Assessing Connection to Nature

A Workshop for Practitioners

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Introductions
Workshop Overview

Part One
- Overview of C2N
- Assessing C2N
- Introduction to the Guide

Part Two
- Applications
- Questions
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Connection to Nature
What it Is and Why it Matters
Connection to Nature

“The study of connectedness to nature is primarily concerned with understanding how people identify themselves with the natural environment and the relationships they form with nature.”

(Restall and Conrad, 2015)
Connectedness

• Broad group of related concepts regarding how one thinks about oneself in relationship (identity) and how one conceptualizes one’s relationship with the more-than-human world (affiliation/connection)

• The possible emotional and/or cognitive relationship between the individual and nature that develops from these experiences with non-specific “nature” (non-human nature).

(Beery & Wolf-Watz, 2014)
Related Terms from Across Disciplines

**Environmental Sensitivity**
Affective characteristics resulting in viewing the environment from an empathetic perspective

**Sense of Place**
Place attachment, dependence, and identity

**Inclusion with Nature**
Human-nature relationship with cognitive, affective and behavioral dimensions

**Affinity**
Emotional bonds with and cognitive interest in nature

**Environmental Identity**
Sense of connection... a belief the environment is an important part of who we are

**Nature Relatedness**
Identifying with nature, nature-related worldview and physical connection to it
Other Terms

- Land Ethic
- Enjoyment
- Love and care for nature
- Awe
- Oneness or Kinship
Key Differences Yet a Shared Hypothesis

Spending time in nature will, given repeated experience, help an individual feel connected with nature, more inclined to care about nature, and ultimately protect it.
Significance of Connection to Nature

- Moderately strong relationship between connectedness to nature and eco-friendly actions (Mayer and Frantz, 2004)

- Environmental sensitivity predisposes people to later work toward environmental protection (Hungerford and Volk, 1990)

- Affinity toward nature is a strong predictor of nature-protective behavior (Kals, Schumacher, and Montada, 1999; Müller et al., 2009)

- Affective connection with the natural environment influences engagement with it (Hinds and Sparks, 2008)

- Place identity is significantly related to environmentally responsible behaviors (Vaske and Kobrin, 2001)

- Positive, significant, and moderately sized relationship between connection to nature and pro-environmental behavior (Whitburn, Linklater, Abrahamse, 2019)
An Important Caveat!

- Relationship (Association v. Causation)
- Speculated direction: those who are more strongly connected to nature are more engaged in pro-environmental behavior
Further Relevance of Time in Nature and Connectedness to Nature

- Human health and well-being
- Learning and development
Fostering Connection to Nature

**Time in nature**
- Frequent and sustained
- Current and past
- Age of onset

**Socialization**
- Adults and peers encouraging a positive connection through allowing, appreciating, modeling, co-participating

**Quality/type of experience**
- Experiences that involve free movement, creative agency, risk-taking
- Experiences that lead to feelings of trust, autonomy, and competence
- Experiences that prompt feelings of awe and wonder
- Direct experiences (recreational and/or subsistence) in a specific locale (place)
Nature v. Place?

- Human Geography focuses on the relationship between humans and their surrounding environment.
- Nature encounter should be regarded as an experience situated in a particular place ("places of human affiliation").
- Providing nature encounters may not lead to pro-environmental change; specific places may facilitate and frame interpersonal relationships, social formation, and behavior.

(Beery & Wolf-Watx, 2014)
Sense of Place

Many paths of interplay between places of human affiliation and pro-environmental behavior

(Jorgensen and Stedman, 2001)
Strategy or Outcome?

- Time in nature
- Connectedness to nature
- Conservation/environmental behaviors
Assessing Connection to Nature
Why Assess Connection to Nature?

Assessing C2N could be useful for

- Understanding one’s audience
- Guiding program development
- Evaluating programs
- Securing or justifying funding
- Marketing programs
When Does C2N Assessment Fit?

Planning
- Assessing participants to determine their needs or clarify your strategies
- Measuring baseline
- Providing rationale for resources, facilities, programs, strategies, etc.

Evaluating
- Exploring how a program changes participants’ connection to nature
- Detecting differences between group outcomes
How to Assess C2N?

Definition: Tool or instrument is what you use to collect audience data
Examples: surveys, observations, interviews, drawings, photographs…

- C2N Assessment Tools — at least 26
  - Differing disciplines and philosophical perspectives underlie tools
  - Tools measure slightly (or very) different aspects of C2N
  - Designs for different audiences: adults, youth, young children
  - Considerations: program goal, program intensity, setting, timing
Problem: Tools exist…but not always easy to access or use!

Need:
Practitioner-friendly access to and guidance for using existing tools

- Applicable to a variety of audiences
- Sensitive enough to detect change
- Easy to use and analyze
- Valid in many contexts
Solution

Collaborative work that resulted in the Practitioner Guide!
Introduction to the Practitioner Guide
Considerations as You Start

• Is your program purpose connection to nature (C2N)? Or, is a different outcome (and tool) more appropriate?

• Can you expect to see a change from your program?

• What is the “intensity” of your program?

• What is the age of your program audience?

• Are there cultural contexts, languages, or other audience factors that you should consider and be responsive to?
Introducing the Guide

• Offers 11 tools with Tips:
  • How to select one
  • How to use the tool
  • How to analyze the data

See Chat for link
The Guide’s Table of Contents

8 Tools are surveys & collect quantitative data

3 Tools are observations, journaling, or artwork to collect qualitative data
Decision Tree: Finding the right tool

Quick Tip:
You may want to use a survey if there are a lot of individuals in your program, if you need to report numerical data, or if you have limited time to administer or analyze responses. Other approaches, like journals and photos, can provide rich detail and insights, but will likely involve fewer respondents.

Begin here

What age is your target audience?

Early Childhood (2–5 years old)
Biophilic interview
11-item scale conducted as an interview with young children. Measures attraction to nature, including curiosity and interest. Go to page 13.

Children and Young Adolescents (6–13 years old)
Are you conducting a one-time assessment?

Yes
Children’s Environmental Perceptions Scale (6–13 years)
16-item scale that measures appreciation for nature and concern about nature. Go to page 20.
Inclusion of Nature in Self Scale (7+ years)
16-item scale that measures how an individual thinks about their relationship with nature. Go to page 34.

No
Adolescents (14 years+)

I’m interested in using drawings, and I want to assess change over time.

Early Childhood (2–5 years old)
Nature Relatedness Observations
Approach that uses open-ended observations to understand children’s connection to nature. Go to page 49.

Children, Adolescents, and Adults (6+ years)
Journaling
Approach that uses journal entries to assess connection to nature. Go to page 59.
Interpretation of Drawings
Approach that uses children’s drawings to understand connection to nature.

Are you conducting a one-time assessment?

Yes
Children and Young Adolescents (6–13 years old)
Are your program low, medium, or high intensity?

Is your program low, medium, or high intensity?

Low intensity (Example: a one-day field trip or a short nature program)
Your program may be very useful and impactful, but a short exposure is unlikely to influence connection to nature in a way that can be measured with these tools. Try measuring knowledge or attitudes. (See Appendix B.)

Medium intensity (Example: a weeklong day camp or an engaging after-school program)
Children’s Environmental Perceptions Scale (6–13 years)
16-item scale that measures appreciation for nature and concern about nature. Go to page 20.
Inclusion of Nature in Self Scale (7+ years)
16-item scale that measures how an individual thinks about their relationship with nature. Go to page 34.

High intensity (Example: an immersive 10-day backpacking trip or a yearlong after-school program)
Children’s Environmental Perceptions Scale (6–13 years)
16-item scale that measures appreciation for nature and concern about nature. Go to page 20.
Inclusion of Nature in Self Scale (7+ years)
1-item pictorial scale that measures how an individual thinks about their relationship with nature. Go to page 34.

Low intensity (Example: a one-day field trip or a short workshop)
Your program may be very useful and impactful, but a short exposure is unlikely to influence connection to nature in a way that can be measured with these tools. Try measuring knowledge or attitudes. (See Appendix B.)

Medium intensity (Example: a weeklong nature retreat or an ongoing after-school program)
Inclusion of Nature in Self Scale (7+ years)
1-item pictorial scale that measures how an individual thinks about their relationship with nature. Go to page 34.
Love and Care for Nature Scale
10-item scale that measures emotional connection to nature. Go to page 45.

High intensity (Example: an immersive 10-day backpacking trip or a yearlong training program)
Inclusion of Nature in Self Scale (7+ years)
1-item pictorial scale that measures how an individual thinks about their relationship with nature. Go to page 34.
Love and Care for Nature Scale
10-item scale that measures emotional connection to nature. Go to page 45.
Environmental Identity Scale
11-item scale that measures how an individual’s connection to nature relates to their personal identity. Go to page 30.
Nature Relatedness Scale
14-item scale that measures how people relate to the natural world through their beliefs, attitudes, and physical connections. Go to page 46.
Connectedness to Nature Scale (Children’s Version) (10+ years)
10-item scale that measures a child’s feelings about nature connection. Go to page 23.
QUESTION 1:
Do you want to use a survey?
QUESTION 2: What age is your target group?
QUESTION 2:
What age is your target group?

- Early Childhood (2–5 years old)
  - Biophilia Interview
  11-item scale conducted as an interview with young children. Measures attraction to nature, including curiosity and interest. Go to page 13.
- Children and Young Adolescents (6–13 years old)
- Adolescents and Adults (14 years+)
QUESTION 3: Are you conducting a one-time assessment?

All of the tools in this guide can be used to measure a person’s baseline connection to nature. We recommend that you read about the tools identified in bold type to find one that’s right for your audience.

Yes

Are you conducting a one-time assessment?

No

I want to assess change over time.
QUESTION 4: What is your program’s intensity?

Intensity is a function of time (duration and frequency) and engagement. Engagement can vary with novelty and attention.

<table>
<thead>
<tr>
<th>Low intensity</th>
<th>Medium intensity</th>
<th>High intensity</th>
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</thead>
<tbody>
<tr>
<td>(Example: a one-day field trip or a short nature program)</td>
<td>(Example: a weeklong day camp or an ongoing after-school program)</td>
<td>(Example: an immersive 10-day backpacking trip or a yearlong after-school program)</td>
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Your program may be very useful and impactful, but a short exposure is unlikely to influence connection to nature in a way that can be measured with these tools. Try measuring knowledge or attitudes. (See Appendix B.)

Children’s Environmental Perceptions Scale (6–13 years)
16-item scale that measures appreciation for nature and concern about nature. Go to page 20.

Inclusion of Nature in Self Scale (7+ years)
1-item pictorial scale that measures how an individual thinks about their relationship with nature. Go to page 34.

Children’s Environmental Perceptions Scale (6–13 years)
16-item scale that measures appreciation for nature and concern about nature. Go to page 20.

Inclusion of Nature in Self Scale (7+ years)
1-item pictorial scale that measures how an individual thinks about their relationship with nature. Go to page 34.

Nature Relatedness Scale
6-item scale that measures how people relate to the natural world through their beliefs, attitudes, and physical connections. Go to page 46.

Connection to Nature Index (8–10 years)
14-item scale that measures a child’s feelings about nature connection. Go to page 27.

Connectedness to Nature Scale (Children’s Version) (10+ years)
10-item scale that measures a child’s feelings about nature connection. Go to page 23.
Is your program low, medium, or high intensity?

**Adolescents and Adults (14 years+)**

**Low intensity**
(Example: a one-day field trip or a short workshop)

Your program may be very useful and impactful, but a short exposure is unlikely to influence connection to nature in a way that can be measured with these tools. Try measuring knowledge or attitudes. 
(See Appendix B.)

**Medium intensity**
(Example: a weeklong nature retreat or an ongoing after-school program)

**Inclusion of Nature in Self Scale**
1-item pictorial scale that measures how an individual thinks about their relationship with nature. Go to page 34.

**Love and Care for Nature Scale**
10-item scale that measures emotional connection to nature. Go to page 43.

**High intensity**
(Example: an immersive 10-day backpacking trip or a yearlong training program)

**Inclusion of Nature in Self Scale**
1-item pictorial scale that measures how an individual thinks about their relationship with nature. Go to page 34.

**Love and Care for Nature Scale**
10-item scale that measures emotional connection to nature. Go to page 43.

**Environmental Identity Scale**
11-item scale that measures how an individual’s connection to nature relates to their personal identity. Go to page 30.

**Nature Relatedness Scale**
21-item scale that measures how people relate to the natural world through their beliefs, attitudes, and physical connections (there is also a shorter, 6-item version). Go to page 46.

**Connectedness to Nature Scale**
14-item scale that measures feelings about nature connection. Go to page 23.
Gaps in the Research Base of the Guide

Settings:
• urban v. rural; land v. aquatic; indoor nature; virtual nature

Audiences:
• people of different ethnicities, cultures, languages, identities, abilities
• people with varied connections: farmers, hunters, Indigenous peoples
• people beyond the U.S.

New approaches:
• particularly qualitative to serve a range of audiences and settings

Other differences:
• variation from one place to another, from one way of knowing to another, from one experience to another, from one age/life stage to another
Break with Q&A
(Up Next: Part 2 Application and Practice)
Guidebook Application
Scenario 1

Suppose you want to learn how your organization’s members feel about their connection to nature.
Strategy: One-time Assessment for Adults or Children

Love and Care for Nature Scale
15-item scale that measures emotional connection to nature.
Perkins, 2010

Environmental Identity Scale
11-item scale that measures how an individual’s connection to nature relates to their personal identity.
Clayton, 2003

Inclusion of Nature in Self
1-item pictorial scale that measures how an individual thinks about their relationship with nature.
Schultz, 2002
Scenario 2

Suppose you want to know if a 10-day backpacking trip influences connection to nature for 100+ participants.
Strategy: Scale as a Pretest/Posttest

**Connectedness to Nature Scale**
14-item scale that measures feelings about nature connection.

*Source:* Mayer & Frantz, 2004

**Environmental Identity Scale**
11-item scale that measures how an individual’s connection to nature relates to their personal identity.

*Source:* Clayton, 2003

**Nature Relatedness Scale**
21-item scale that measures how people relate to the natural world through their beliefs, attitudes, and physical connections.

*Source:* Nisbet, Zelenski, & Murphy, 2009
Scenario 3

Suppose you want to know if a 10-day backpacking trip influences connection to nature for 10 participants?
Strategy: Qualitative Data

**Interpretation of Drawings**
Approach that uses children’s drawings to understand their connection to nature.

**Journaling**
Approach that uses journal entries to measure connection to nature.
Application & Practice

Instructions

• In small breakout session, say hi and choose a timekeeper. Then work solo for 5 minutes using the Decision Tree to choose a tool/instrument for one of your programs.

• At 5-minutes, discuss with breakout members for 15 minutes the tool each person chose and how it fits your program criteria.

• Come back to the large group ready to discuss your experience with the Decision Tree and selecting a tool.
Debrief with Whole Group

• What was your experience with the Decision Tree and selecting a tool?
The Guide’s Table of Contents

After selecting your tool:

- Conducting your assessment
- Ethics & evaluation
- Future research on C2N
- Additional Measurement Tools
Resources to Extend Your Learning

- eePRO at NAAEE.org
- Collaborations between practitioners and researchers
- NAAEE Evaluation Portal (coming soon!)
Supporting References


Thank You

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