Scouts, FFA, having naturalists at Deer Creek, camping being affordable, "it's nice to know my dad isn't too far away so I can always go to that place," "almost everybody likes to hike, even if they're from town," "it was nice, we had like 60 acres," "now I have to drive or bike or find somewhere else to get to in order to have that peaceful mind," "grandparents lived on a lot of property," "every time I go out it has to be like a planned trip…I wish I lived further out of town so I could, you know, drive 5 minutes over and go explore," "if I could spend like the

amount of time that I choose out there, I can easily see myself getting attached," family property, participating in community activities (Boy Scouts)

Being gone/having freedom: riding bikes to each other's houses, parents aware "stuff could happen," day camp/gone all day, "could kind of do what you wanted" as teens, dogs unconfined, "always had to be out of grandma's hair," "we stayed all day there," "we could go by ourselves," "I stayed out so I didn't get yelled at," "I don't know when I ever wasn't outside," "my parents said as soon as I could reach the doorknob I was gone," "I had that free range, and my parents didn't like lock me up so I was able to do what I kind of wanted and check things out," "I was always outside," "digging around in streams and stuff, most of the time without permission," riding bikes everywhere if back by certain time, "crick" was "like a babysitter"

Changing teen years: less time outdoors, activity change to secret parties, others motivated, driving, experiencing with parent, activity change to trapping/hides in winter, can do more on your own or with friends, driving, activity change to secret parties, can do more on your own or with friends, driving increases access, can go fishing on my own, still did "childish" things like flip rocks, doing same activities, but doing it more when mom passed away, getting into running and trail running, nature as therapy "teenage, it got kind of more into the anxious, anxiety, and having issues," changing from home school to public high school ("I'm really startin' to change) , getting a phone to sit and play with meant less time outside, "it changed a little bit because of school, and because of you know, technology advancing," less time outdoors, didn't want to ride bike or play outside when moved to Zanesville from Maryland, preteen "mad about everything," doing same activities but with younger siblings, from playing in "crick" catching everything, to hunting "one of the two I was doing it (hunting or fishing), as a teenager to this day (laugh)"

"Bonding experience" with parent: different visiting redwoods with mother than a child in a group, increase: "started hanging out with my dad more," fishing, fox hunting "something I would do with my dad" who normally worked too much to be outdoors,

walking/biking with dad, “always” going fishing, being “super upset” when depression affected fishing, “I don’t know what we would be doing if we didn’t [work together managing property],” “the best memories I have of my dad are when we’re walking around” doing things

Overcoming a “challenge”: hiking mountain in park with friends, turkey hunting, “I want to camp, by myself… leave me alone, I got this”

Connecting to particular nature: ocean “craving, missing,” connected to property, “In a way I have to have a connection to the city cause it’s just instilled in me,” “if I were to move away I’d always miss it and want to come back” (father’s property)

Having “good feelings”: about home, being outside, after work is done, toward home, “perfect,” “beautiful,” natural environment: “like it, love it,” not having strong feelings for current home, not liking current home because can’t walk out to woods, but liking because it’s a small town, not liking current home because it’s apartment, waking up on cold mornings without central heating, “It was more classic, it might have been more uncomfortable, but it felt good,” liking current apartment for independence, “I always feel better when I’m spending time outside and running around…it’s healthier,” liking apartment for its mobility, independence, temporary aspect, “it makes me feel good, being out and about,” nature/outdoors makes feel “just happy in general,” “I just love the world so much (very emotional)”

Place as work/responsibility: amount of brush/invasive “overwhelming,” garden, positive experience because work is outside, learned to work hard, “it’s rough,” looking forward to people helping, “the natural world taught me to be a hard worker,” “to maintain it takes a lot of hard work,” “It’s a lot to mow…but I want it to look pristine…I wouldn’t have to work that hard if I didn’t want to, I could just let it grow”

Creating a place: turning house into home, memories making home feeling, “not the furniture,” “our little piece of the world,” improving when hole cut in tree line

"Taking for granted": property "there all the time," "get that constantly," existing places when young, not considering outdoorsman identity until talking, appreciating home more when talking, more connected to home than realized, "as I'm talking….more ways to enjoy outdoors than hunting or fishing"

Not talking: "it's awesome, nothing has to be said," "my wife and I, we talk a lot," "it's constant talk throughout the week," networking, "talking about it later" part of family activity, "I guess none of my family…we're not super tight…we won't talk for a long time"

Education as affecting behavior: becoming "more invested," awareness of political effects, possibly affecting future political interest, addition to experience, being "more cautious"

Class activities as beneficial: learning hands on, field work, collections, asking questions not thought of, being asked for own perspective, professors making you do group work, getting to know everybody on personal level, relating back to real world, not lecturing with no talking, going out and discovering, learning hands-on lab equipment, learning to read regulations, connecting to others with similar interests, extra activities like barn owl banding, campfires, helped get back into nature after high school, field classes = see things and touch things, things explained as we went, "everybody's like minded so you get along with everybody…you make friends easier…classes are difficult, but not impossible…have to be active in studying and keeping up with what's going on, I loved all my teachers," independent learning projects/self exploration (scavenger hunt), friend group made guessing wrong answers OK, "that helps me learn better," field work, teachers getting us involved, friend group keeping tabs on each other, self directed research and presentation, even though uncomfortable, field application of class material (finding the well not abandoned properly), not being stuck in a classroom all the time, seeing different places, being hands on, having small class sizes, having access to Natural Resource Center

Religion having influence: through social group, love of nature can eclipse, deception, "telling you what your opinion is," taking care, taking care, connected to morals, Native Americans "got it right" due to focus on nature, that you can see, not many other religions, being unsure but thinking so, separate "for me at least but maybe not for other people," taking care not necessarily as religion, materialism/development, "I feel like I'm created in tandem with it," "When I'm separated from it I feel like I'm not all me," "this was specifically made…this was all planned out…that's really cool, and I appreciate it…you want to keep it, like good, and clean, and everything," people who choose to worship a different religion than parents have more open minds, taking care "if we can't do that (help the earth)….(tears, long pause)…then what were we put here for?" "We're supposed to take care of this planet," negative case, "I've never heard anybody say that," asking for example

Politics having influence: leaders-driven, making assumptions, "the way people say things sometimes, politically," being money-driven, being money-driven, "people religiously following a group of people," "It can if you let it," "I don't think that anyone should put a label on themselves," "if you put a label on yourself…and you do everything they say…you're not really being you," "I feel like politics don't directly relate" (rather, individuals and how they're raised and where they're raised), "it's kind of a weird line there," "politicians have a lot of influence on the public and most of the time I don't think it's a good influence," "in my personal aspect…it has nothing to do with politics," plays a big role if someone's really big into politics and they listen to their side without researching it, "that's with a lot of people, I think," forming own opinion, "if you believe in something stick with it, don't let 'em all over you," being divided, "pick a side….I mean you don't have to pick a side but at least pay attention," the environment is a crutch they can use against each other to manipulate money

Caring about/for property: not letting others on to harvest, not using lots of chemicals, feelings about place make me feel protective, keeping own place clean, can regulate it, take care of it, see what's going on, "I like having my own property"

Doing something outside as vacation: camping, enjoying "simplicity," getting a cabin and hiking, wanting to go to mountains every year instead of Nashville, "people say they're going on vacation, we're thinking, where are we going camping?", "we're like, we're going on vacation, but we're going camping," "If I couldn't go outside…what's the point of vacation?"

Seeing the unexpected: wildlife events, sites on job, uncommon wildlife on property, "finding something new" at lifelong park, working in different places though job is the same, trip to Smoky Mountains had "neat wildlife…I've never seen before," hearing a fox screaming at house growing up, not wanting to walk bike path anymore growing up after several times a week, fishing turtle out of pond when solo camping, "you can take the same trail every day for a week and see something new every single day"

Education as recognizing error: environmental controversies, not judging people but what they do, because "sometimes what they do is pretty stupid," interest group commercials, "rather than assume anything I'd rather learn about it" [seeing inconsistency with TV climate change program])**,** "I learned in school the complete opposite," discussing with boyfriend about coal, "seems like there's a lot of propaganda going around about global warming"

Having ' no middle ground ' in politics: "going with what their party believes in," labeling, being divided, labeling, being divided, "that's not the way the world works," "I'm a very middle ground person, like I can see your side," "I don't think that anyone should put a label on themselves," "if you put a label on yourself…and you do everything they say…you're not really being you," "everybody's different, you never know. There's stereotypes, there might be a majority, but it doesn't mean that's always the case," politicians not being able to change their mind or people get upset, stifles new

information opening new doors, “we’re in such separation right now which is crazy…I mean there should be something in the middle there where the environment takes precedence regardless of what side you’re on…it’s where both of you live”

Having unstructured time: “we stayed there all day just wading through the cricks and stuff,” running around woods, playing with sticks/rocks, building forts, “usually I didn’t have a goal, I didn’t have like specific things I did,” “looking for animals, or just taking pictures,” “feeling the wind or looking at a tree…just became therapy,” “I’m not doing anything at all, I’m just being there, and checking stuff” (like flipping rocks), “half the time I don’t care what activity I’m doing as long as I’m happy,” “structure isn’t what’s going to get you through life…it’s the adventure and the unknown and the slow,” “I was just out and about…I would just go out and walk up the hills, and down hills,” “I like just going and wandering”

Parents encouraging: limit on video games, “things like that that our grandparents let us experience,” “you’re either in or you’re out,” spending almost every weekend at the Muskingum River, “what he did know he tried to teach me,” “My dad’s always known a little bit…he’d tell me little things now and again,” with education: “my dad was super proud, he was like, yeah, you’re doing wildlife!”, dad picked up snakes/animals, “so then I’m like that way too,” “she showed me the tide pools…look how cool these are, you can find starfish,” “most prominent memories as a child was at the beach with my grandmother,” city kids in conservation camps through parents’ word of mouth, “we say get outside, don’t stay in the house,” “Dad’s not big about staying in the house at all,” parents frustrated because “all I did was hunt”

Getting away from everything: including even family, hustle and bustle of activity, town was “foreign…confusing and uncomfortable…once I got to my dad’s house, it felt like it was on a different planet,” “I went outside because I felt like I was away from all the problem (bullying from others),” “It just became more of an escape”

Experiencing nature as therapy: less recreational and more therapeutic, fighting with father or being in a bad mood = walking as go-to, "the way I'd ease my mind," "it's a peace of mind," tuning in, "gives you a chance to think…it's therapy, right?" "when I get real stressed, I think about that," "it was the thing that got me through the hard times anywhere," "when I got outside…(the problems) just fell off," having unstructured time, group connection – bringing over to father's house, "if I feel overwhelmed I can go out and go for a walk and feel better," "I really appreciate having the ability to go to these places…for that…peace of mind," "it's just good knowing" (about how many bird calls in area)…it's peaceful"

Having appreciation: as part of the therapy, spending time outdoors-caused, spending time at camp because appreciates it so much, "picking up a clump of soil and understanding what that can do," getting great appreciation when uncle shows him things due to close relationship, "I get a great appreciation for wildlife" from watching them, "I feel super blessed" to have the property, "I see wildlife as primary and job as secondary…it's just a different level of appreciation," time spent outdoors made me appreciate it (beauty and interconnectedness, to be part of that); "I really appreciate having the ability to go to these places…for that…peace of mind," "from my childhood, like I've always been, like, appreciative and stuff," loss ("when you have it then you lose it, you appreciate it"), for different management styles in different places

Changing over life: from recreation to therapy, less importance on social relationships, appreciation for peace and quiet, being less attached to political party, taking pictures instead of hunting, less experience with social group, more experience with spouse, noticing more division/political correctness in politics, "before Newark got bad," circumstantial vs. personal: "water level seems much lower than what it used to be years ago…fishing isn't as good," "I've changed now, I don't care to kill things…as a trophy," "I'd rather take pictures (laugh)," mobility/access ("I had everything I needed here…it was free (laughs), but now I go places," "being able to venture different things, that's pretty awesome"

Having urban access: "there's nothing really," "no woods," Wills Creek less than 2 miles away, being nice because I can spend all my time elsewhere, "at least I got a balcony and stuff," "it'd be nice if I was like on the wooded side…but oh well," "now I have to drive or bike or find somewhere else to get to in order to have that peaceful mind," "even if you're in the city, everybody's connected," "I think everybody needs…that time out in nature, from a healthy aspect of it," house doesn't have much land, not in safe area, church permission to shoot bows

Going outside with family: "grab the kids" and go to AEP camplands on an adventure, going kayaking with mom and sister, big hunting extended family group, talking about it later, Salt Fork, grandmother's house with sister, play out in parks, dad was a "workaholic," didn't learn much from him, but from uncles and friends' dads, going to Canada every year with family and friends group

Having peace and quiet: as a benefit of where home is located, getting away from crowds, everything even family, benefit of nature, at house, getting away from people, peace and relaxation basis of connection to nature, town was "foreign…confusing and uncomfortable…once I got to my dad's house, it felt like it was on a different planet," "I went outside because I felt like I was away from all the problem (bullying from others)," "it just became more of an escape," walking through woods with dogs was peaceful time, going on walks now makes feel better if feeling overwhelmed

Tuning in: "nothing better" than sitting outside listening to crickets and frogs, sitting outside in chair on property listening to sounds, listening to birds and crickets at house, "I don't get in and disturb it, I just go out there and hang out," "If you sit you can hear everything," "do more than just be active…sit down, and think and feel…observe"

Education as increasing knowledge: "that's what I like about it" [learning about what goes into water treatment], won't remember all environmental regulations "but I know where to find them," "I don't have all the expertise on it" [China's poor environmental situation], "going back to the teachings" on proper waste disposal relative to job, "not

having the knowledge makes a big difference" on people's perception of differences between small and large contributions to climate change, "everything that I'm learning here will help me in the future" with managing property, being picky" and "super critical" about brush, invasive species, education increasing knowledge increases appreciation, "the more you understand it the more you appreciate it…so like learning…being afraid of like a wasp and then learning what it does for you," "learning new things was like the biggest thing for me…if I can learn something new and put it forth towards…what I know and what I can use later on," complexity (of landfill)

Striking balance between humans and nature: seeing a need for fracking, seeing some areas need to be altered because people are here, putting care and forethought into resource extraction, takes effort, dollar drive, working with Mother Nature, resource extraction as beneficial, enforcing regulations, "it's sad, but that has to happen, you know [big businesses replacing cornfields]"

Diminishing places: "some places…are just too beautiful, why would you ruin them?" due to urban sprawl, technology, "cornfields are getting wiped out, and big businesses are getting put in," "it's awful," development (from here to Columbus more isolated spots and plots, big companies instead of mom and dad stores ("that was like somebody's living through 3 different generations…that sucks! It really does, it's like why do you have to put so many of them (Dollar Generals)?", liking farmers and farming because that means there's not development/buildings there; losing family house at Martha's Vineyard due to relative selling it ("I just can't afford it, I would do something")

Being unattached to political parties: has changed over life, "I just care about doing the right thing," rather than party, labeling into categories not a good thing, not invested in politics, "I try to stay away from politics too, because it's about money," "if I don't feel like I belong there or I don't feel like I should make that choice I don't, regardless of what other people say or think," "I kind of isolate myself from it even though that may not be the healthiest thing to do," "I'm not too political…I know I should…but it's really

frustrating…really just draining to try and like, figure all that out," "politicians have a lot of influence on the public and most of the time I don't think it's a good influence"

Learning to discuss other sides: may not be as a result of education, but need to work with president because "he's the one that's there," challenging an instructor, becoming friends with a student, appreciating the other side in politics

Having strong emotion/frustration with politics: spending money on the "stupidest" things, "you can't get anything done," "fired up" about politics and religion influencing environmental issues, "cause I feel like it shouldn't be an issue but it is," "is it just a bunch of people arguing?" "I'm not too political…I know I should…but it's really frustrating…really just draining to try and like, figure all that out," "I can't stand politics…all it is, is a big argument between one side and another," "I don't care what side you're on, you're both in the same environment," "I don't know why we can't put it together in the middle and not worry about our sides or our feelings"

Telling you what your opinion is: politics "like religion" in this aspect, religion controlling followers, "I don't need somebody telling me"

Going to new places: Smoky Mountains a particularly significant experience because environment so different than here, not wanting to walk bike path more than a few times a week, increasing place satisfaction, contrasting to old places, "for me they all matter a huge amount – I just like to see new places," "it's like the same thing over and over" (tiny Mission Oaks park that she can walk to), "you can only do so much there," tied to changing over life course, mobility/access: "I want to try something different…if I'm going to spend money, fifteen hours on the road…I want to go every direction and see every thing," comparing management styles state to state

Not liking being indoors: at work: "anything but being inside right now," the activities (video games), staying there a long time**,** "…the outdoors is…everything you can do, right?" mowing "just to be outside," "I will always choose to be outside, just wandering if I can, than to sit inside and stare at the TV or something," "the longer I'm inside, the

more I cannot wait to leave," work, "I don't want to be inside anymore, I'm done with the factory"

Getting a big high: "it was the happiest day of my life" catching big fish in uncle's pond, catching something big makes you want to do it more, summiting the mountain with friends almost a "spiritual experience," "a new spot that I've never hiked is like a rush for me"

Having a spiritual experience that's non-religious: summiting the mountain with friends, being aware of cycles in nature

Being lucky: "that I have the time when I have the time to be out there," "not everybody gets the chance to do what I do," having proximity to park, being outside all day long (generational differences), having own private property, having 2 dogs, "I'm fortunate that we have what we have and that I'm able to go there," "very lucky to have that stuff" when sharing with friends

Education as mind opening: "if they're [growing soybeans] out there, it means we can do it better," increasing appreciation for education, importance of regulations, safety as career, "I was just going to leave it at that, animals everything, and that's not even close to what it is…but that wasn't a bad thing," "taking Entomology…completely changed my outlook on insects," didn't pay attention to current events as a kid, but finding them amazing when studying, "if you didn't have that (regulations), where would we be?"

Having simplicity: "it seems like people that grow up in the city see things as this big network that has to go go go…and complicate everything," "I simplify things in my mind…nature is one of those huge things that made me be like, it'll be all right," simplicity of camping, "it doesn't have to be complicated"

Seeing connections in nature: non-religious spiritual connection of giving thought to natural ways, "the cycles, what you do to preserve it, and use it, sustain it…I believe in that more than I believe in religion per se," education serving to discover connections, "it

all just kind of connects, you know," how atmosphere can affect what's on ground level, what contaminants on the ground can affect atmosphere, time spent outdoors increases appreciation through realization of interconnectedness, "even if you're in the city, everybody's connected," "I think everybody needs…that time out in nature, from a healthy aspect of it"

Having family heritage: "my family's never been the outdoorsy type," coming from outdoors family, motivating to learn a skill, parents were big city people that came down to do a farm

Having displacement difficulty: doesn't feel like home, "Ohio is beautiful in its own way but I have never been able to see it as my home," humidity/water quality affects nature experience, not liking the neighborhood, not safe with shootings/drugs, would like acreage where kids can play, crowded, solicitors

Being calm: "nature's always calmed me down," remembering that places makes you "calm down," being calm

Passing info to others: "I really like doing that and being able to teach people about nature…a lot of people don't realize what's out there", explaining why cleaning litter is important, "what are we showing them?" – her children, idea to have day camp at school's natural resources property, "if you get one, you win," taking kids for a good first fishing experience to get them into it

Existing generational differences: not having technology then, kids wanting video games instead of outside, being outside all day long ("we were lucky"), technology like trail cams, "it was so much more simple," "the ability to do what we did…it costs so much more, that's the hardest thing," walking (to pond to hang out, now always get gator/tractor, nobody walks, "it's too hot," present generation buys and sells gear all the time, influenced by hunting shows, commercials, Facebook marketplace, "we never had the opportunity for that"

Technology influencing: tech is what has driven the price up on things, "you can't teach that (not having technology) to kids…they don't understand that cause it's technology," see: existing generational differences, changing teen years

Appendix C: Emergent Concepts

Concepts generated from codes are designated in bold/underline. Codes used to produce concepts are grouped with that concept.

Feelings about place
Having displacement difficulty
Being nonnative
Being rural
Creating a place
Diminishing places
Going to new places

Early life experiences
Having access
Being gone/having freedom
Having unstructured time
Parents encouraging

Life changes
Changing teen years
Changing over life

Family ties
Bonding experience with parent
Going outside with family
Having family heritage

Educational effects
Education as mind opening
Education as increasing knowledge
Class activities as beneficial
Education affecting behavior
Education as recognizing error
Learning to discuss other sides

Experiencing the outdoors
Passing information to others
Being calm
Having simplicity
Getting a big high
Going to new places
Tuning in
Having peace and quiet
Talking
Overcoming a challenge
Doing something outside for vacation
Seeing the unexpected
Getting away from everything
Experiencing nature as therapy
Having a non-religious spiritual experience

Feelings about nature
Getting a big high
Taking for granted
Having good feelings
Having appreciation
Diminishing places
Not liking being indoors
Seeing connections in nature

Property ownership
Place as work/responsibility
Caring about/for property

Influences of religion and politics
Religion having influence
Politics having influence
Having no middle ground in politics
Striking balance between humans and nature
Being unattached to political parties
Having strong emotion/frustration with politics
Telling you what your opinion is

Circumstantial effects
Having access
Having urban access
Being lucky
Existing generational differences