

Chapter 8. Natures Connectedness

Please use this citation in referring to this work:

Krasny, Marianne E. 2020. Natures Connectedness: Advancing Environmental Education Outcomes. Cornell University Press. pages 117-126

More information is available about this book at:

<https://www.cornellpress.cornell.edu/book/9781501747076/advancing-environmental-education-practice/>

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NATURE CONNECTEDNESS

Can people experience a personal relationship with the environment analogous to how they experience a relationship with another human being?

(Davis et al. 2009, 173)

Highlights

- Nature connectedness is a feeling of being connected and belonging to the natural community.
- Nature connectedness fosters environmental behaviors through its association with feelings of belonging to the community of nature, of nature being part of our identity, and of happiness.
- Environmental education can foster nature connectedness among children through providing long-term, repeated, sensory experiences in nature, often with family members.

Nature connectedness captures the emotional component of human-nature interactions. Because feelings of unity or communion with nature can lead to empathy for other organisms, nature connectedness is often a precursor of environmental concerns and behaviors (Dutcher et al. 2007).

What Is Nature Connectedness?

If people feel connected to nature, then they will be less likely to harm it, for harming it would in essence be harming their very self.

(Mayer and Frantz 2004, 512)

Nature connectedness can be defined as a feeling of being connected and belonging to the natural community (Mayer and Frantz 2004). Feelings of being connected to nature are rooted in biophilia, or humans' innate "love" of nature (Wilson 1984; Kellert and Wilson 1993), and in Aldo Leopold's notions of the land as a community of "soils, waters, plants, and animals" of which humans are "plain member and citizen" (Leopold 1949).

Whereas we use the term "nature connectedness" in this chapter, a number of related concepts capture humans' ties to nature (table 8.1). Some of these constructs focus solely on the emotional or affective, whereas others also include cognitive components. An example of the former is emotional affinity toward nature, which is distinguished from its cognitive counterpart, interest in nature. Environmental psychologists explain this difference: "One can have scientific interest in nature issues without feeling any emotional affinity. *Interest* motivates gathering knowledge to explain and understand phenomena. *Emotional affinity* is motivating contact and sensual experiences" (Kals et al. 1999, 182, emphasis in original).

Nature relatedness encompasses feelings toward nature as well as cognitive worldviews of nature and experiences in nature. It is defined as "one's appreciation for and understanding of our interconnectedness with all other living things on the earth" (Nisbet et al. 2009, 718). These and related constructs, including inclusion of nature in self (Schultz 2001; Schultz et al. 2004) and commitment to the natural environment, expand on earlier notions of how humans are connected to and depend on each other, to encompass human-nature interconnectedness and dependence (Davis et al. 2009).

Nature connectedness, emotional affinity toward nature, and nature relatedness all focus on human-nature interactions, and in this way can be distinguished from related constructs discussed in this book. For example, sense of place, which includes place attachment and place meaning, captures the social and cultural aspects of our surroundings in addition to natural elements (Stedman 2002; Kudryavtsev et al. 2011; see chapter 9). The cognitive construct systems thinking entails realizing that humans are part of natural systems but lacks the affective component of nature connectedness (Thibodeau et al. 2016; Otto and Pensini 2017; see chapter 6).

Nature connectedness and related concepts are often tied to collective, environmental, or ecological identity (Schultz and Tabanico 2007; Nisbet et al. 2009; Gosling and Williams 2010; Brügger et al. 2011; Tam 2013; see chapter 11). For example, the construct inclusion of nature in self attempts to capture the "extent to which an individual includes nature within his or her cognitive representation of self" (Schultz and Tabanico 2007, 1221), with our representations of self being closely tied to our identities.

TABLE 8.1 Nature connectedness and related constructs

CONCEPT	DEFINITION	COMPONENTS
Connectedness to nature (Mayer and Frantz 2004)	Feeling of being connected and belonging to the natural community	Affective
Emotional affinity toward nature (Kals et al. 1999)	Emotional inclinations toward nature such as love for nature, feelings of freedom and safety in nature, and feeling of oneness with nature	Affective
Nature relatedness (Nisbet et al. 2009)	Appreciation for and understanding of our interconnectedness with all other living things on earth	Affective, cognitive, and experiential
Inclusion of nature in self (Schultz 2001; Schultz et al. 2004)	Extent to which one thinks of oneself as including aspects of nature	Cognitive
Connectivity with nature (Dutcher et al. 2007)	Seeing environment as part of self and self as part of environment, reflects empathy due to unity/ communion between self and nature	Affective
Commitment to the natural environment (Davis et al. 2009)	Psychological attachment to and long-term orientation toward the natural world	Affective
Environmental identity (Clayton 2003)	Belief that the environment is important to us and an important part of who we are	Multidimensional

Why Is Nature Connectedness Important?

When we see land as a community to which we belong, we may begin to use it with love and respect.

(Leopold 1949, viii)

Environmental psychologists have found that nature connectedness predicts environmental behaviors across multiple audiences and contexts.

- Nature connectedness and related constructs (table 8.1) are strong predictors of environmental and nature-protective behaviors among children, college students, and adults (Kals et al. 1999; Nisbet et al. 2009; Cheng and Monroe 2012; Tam 2013; Frantz and Mayer 2014). They are more strongly associated with environmental behaviors relative to other

constructs, including the New Environmental Paradigm (Dunlap and Van Liere 1978, 2008), biospheric values, and environmental knowledge or systems thinking (Finger 1994; Dutcher et al. 2007; Frantz and Mayer 2014; Davis and Stroink 2016; Otto and Pensini 2017).

- Nature connectedness is closely linked to environmental identity (see chapter 11), which exerts strong influences on environmental behaviors (Tam 2013).
- Nature connectedness has multiple health benefits, including being associated with feelings of happiness (Nisbet and Zelenski 2011; Zelenski and Nisbet 2012; Capaldi et al. 2014, see chapter 15). The “happy path to sustainability” (Nisbet and Zelenski 2011) enables environmental educators to “put a more positive spin on ecological behavior than the doom and gloom messages that warn the public to change or die. . . . A positive framing may in the long run provide a more effective means of promoting environmentally friendly behavior” (Mayer and Frantz 2004, 512).

Author Reflections

When I was a child, my parents took my brothers and me hiking along the Billy Goat Trail near Washington, DC. Our family, including my grandfather, hiked and canoed during “summer camp” sponsored by the Appalachian Mountain Club. There an older lady taught me the names of wildflowers. And I remember developing a deep appreciation for nature the summer I hiked from hut to hut with my adopted Austrian family in the Alps. In short, plenty of adults shared their love of nature with me when I was a child.

My college graduation present was a monthlong mountaineering expedition in the Glacier Peak Wilderness of Washington State. For the next three summers, I led similar expeditions for the National Outdoor Leadership School—scaling glaciers, crossing rain-fed torrents, and wandering through alpine meadows (figure 8.1). My connection to nature was profound.

Then I moved to Ithaca, New York. Although many appreciate the gorges, forests, and hilly agricultural landscape, I was not so entranced with this more “cultivated” nature of rural New York State. And yet, over the years—through hiking and canoeing with my own family, and hopefully instilling a feeling of nature connectedness in my children—I have become increasingly connected to this local nature. As I have grown older, my connection has become more individual—emerging through my early morning walks and weekend runs listening to the sound of waterfalls, feeling the calm of a dark woods, and dodging the occasional skunk rooting for worms after a rainfall.



FIGURE 8.1. Author reveling in her connection to nature. Photo by Alex Russ.

How Does Nature Connectedness Foster Environmental Behaviors and Collective Actions?

All ethics so far evolved rest upon a single premise: that the individual is a member of a community of interdependent parts. . . . The land ethic simply enlarges the boundaries of the community to include

soils, waters, plants, and animals, or collectively: the land. . . . A land ethic changes the role of *Homo sapiens* from conqueror of the land-community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such.

(Leopold 1949, 203–204)

Nature connectedness can influence environmental behaviors through two pathways, both of which draw on affect and relationships. The “we-ness” pathway expands our feelings of connectedness to other humans to encompass connectedness to all other beings (Frantz and Mayer 2014). The “happiness” pathway is based on the health and well-being outcomes of spending time in nature (Zelen-ski and Nisbet 2012).

According to the “we-ness” pathway (figure 8.2), as we become closer to other individuals and they become part of how we define ourselves, we demonstrate greater empathy and willingness to help (Cialdini et al. 1997). Similarly, as we

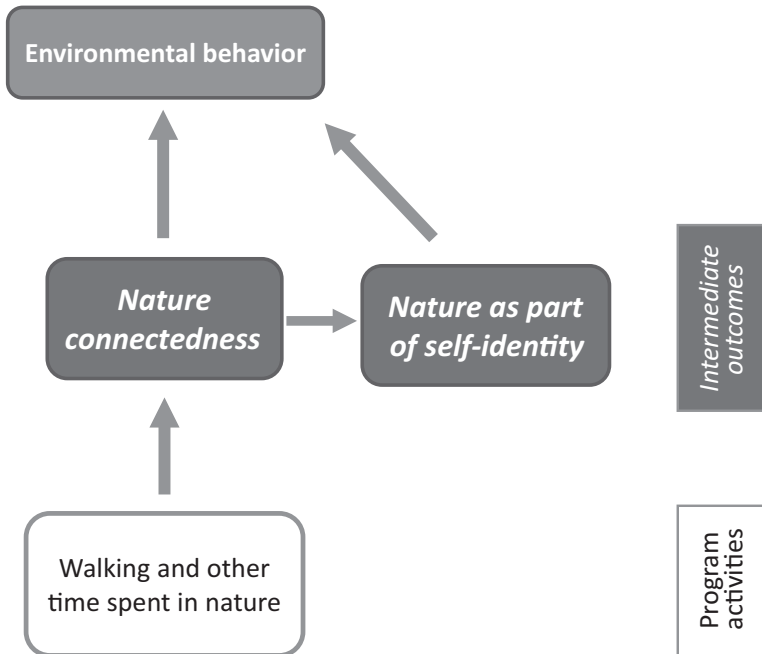


FIGURE 8.2. The “we-ness” pathway to sustainability. People who spend time in nature develop a connection with nature, and nature becomes part of their identity, which leads to environmental behaviors (Frantz and Mayer 2014).

become closer to nature—and nature becomes part of our identity or “self”—we feel more empathy toward, concern about, and willingness to help nature (Schultz 2001; Schultz and Tabanico 2007; Gosling and Williams 2010; Frantz and Mayer 2014). Feelings of belonging to the community of nature, or of nature being part of our identity, play a role because harming nature feels akin to harming ourselves (Beery and Wolf-Watz 2014). The we-ness pathway draws from the work of Aldo Leopold, who rather than drawing a sharp line between humans and nature, spoke about humans as citizens of the “land community” (Leopold 1949). In Leopold’s view, nature is no longer some “other,” for whom we care little and thus can justify taking actions against (similar to how conceiving our presumed enemies as “other” enables violent behaviors). If we feel as if nature is part of our community, or that we are part of the land community, we accept our role in that community, and acting on its behalf becomes acting on our own behalf (Goralnik and Nelson 2011).

The “happiness” pathway builds on social sciences research suggesting that connectedness with family and friends is associated with happiness (figure 8.3). It turns

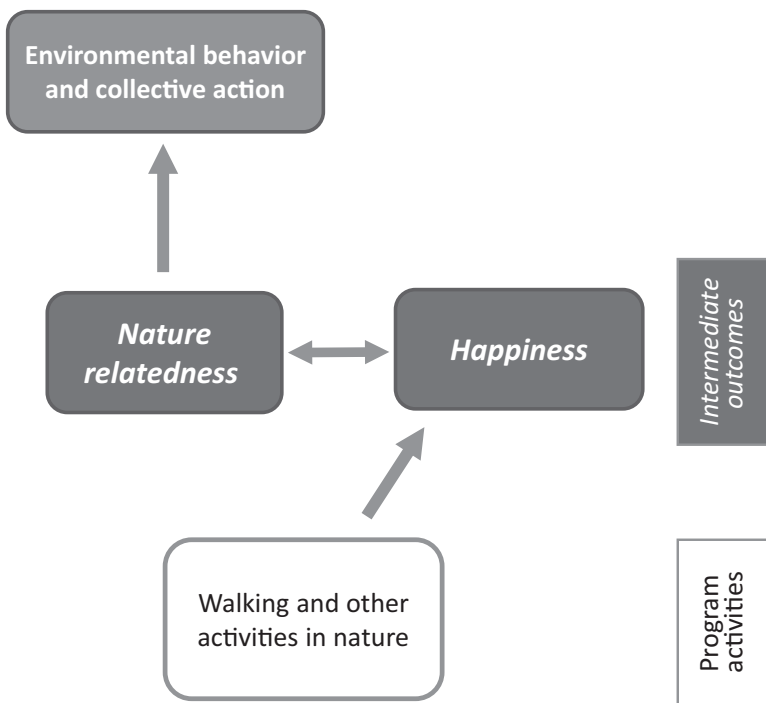


FIGURE 8.3. The “happiness” pathway to sustainability. Time spent in nature spurs happiness and nature relatedness, which makes people more inclined to protect nature (Zelenski and Nisbet 2012).

out that people who feel a sense of nature relatedness also feel happier. In fact, the happiness associated with a sense of nature relatedness might even offset some of the distress that accompanies an awareness of environmental destruction. The link between nature relatedness and happiness also would explain how hedonic and egoistic values—that is, realizing that nature is important to our well-being—could lead to environmental behaviors (Nisbet and Zelenski 2011; Zelenski and Nisbet 2012).

How Can Environmental Education Foster Nature Connectedness?

Environmental educators should focus on three factors in planning programs to connect people with nature: the amount of time program participants will be able to spend in nature, how that time is spent, and participants' age. Longer-term, repeated experiences with close family members are ideal; shorter walks or activities in nature and spending time with friends and teachers have a more limited impact. Sensory activities, such as walking in streams and sitting quietly in the woods, as opposed to purely cognitive activities that focus on learning about nature, have been shown to increase nature connectedness. Finally, younger children up to about age eleven are more likely to develop feelings of nature connectedness relative to older children and adults (Chawla and Cushing 2007; Ernst and Theimer 2011; Cheng and Monroe 2012; Liefänder et al. 2013).

Adults spending time in nature with children can communicate and transfer positive emotions related to the natural environment (Kals et al. 1999; Chawla and Cushing 2007; Nisbet and Zelenski 2011; Otto and Pensini 2017). Further, educators might want to consider using language that suggests participants are protecting themselves, or their “home,” rather than protecting “other” places apart from our real world. For example, educators can lead students who have seen a butterfly in a discussion of feeling a sense of kinship or community, possibly even likening it to kinship we might feel for a friend or family member, as opposed to emphasizing the “otherness” of the butterfly or nature more broadly (Goralnik and Nelson 2011). Educators and parents can also talk about ethics and responsibility related to taking care of nature (Kals et al. 1999).

How Can We Assess Nature Connectedness?

There are as many scales to measure nature connectedness as there are nature-connectedness-related constructs (table 8.1; appendix). Not surprisingly, these

scales measure similar concepts (Brügger et al. 2011; Tam 2013). Here we focus on connectedness to nature (Mayer and Frantz 2004), inclusion of self in nature (Schultz 2001; Schultz et al. 2004), and nature relatedness (Nisbet et al. 2009), including scales that have been adapted for children (Ernst and Theimer 2011; Cheng and Monroe 2012).

The Connectedness to Nature scale is based on Leopold's vision of a sense of kinship with and belongingness to nature. It includes propositions such as "I often feel a sense of oneness with the natural world around me"; "I think of the natural world as a community to which I belong"; and "I recognize and appreciate the intelligence of other living organisms" (Mayer and Frantz 2004).

A connection-to-nature scale designed specifically for children includes statements that reflect children's enjoyment of nature (e.g., "I like to hear different sounds in nature"); empathy for its creatures ("I like to see wild animals living in a clean environment"); sense of oneness ("Humans are part of the natural world"); and sense of responsibility for nature ("My actions will make the natural world different") (Cheng and Monroe 2012). Another approach to assess nature connectedness in children uses descriptions of two young people, one of whom is connected to nature and the other who isn't, and asks children to first choose which of the two people they are most like, and then to rate how much they are like that person. For example, a statement might read, "Some kids like to spend their weekends outside walking in parks, but other kids like to spend their weekend inside" (Musser and Malkus 1994; Ernst and Theimer 2011).

The measure for "inclusion of nature in self" focuses specifically on the degree to which humans include nature in how they represent themselves. Respondents view seven diagrams, each consisting of a circle labeled "self" and a circle labeled "nature." The diagrams vary from complete separation of the two circles to complete overlap, and respondents choose which diagram along the continuum best represents their relationship with the natural world (Schultz 2001). Although diagrams may be easy to use with children, the overlap of nature and self is an abstract concept and has a weaker relationship with environmental behaviors compared to other nature connectedness measures (Brügger et al. 2011).

The "nature relatedness" survey assesses one's personal connection to nature, nature-related worldview, sense of agency concerning human actions and their impacts on nature, and physical familiarity or comfort with being in nature (Nisbet et al. 2009). Questions might need to be adapted for a particular audience; for example, some children or adults might not be familiar with or have access to wilderness areas, yet might enjoy spending time in city parks (Nisbet and Zelenski 2013).

We also can assess nature connectedness by measuring nature-related behaviors (Brügger et al. 2011). For example, respondents might indicate how frequently (from never to very often) they do the following: take time to consciously smell flowers; consciously watch or listen to birds; collect objects from nature such as stones, leaves, or insects; take care of plants at home or school; or take walks regardless of the weather. Respondents can also state their level of agreement with statements that reflect appreciation of nature, such as: the croaking of frogs is comforting; listening to the sounds of nature makes me relax; I enjoy gardening; or my favorite place is in nature.