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Yesterday's conservationists: how were they educated about the outdoors and the environment?

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ABSTRACT

The purpose of this study was to investigate the effects of early-life educational experiences on the development of environmental attitudes among historical conservation individuals. Five key individuals who were active in conservation and environmental issues were identified in this study. Specifically, the goal was to discover what caused conservation and environmental ideals and behaviors among the historical figures chosen for this study. The factors found to be consistent in influencing the environmental attitudes of historical environmental/conservation scholars are interaction with nature (alone or with friends), family and education (reading).

KEYWORDS

Early-life outdoor experience; environmental attitudes; conservation

Introduction

The early life of an individual can often be viewed as a time of exploration, discovery, learning and play. For many, the outdoors is a favorite location for educational activities and offers open space, natural beauty and availability of the unknown that is often very alluring to both children and adults. However, the question remains as to whether environmental education, through spending time in the outdoors or the classroom, develops a sensitivity and appreciation for the natural environment. The objective of this study is to discover whether there are common characteristics of early-life educational experiences in individuals who developed a desire to protect and conserve the natural environment.

Background

Several authors have found that these early-life experiences have indeed played a significant role in the development of eco-centric (value nature for its own sake) values among conservationists (Bixler, Floyd, & Hammitt, 2002; Chawla, 1998; Corcoran, 1999; Palmer, 1993; Peterson & Hungerford, 1981; Tanner, 1980). While much of the research has dealt with the impact of specific educational programs, 'it seems likely that most environmental attitudes are formed as a result of life experiences rather than any specific program that was designed to change attitudes' (Newhouse, 1990, p. 28). For example, Bixler (1997) found that a great deal of recreational activities are learned during childhood, including hunting and fishing, and may be the result of family activities or unsupervised exploration, which is common in childhood.

Notable among the authors who examined outdoor experiences are Tanner (1980) and Palmer (1993). Based on Palmer's premise from the early 1970s that children must 'first come to know and love the natural world before they can become concerned with its care' (cited in Palmer, 1993, p.

26), Tanner reported the significance of life experiences among informed conservationists in the United States. Tanner (1980) asked these activists to describe early-life experiences which were significant in helping them develop their current interest in protecting natural resources. He defined this outdoor variable as having an interaction with rural, natural or other fairly pristine habitats. Results concluded that outdoor interaction was a prominent factor, since it was mentioned by 35 respondents and implied by nine others. Additional responses included experiences in the outdoor alone and with family, environmental education and negative experiences such as the loss of significant outdoor recreation places.

Likewise, Palmer (1993) examined the 'significance of various categories of influence on the development of environmental educators' knowledge and concern and the ways in which this significance may change through time' (p. 26). Palmer received responses mentioning the importance of early-life outdoor experiences such as walking, camping, sailing, watching wildlife, gardening, farming and family adventures in the outdoors, as well as being part of organizations during an individual's early life such as scouts. The outdoor variable was the single most influential category in the development of their interest for 29% of the respondents. Also mentioned in the responses was education, which includes higher education and school courses. Some educators reported school programs having no effect while others described significant effect from educational programs. Palmer (1993) concluded that the research conducted supported the premise put forth by Tanner (1980) that the outdoors is the single most influential factor in developing concern for the environment.

Several other studies have confirmed the findings of Tanner (1980) and Palmer (1993). Corcoran (1999) performed an investigation examining formative influences in the lives of US environmental educators and found that the overall most important influence was early family-related experiences in the outdoors (mentioned by 70%) and educational media (62%). More recently, Bixler et al. (2002) looked at the association between childhood play experiences in wild environments and later environmental preferences in the domains of work, leisure and school. They found a positive relationship between having played in wild environments and more positive perceptions of natural environments; but found no association between participating in these types of play activities and preference for environmental sciences programs at school. In addition, lacking in research with regards to the influence of the early-life outdoor experience, according to Chawla (1998), are comparative studies between those who are pro-environmental and those who are indifferent or even antagonistic towards the environment. In other words, did those individuals (in this case historical figures) who had developed an eco-centric view towards the environment have different or increased early-life experiences in the outdoors?

These studies combined show a consistency in the variables that were determined to be influential in the development of environmental awareness in adults. The main variables in the impact on individuals developing sensitivity to the environment appear to be early-life experiences in nature, the influence of family and experiences with family in the outdoors, environmental education and membership in early-life organizations. Specifically, environmental sensitivity is 'the first major variable in what is hypothesized to be a linear sequence from entry to ownership to empowerment' concerning the protection of the environment (Chawla, 1998, p. 11).

Methods

Overview of data collection

A qualitative research paradigm was employed in this study. Specifically, interpretive research methods were used to understand the phenomena of the impact of early life outdoor experiences as generated by the writings and influence of key historical figures. Therefore, historical research, based on written descriptions by participants and historians, is utilized to arrive at understandings and interpretations of the early life outdoor experiences of key historical figures in the

environmental and conservation movement. Furthermore, the foundation of this study originates from the interpretations of current leisure and recreation scholars. Specifically, the critiques and voice of the participants in this investigation helped in identifying and understanding key historical figures with regard to the environment.

Identification of historical figures

The Delphi technique was used to elicit and refine group judgments about historical figures that demonstrated activism in the conservation or environmental movements. The Delphi tool, given in three rounds, with each round asking the participant to rank historical individuals and rationalize their ranking, was distributed to seven Research I University faculty members. Each member read the ranking and rationalizations of the other members (names withheld) before the second and third rounds, which facilitated idea sharing. After the third round, the result of this collaborative process was a list of the top-five environmental and conservation historical figures. The seven members of the Delphi team were chosen based on their involvement in conservation and the environment through research and course instruction. Five scholars had previous research, teaching and service (presenters, reviewers, editors) in the field of recreation/outdoor and two faculty members had experience in teaching within the field of biology/conservation. All seven faculty members had experience, whether teaching or research, within the conservation and/or environmental areas.

A set of criteria was developed to determine the historical figures who exemplified commitment and activism in the environmental/conservation movement (Clepper, 1971; Squire, 1974). The 'experts' were asked to identify the five most significant historical figures: whose personal activities and career contributed in a distinctive way to the preservation or wise use of one or more resources; who went above and beyond rendering a long and faithful service or appointment to a high position; and who, through personal achievement and/or writings, made significant strides in the promotion of conservation or environmental preservation in the United States. A five-point Likert scale was provided for each individual identified by the panel of experts, and jurors were asked to rate each individual. The Likert scale ranged from 'should not be in the top five (1)' to 'definitely in the top five conservationists in history (5)'. The resulting five historical figures were examined for similarities and differences in their early-life outdoor experience. Documents and archival records for historical conservation figures were examined. Information obtained provided an indication of the childhood outdoor experiences of each individual, including how time was spent in the outdoors, family influences, media (reading), education received and the environment in which the individual was raised.

Results

Analysis of historical figures

The final ranking (in order of importance) for the most influential conservationist/environmentalist in American History was: John Muir, Aldo Leopold, Rachel Carson, Theodore Roosevelt and Henry David Thoreau. The key categories in which the data were grouped for this historical review are: early-life residence; family; early-life outdoor experiences alone and with friends; media; and education.

John Muir (1838–1914) was born in Dunbar, Scotland and at the age of 11 moved to an 80-acre parcel in the Wisconsin frontier in 1849. Muir's childhood home provided him with opportunities to explore nature along the North Sea, including the ruins of an old castle, the shore, fields and orchards (Stetson, 1994; Teale, 1954). During his teen and early adult years, Muir had the Wisconsin frontier at his disposal to explore and discover nature (Clarke, 1980; Wellman, 1987). Muir would later go on to suggest that his passion for nature derived from an inherited wildness in the blood, perhaps starting with the 'cry of a sea gull' (Worster, 2008).

Aldo Leopold (1886–1948) was born in Burlington, Iowa. This community, found near the Mississippi river and wooded areas, afforded Leopold with opportunities to become acquainted with nature at an early age (Ibrahim & Cordes, 1993). Like Muir's early years, Leopold's family residence was located within the city limits although the possibility for adventures was not far away. Outside the city limits, Leopold was able to take advantage of the wildness located along the bluffs overlooking the river, the riverbanks and the nearby woods.

Rachel Carson (1907–1964) was born in Springdale, Pennsylvania located 15 miles northeast of Pittsburgh (Brooks, 1972; Henriksson, 1991). The family residence was located on 65 acres of wooded hills and pastureland. Although not a farm, the homestead contained a variety of farm animals and provided Carson with fields and orchards to explore.

Theodore Roosevelt (1858–1919), born in New York City, spent his early-life winters in New York and his summers on vacations and at the family summer home in Oyster Bay, Maine (Lear, 1997). Roosevelt disliked the city and loved the countryside and was always eager to get to the country (Roosevelt, 1913). In addition, Roosevelt would take advantage of walks on Long Island, the docks, shores and through the woods in and around the Oyster Bay community, exploring and learning about nature.

Henry David Thoreau (1817–1862) was born in Concord, Massachusetts. Thoreau's family moved several times during his early years, returning to Concord in 1823 (Van Doren Stern, 1972). Concord is located 20 miles northwest of Boston on plains near the Assabet and Sudbury rivers, which form the Concord River. Concord was a beautiful setting surrounded by woodlands and meadows and was primarily rural, providing Thoreau the opportunity to explore and interact with nature (Harding, 1982; Salt, 1993).

Except for Roosevelt, each of the historical figures grew up in modestly sized communities with easy access to water and natural areas. In Roosevelt's case, this access was afforded during summer adventures and at the summer home in Oyster Bay. For Muir, his early life was spent in a larger community but, as mentioned earlier, he moved to a rural area at the age of 11. Family was also found to be influential to the development of conservational and environmental attitudes among these key historical figures.

Family

Muir cited his grandfather who lived across the street in Dunbar as having the largest impact on his environmental views. Muir notes that as early as the age of three he went on walks with his grandfather to such places as Lord Lauderdale's Garden where they ate figs and apples and through hayfields where Muir made wonderful discoveries concerning nature (Clarke, 1980; Wellman, 1987). Specifically, his grandfather is credited with teaching Muir to use his eyes and ears to read the world around him (Clarke, 1980). As a boy, Muir noted that he 'was fond of everything that was wild' and spent his life growing 'fonder and fonder of wild places and wild creatures' (Worster, 2008, p. 13). Leopold also found family to be influential.

Leopold's main influence in his life was family, particularly his father (Rogers & Ford, 1989). Leopold's father set an example of sportsmanship, desiring 'to develop in his children a sense of wonder and respect for the land' (Meine, 1988, p. 185). For example, despite there being no laws concerning hunting, Leopold's father taught his children not to hunt waterfowl during nesting season because of a decline in the number of waterfowl in the area (Ibrahim & Cordes, 1993). Another way in which the family influenced Leopold was the six-week vacations they would take every summer to Les Cheneaux club on Marquette Island at the far northern edge of Lake Huron (Meine, 1988). For young Leopold, the island was seen as the perfect size for exploration and discovery (six miles by four miles), allowing him to spend his vacations interacting with nature, camping, sailing, swimming and fishing.

Like Leopold, Carson was greatly influenced by her family, particularly her mother. Carson stated 'she owed her love of nature to her mother who taught her as a tiny child the joy of the outdoors and the lore of Birds, insects, and residents of the streams and ponds' (Ibrahim & Cordes, 1993, p.

38). Carson's earliest recollections (starting at age one) were going for walks with her mother through the woods and orchards exploring springs and naming flowers, birds and insects (Lear, 1997). Her mother regularly taught Carson and the other children about natural history, botany and birds as well as talking to them about the ugliness and scarring of the land as a result of industry (Gartner, 1983; Henricksson, 1991; McCay, 1993).

Unlike Muir, Leopold and Carson, Roosevelt came from an affluent family because his father was a successful merchant. Roosevelt referred to his father as 'the best man I ever knew' (1913, p. 8). The activities and involvement of his father strongly influenced Roosevelt, who had fond memories of time spent on long drives into the country (Lewis, 1919; Roosevelt, 1913). Brinkley (2009) notes the delight and encouragement Theodore brought his mother through his fascination with birds and the collection of flowers. Like Leopold, family travels played an important role in the development of Roosevelt's interests (Burton, 1972). Through travels into England (1969), Europe (1969), the Middle East (1972–1973) and Germany (1972–1973), Roosevelt spent his free time visiting Natural History Museums, hunting, collecting a great variety of insect and wildlife specimens, exploring ruins and wild areas, and enjoying a variety of scenic views (Brinkley, 2009; Burton, 1972; Lewis, 1919; Pringle, 1931). Roosevelt loved finding rare and wonderful specimens and later gave these specimens to the Smithsonian Institute (Roosevelt, 1913).

Similar to Leopold and Carson, Thoreau was greatly influenced by his immediate family. Thoreau—who was seen as a product of Concord woods and Concord culture and revealed, as well, the ancestral traits of two distinct and remarkable families—felt indebted to his father for a calm, sane and industrious temperament and to his mother for a passionate love for nature (Salt, 1993). Thoreau recalled a mother who drew her children's attention to bird calls and took them on walks in the outdoors surrounding Concord (Salt, 1993).

The role of family was very important for each historical figure and each figure experienced a great amount of support from at least one parent or grandparent. Values about the environment are learned from family members either through examples of pro-environmental behaviors or from explicit teaching (Chawla, 1998). Consistently, these figures experienced spending time with at least one family member on walks in nature, received familial support for their interests in nature from a family member and, in the case of Leopold, Carson and Thoreau, witnessed parental examples of how to treat and respect nature and wildlife. For Leopold, the family was seen as the most significant reason for his eventual interest in nature. Thoreau and Carson both commented on the importance of their mother's influence, and Roosevelt was greatly influenced by his father. In addition, the impact of family vacations was prominent for Leopold and Roosevelt. The location that these figures grew up in and their family's choice of this location and/or ability to travel certainly influenced the opportunity each of these individuals had to spend time exploring nature either alone or with friends.

Childhood experiences

Early-life recollections for Muir involve playing in the ruins of Dunbar Castle and spending time exploring the shore of Scotland with his playmates. Muir also spent any time available wandering the fields to hear birds sing, searching the shore for shells, sea-weeds, eels and crabs in the pools along the rocks, climbing trees, scaling garden walls and eating apples (Teale, 1954). Early in his life, birds became a fascination for Muir as he and his playmates hunted nests, captured chicks (raising them) and played games such as seeing who could keep their eyes focused on a lark the longest. As mentioned previously, when Muir was aged 11 the family moved to the frontier of Wisconsin. With his brother, leisure time was spent observing wild creatures and exploring the surrounding areas. For example, early-life activities for Muir and his brother included watching fireflies, watching their cat hunt squirrel, chipmunk and rabbits for her young, and discovering the world in their glacial lake.

Leopold, like Muir, was close to his brother and other siblings and spent a great deal of time with them and alone in the surrounding countryside. Leopold's acquaintance with nature and

wildlife began among the bluffs and bottomlands of the Mississippi river, exploring the bluffs and riverbank below, setting traps, skinny dipping, skating on the river in the winter, playing in the snow in the winter and boating on the river in the summer (Meine, 1988; Nash, 1982; Rogers & Ford, 1989). Leopold even scheduled his own school classes in the afternoon so he could roam 'the countryside on a daily basis, collecting information on everything that lived in the area' (Rogers & Ford, 1989, p. 186). At age 11, Leopold wrote an essay on his study of birds, making reference to over 100 wrens that had hatched in his backyard over the previous years. In addition to exploring and writing, Leopold started hunting around the age of 12, well versed in his father's hunting methods. Therefore, early in his life, Leopold could not be considered a preservationist because he cheerfully shot hawks, crows, squirrels and any bird or animal that bothered his favorite bird, the wren (Meine, 1988). While Muir spent time exploring with his brother and Leopold spent time exploring with his friends, Carson was different.

Carson, seen as a solitary child, spent a great deal of time in the woods and streams of the Allegheny River learning about the insects, birds and flowers she would discover (Brooks, 1972; Henricksson, 1991; McCay, 1993). Carson mentioned that she always remembered being interested in the outdoors and enjoyed being alone to think about her many discoveries (Henricksson, 1991; Sterling, 1970). This would continue during her teen years when she immersed herself in books, worked with the farm animals, played with her many dogs and continued to discover the outdoors (Lear, 1997).

In addition to his explorations on his family travels (mentioned earlier), Roosevelt roamed Long Island, Oyster Bay and the Sound, collecting birds and animals, studying their habits, and skinning and stuffing them himself (Lewis, 1919). Roosevelt found that being a naturalist did not require brawn or muscle (he was a sickly child) and focused his attention on those pursuits as opposed to playing games with neighborhood children. He spent a great deal of time identifying and recording notes about various animals and found the outdoor adventures made him stronger and harder (Lewis, 1919; Pringle, 1931).

Thoreau, like Carson, enjoyed spending time alone in the outdoors and had a strong educational basis for his exploration. Thoreau shared his mother's love for the outdoors, developing a love for fishing, hunting and spending time alone in nature (Ibrahim & Cordes, 1993). Different from other children, Thoreau did not enjoy typical games and sports with other children, but rather stood and watched these activities. For Thoreau, the spectacle of nature had the greatest influence in his life and he considered nature to be his classroom (Harding, 1982; Sanborn, 1917). Thoreau welcomed opportunities to stay home from school and pick huckleberries, explore and learn from nature (Van Doren Stern, 1972). In addition, Thoreau loved visiting Walden Pond, which he first visited at age four, boating and bathing in the Concord River, and spending time in the 'wildest and most solitary recesses of wood and river' (Salt, 1993, p. 6). His love for water caused him in 1833 to build a rowboat called 'The Rover' in which he explored the ponds and rivers of Concord and spent hours relaxing on Walden Pond (Harding, 1982). While at Harvard, Thoreau's love for the woods and lakes around Concord did not diminish, as he reflected: 'my spirit yearned for the sympathy of my old and almost forgotten friend, nature' (Salt, 1993, p. 12).

Interaction in the outdoors was a very important aspect of each of the five historical figures examined. All shared a love of exploration, discovery and the identification of wildlife. Specifically, each had a love and interest in birds. For Leopold, Carson, Roosevelt and Thoreau these interests led to keeping records and journals of their discoveries. While each of the figures had friends, time in the wilds alone or with siblings was primary to all of them. Muir, specifically, spent the majority of his free time with his brother while in Wisconsin. For the others, spending time alone was the favored mode of interaction with nature. With the exception of Carson and somewhat Thoreau, each of the individuals was also interested in hunting during their early life. The benefits of experience cannot be downplayed, as Orr (1992) noted: 'Ecological literacy is becoming more difficult (today), ... not because there are fewer books about nature, but because there is less opportunity for the direct experience of it' (pp. 88–89). Our historical figures not only had the experience of the outdoors, but the valuable impact of books on the topic of nature.

Education

Along with time spent in the outdoors and family influences Muir was impacted through readings on environmental issues. While in Dunbar, Muir was introduced to Audubon, required as a supplemental reading in school. Audubon piqued young Muir's interests and encouraged his dreams of American birds through the use of dramatic illustrations. In Wisconsin, books continued to enlarge Muir's world and he would often read from shortly after midnight to dawn since his father prohibited him from reading secular books, especially after family worship in the evenings (Wellman, 1987; Wilkins, 1995). Muir especially enjoyed reading travel accounts such as Park's *Travels in the Interior of Africa*, which he would read to his mother (Wilkins, 1995).

More expansive than Muir, reading reflected Leopold's heritage and interests as he enjoyed German literature, philosophy (from his father), poetry (from his mother) and outdoor stories (Meine, 1988). His preference was outdoor stories, such as the adventures of Hiawatha and Daniel Boone, the features of *Outing Magazine* and later the writings of Thoreau, Jack London, Stewart Edward White and Earnest Thompson Seton. His love of reading grew while in school in Lawrenceville with its well-stocked library. While away at school he read such works as Darwin's *A Naturalist's Voyage Around the World*.

Similar to Leopold, Carson had a passionate love for books, which was encouraged by regular family trips to the library in Pittsburgh (Brooks, 1972; Henricksson, 1991; Lear, 1997; Sterling, 1970). Carson fell in love with the 'animal stories of Beatrix Potter and the picture books that her mother would read to her' (Henricksson, 1991, p. 21). Potter was Carson's favorite primarily because this author mirrored her own feelings about the fields and woods and the small creatures that were a part of the environment. Carson also enjoyed the books by Gene Stratton Porter, an apostle of the nature study movement, primarily due to his views on the study of wildlife as a source of moral virtue. Carson's romantic view of nature was also encouraged by several children's magazines, of which her favorite was *St. Nicholas Magazine*.

Like Carson, Roosevelt absorbed himself into books as a child, developing an intense power of concentration (Brinkley, 2009; Lewis, 1919; Pringle, 1931; Roosevelt, 1913). Roosevelt himself noted the importance of early reading in his life and remembers spending hours poring over his favorite novels. Roosevelt loved books on natural history such as those by Mayne Reid, growing especially fond of the illustrations. By the age of 14, Roosevelt owned several books on natural history having been provided many of them by his parents. In addition to books, Roosevelt loved the magazine *Our Young Folks*, which attempted to inculcate useful aspects of the Christian moral code. For Roosevelt, his education was exemplified through his determination to learn about every fast fluttering bird in New York and the nesting habits of every mammal in Central Park (Brinkley, 2009).

Thoreau, like the other individuals researched, read widely, especially while at Harvard where he would check out book after book from the library (Van Doren Stern, 1972). Out of these books, Thoreau copied many passages, developing thousands of pages in his notebook (journal). He later included many of these passages in his writings.

Reading was a significant influence on the environmental attitudes of all five historical figures. Each mentioned the enjoyment and knowledge they received from books. Of common interests were books on wildlife, nature and the outdoors. Except for Muir, all had access to a number of books through the availability of a library (at some point in their lives) or were presented with books by their parents.

In addition to education through reading, our historical figures were also influenced by education through the classroom—except for Muir, as his classroom was the outdoors. For Muir, there is very little written about his formal education except that he hated school (Clarke, 1980). Education, for Muir, instead came both from reading and from his adventures in the benign wilderness, mentioned earlier.

In 1904, shortly before his 17th birthday, Leopold went Lawrenceville to attend school. Leopold's mother had wanted him to attend high school in the east but he instead attended locally for the first couple of years. At Lawrenceville, Leopold took advantage of the library and the

lectures, recalling in one such lecture an influential phrase given by a full-blooded Native American: 'nature is the gate to the Great Mystery' (Meine, 1988, p. 35). What Lawrenceville provided Leopold was the opportunity to apply his naturalist talents beyond his home territory, develop a deeper interest in botany and fine-tune his writing skills (Meine, 1988).

Carson loved grammar school, learning to read and write early. However, the years of grammar school were marked with extensive absences when she was instructed at home. Fortunately, Carson also enjoyed being taught by her mother at home and enjoyed the freedom it would provide to read (McCay, 1993; Sterling, 1970). The result of her early development of these skills would be an early career as a writer, exemplified by winning a writing award by the age of 11 (Brooks, 1972; Henricksson, 1991; Lear, 1997). Stories written by Carson included 'A Battle in the Clouds' (story about World War I), 'This Little Brown House' (wrens looking for a home) and 'A Sleeping Rabbit' (with illustrations of animals). Many of her stories would be influenced by her mother and her love of nature and would earn her respect from teachers for her writing abilities as well as earn her a scholarship from Pennsylvania College For Women in Pittsburgh (Henricksson, 1991).

Because of health problems, Roosevelt received his instructions from tutors, one of whom was Mr Arthur Cutler, founder of Cutler School (Lewis, 1919). Roosevelt did not mind being tutored, because, as with Carson, it provided him the opportunity to read and develop his mind according to his own inclinations, namely natural history.

As with the other historical figures, education was very important to Thoreau's mother. At age 11, Thoreau enrolled in Concord Academy, which was a preparatory school (Harding, 1982). The curriculum at Concord Academy emphasized the classics and provided Thoreau with the opportunities to participate in recitations of the classics and in a debating society. This classical education continued at Harvard, although Van Doren Stern (1972) noted the curriculum was not as effective as the availability of reading a variety of texts in the Harvard library. As already mentioned, Thoreau viewed all formal education as secondary to the classroom of the woods and fields (Van Doren Stern, 1972).

Overall, formal education was not a highly significant part of the historical figures researched. Education through the natural environment was a more influential classroom. For Carson and Roosevelt, formal education was primarily in the form of being tutored affording them the possibility to read materials that drew their interests, namely outdoors and nature.

Discussion

The findings of this investigation suggest that action and experience in one's formative years have an influence on what belief systems are adopted. In examining a select group of historical figures, early-life outdoor experiences had an effect on the formation of environmental and conservational views. Similar to findings in recent research, select historical figures were affected by early-life outdoor activities (both individual and social), outdoor education and research on issues related to the outdoors (e.g., Bixler, 1997; Bixler et al., 2002; Corcoran, 1999; Ewert, Place, & Sibthorp, 2005; Palmer, 1993; Peterson & Hungerford, 1981; Sward, 1999; Tanner, 1980).

One consistent finding in this study is the influence that spending time in the outdoors, whether alone or with others, education (whether classroom or through reading) and 'place attachment' have on the development of environmental attitudes. This is consistent with the findings of Ewert et al. (2005), who suggested that time spent alone or with others ('hands on' education) in the natural environment has a connection to the formation of values. This value may be in terms of preconditioning the child towards a desire to protect and value those types of environments that they experienced as a child because of the desire they have to experience the same environment as an adult (Bixler et al., 2002). For example, Szagun and Pavlov (1995) suggested that early-life experiences provide a reference from which individuals may draw as they develop their knowledge of and values of the environment. It is important to also note the formation of values from spending time with families in

the outdoors, where children may adopt the same values as their parent(s) towards the environment. This could also be said of organizations a child may have belonged to, such as those that involve the children in outdoor activities (i.e. boy scouts/girl scouts).

In addition to childhood experiences, education is vital in the formation of environmental attitudes. Education can come in many forms including experience, friends, family, classroom and media (reading), as detailed by the historical accounts of early environmentalists. Villacorta, Koestner, and Lokes (2003) noted the importance that parents and peers can play in the formation of environmental attitudes. Parents can play a large role in the child's development beginning with selecting family vacations and including environmental discourse during recreational activities. For example, a study by Ewert et al. (2005) found that appreciative recreational activities played a greater role than mechanized recreational activities. As with family, peers and media can also play an important role in the formation of these values. For example, Arnett (2000) found that college students were affected both by their peers and by media (higher exposure to threats to the natural environment in the media). Whether the education takes place through media or the classroom, another factor relevant to the process is the concept of place attachment.

Certain locations often cause a greater emotional, reflective or spiritual connection to people than other locations (Brandenburg & Carroll, 1995; Cuba & Hummon, 1993; Ewert et al., 2005; Williams & Patterson, 1999). The experience a child has in the outdoors early in life can greatly be affected by the specific natural environment in which the experience takes place. Therefore, a loss of that place, such as due to development, can bring about an emotional response, increasing their view towards the environment and a desire to preserve certain areas for future enjoyment. While the historical figures did not live long enough to see their favorite outdoor 'places' developed, we do see from history the importance of the attachment they had with those areas. Leopold noted the value in preserving the integrity, stability and beauty of the biotic community—a respect for fellow members and the biotic community (Orr, 1992).

The limitations of this study include the number of 'experts' used in the Delphi technique and the number of individuals chosen for the historical analysis. Although a small number of scholars was selected for this current investigation, this study provides a strong foundation for a neglected area of research on the relationship between the effects of early-life educational experiences and the development of environmental attitudes. Additionally, this study does provide a basis for future research involving other historical figures, especially from other countries. More investigations could include the examination of contemporary individuals to provide an analysis that would be more consistent with modern educational methods. Therefore, a comparison could be drawn between various types of educational methodology and the impact of those methods on the formation of environmental attitudes. This is especially valid because today's educational methodology features less and less 'hands on' experiences in the outdoors because of financial and time constraints.

Another important limitation to discuss is the use of significant life experiences in the formation of environmental knowledge and behavior. There has been recent criticism regarding the use of significant life experiences as it has a disproportionate focus on privileged groups and positive experiences (Ceaser, 2015). Recent research involving significant life experience has also suggested positive association of pro-environmental behaviors to student/teacher ratios, income levels, participation in non-formal indoor educational courses, loss of beloved natural places and fear of pollution, in addition to personal (inner self) values and principles (Eilam & Trop, 2014; Hsu, 2009; Stevenson et al., 2014). As indicated previously, a comparison of individuals who have similar experiences while growing up yet develop differing views of the environment needs further examination (Ewert et al., 2005).

Conclusions

This research began by asking whether there were common characteristics of early-life educational experiences of influential historical figures who developed a desire to protect and conserve the natural environment. Overall, the data gleaned from research would indicate that there are many similarities (see Table 1). Each of the five key historical figures identified by the leisure and

Table 1. Comparison of early-life outdoor experiences of historical figures.

Name	Residence	Family	OE alone	OE friends	Media	Education
Muir	Dunbar shores and Wisconsin Frontier	Father's cruelty to animals	Time would be spent with brother	Explore and discover with brother	Enjoyed reading Audubon	Disliked school
Leopold	City of Burlington, Iowa	Father's example of sportsmanship	Schedule courses to spend time alone in outdoors	Spent time with siblings and friend Edwin	Loved reading outdoor stories	Enjoyed Lawrenceville because of surrounding areas
Carson	City of Springdale, PA	Mother taught the joy of the outdoors	Great deal of time exploring the farm	With friend would read and hike	Passionate love of books and writing	Won awards for writing abilities
Roosevelt	New York City and Oyster Bay, Maine	Multiple family vacations and trips	Sickly child who loved exploring and collecting specimens	Founded a museum with cousin	Loved books on natural history	Was tutored focusing on natural history
Thoreau	City of Concord, MA	Close to his mother	Stoic and quiet child who loved to explore and discover	Most time outdoors spent alone	Would copy passages from books	Concord Academy and Harvard exposed him to many books

Note: OE, outdoor experiences.

recreation scholars was consistently influenced by interaction with the outdoors ('hands on' education), whether it was through time spent alone, with friends or with family. Save for Muir, who spent his time outdoors with his brother, the other four individuals favored time spent alone. Second, each of the five individuals spent time outdoors exploring, discovering and interacting with nature. Additionally, each had an interest in wildlife, specifically birds. While it is not clear whether Muir recorded his observations in journal form, each of the other individuals kept a journal of his/her discoveries. Third, each of the five individuals was positively affected by at least one family member (Muir was influenced by his grandfather, Carson and Leopold by their mothers, and Roosevelt and Leopold by their fathers). Fourth, research indicates that reading was an influential factor in each of the five individuals' lives. Finally, a lack of formal education was consistent among the individuals. For these historical figures, nature and the wilderness was their primary classroom. The analysis of the data revealed numerous major findings. Interaction with nature (alone or with friends), family and reading were consistent in influencing the environmental attitudes of the historical figures. The influence of family, reading and appreciative early-life outdoor experiences (alone and with friends) can play a role in an individual's development of environmental attitudes. Family was a very important factor in the lives of Leopold, Carson and Thoreau. Reading was a very important factor in the lives of Leopold, Carson, Roosevelt and Thoreau. Appreciative early-life outdoor experiences were instrumental in the development of environmental attitudes in the lives of Muir, Leopold, Carson, Roosevelt and Thoreau. The question remains to be answered regarding how other conservationists/environmentalists developed their environmental views who do not have similar experiences as these historical figures (Ewert et al., 2005). For example, how does one sibling differ from another sibling in their views having grown up in the same environments?

As educators today, it is important to include 'hands on' experience with the outdoors, which will instill environmental values to students. While this is not always possible for a classroom or recreation program, recreational providers must investigate ways to bring the ability to discover and explore to the student. Various forms of media (i.e. radio, television) have also been shown to be effective, especially for our students who learn visually. In addition, these figures placed importance of discovery with friends and family. While not a significant part of today's educational curriculum or recreation programming, the study of the environment and environmental issues has a greater role in those forums during this time or of our historical figures. The information from this study indicates a need to include various outdoor and environment-centered activities in our curriculum and recreational programming to develop environmental leaders in the future. These activities and/or assignments should encourage reading, viewing media and projects (discussion starters and activities) for the student to do alone, with friends and/or with family. We, as educators, can help develop future environmentalists and conservationists both in the classroom and in the recreational setting.

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Notes on contributor

Greg S. Place, after spending 13 years as a practitioner in the non-profit recreation sector, received his PhD from Indiana University in Human Performance (Outdoor Recreation). While a practitioner, Dr Place programmed hundreds of events and led multiple trips (wilderness, service and social) for teens in the Great Lakes, USA area. After serving several years as the Recreation Program Director for Chicago State University, Dr Place is currently on staff at Shepherd University in the Recreation & Sports studies program. Courses taught include Technology, Programming, Outdoor Education and Leadership.

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