ESTABLISHING COLLECTIVE OUTCOMES FOR ENVIRONMENTAL EDUCATION

YEAR END REPORT

December 21, 2017

Introduction

The following brief summarizes the movement we've made in 2017 to help establish Colorado collective outcomes in environmental education. This summary is based on several rich conversations from March to September that we shared with EE practitioners, evaluators, and researchers on how we might, as a field, begin to put this theory into practice.

Collective Outcomes Timeline:

March 2017: Colorado Practitioners + Evaluators

- what do we want to know?

May 2017: National child-nature experts

- impact areas + leverage points

September 2017: Colorado Practitioners

- indicators

Background | Purpose & Intention

After reviewing and reflecting on the conversations we've shared to date, we know that the work in Colorado is building off of previous efforts in the field to establish a collective and shared understanding for how programs and organizations impact the lives of participants – efforts that explore and challenge which common outcomes are woven throughout the many and varied organizations who do this work. Our intention in seeking multiple perspectives is to ensure that our work does not move forward in a vacuum; but is instead connected to, aware of, and builds off of the many other synergistic efforts underway.

The What

Through the conversations outlined above, we identified a set of five major impact areas[1] encompassed by EE initiatives and the cross-cutting indicators we believe lead to these impacts. We are calling these indicators "Determinants of Environmental Literacy" as research and evaluation findings suggest that when these indicators are present and strong, they can and do lead to impact (see Figure 1).

The five impact areas include: EDUCATION; CONSERVATION; HEALTH; SOCIAL JUSTICE; and, YOUTH DEVELOPMENT (see DEFINITIONS below). After many iterations of poster-sized paper, sticky notes, and dots, the cross-cutting indicators of these five areas include:

- Academic Participation
- Access | Connection to Nature
- Health of the Physical Environment
- Community & Civic Engagement (*on behalf of the environment*)
- Diversity, Equity & Inclusion | Relevancy
- Well-Being
- Workforce | Green Jobs

---

[1] Original Impact Areas and definitions come from the Pisces Foundation.

Figure 1: Determinants of Environmental Literacy

Impact Areas

Provided below are definitions adapted from the Pisces Foundation's impact areas. These impact areas reflect what the Pisces Foundation has identified as "funding priorities" with their funder audience.

To better align these impact areas with the Colorado Collective Outcomes work, we used a results-based accountability (RBA) framework to envision what these impact areas might look like in real-time. The primary goal of this collaborative effort is to move all EE stakeholders closer to a shared language, clarity of roles, and a common understanding for intended outcomes and, ultimately, impact.

I.   *Conservation (RBA Process Definition)*

Result: All Colorado ecosystems are healthy, vibrant, and valued.

Defined as: Programs with conservation outcomes include those that increase environmental knowledge, improve environmental awareness and attitudes, and inspire positive environmental actions that lead to improvements in environmental quality. (environmental health = human health = environmental quality)

Quality of life or condition for the desired population is:
- All Coloradans have clean air, water, & soil
- All Coloradans have access to, and utilize, public transit, bike routes, and safe walking paths connecting communities
- All Coloradans have access to, and use, renewable energies for their homes and businesses
- Open space programs and state parks are well funded and supported for both recreation and wildlife/habitat protection
- Environmental education is included throughout formal educational systems P-20+ in all Colorado learning institutions

Impact Area: Conservation	Possible Indicators of Success at the Population Level
	- Increased funding for EE from private, public, government sources - Increase in % of CO students with EE programing in formal education - Increase in neighborhood green space - Increase in access to green space - INCREASE IN ENVIRONMENTAL QUALITY OF GREEN SPACE - Increase on legislation proposed, then passed, focused on conservation issues - Increase in recycling programs-too specific - INCREASE IN ENVIRONMENTAL BEHAVIORS - Increase in # of volunteers participating in stewardship # of citizens attending meetings/forums % low-income communities (by zip code/demographics) vs. % environmental hazards (superfund classification?) - Increase in walkable paths in communities (by zip code) - Increase in fresh water quality - Increase in trade/training programs for renewable energies - Increase in enrollment in university programs in green jobs (needs defining)

II.   Education (RBA Process Definition)

Result: Environmental education ensures all PreK-12 students succeed in school.

Defined as: Education outcomes encompass improved academic performance, broadly defined. Outcomes for education can include greater STEM literacy, higher standardized test scores, and increased school engagement for students. This also encompasses programs that support teacher professional development and direct improvement of school grounds and other learning spaces.

Quality of life or condition for the desired population is:
- Student demonstrate strong academic performance.
- Students demonstrate increased critical thinking skills
- Students demonstrate increased engagement in learning
- Students demonstrate increase in knowledge
- Teachers get Professional Development in EE
- Schools have nature based learning environments

Impact Area: Education	Possible Indicators of Success at the Population Level
	- Increase in % PreK-12 students graduating from High School - Increase Level of engagement in learning (School Climate) - Increase in % of students with Access to EE programs - Increased % Participating in Issue investigation & action - Increased % schools taking EE field trips - Increased # opportunities for civic or community engagement (programs) - INCREASED CIVIC ENGAGEMENT THROUGH EE PROGRAMS - Increase in diversity of demographics of schools participating in EE - Increase % Schools participating in EE - Increase # Green Schools - Increase in # students enrolled in NR/environment degree program (SUSTAINABILITY/SCIENCE)

III. Health & Wellness (RBA Process Definition)

Result: Through increased connection to the outdoors, all Coloradans are physically, mentally, emotionally, and socially healthy and well.

Defined as: Health outcomes are improvements in physical, mental, emotional, and social health and wellness. Health outcomes include improved nutrition, physical fitness, reduced stress and anxiety, recovery from physical or psychological trauma, and greater awareness and understanding of personal and environmental health.

Quality of life or condition for the desired population is:
- People spend time outdoors daily
- People are mentally well and experience fewer symptoms of stress, depression, cognitive fatigue, sedentary lifestyle and chronic illness
- There are equal access opportunities to QUALITY outdoor spaces
- People feel welcome in outdoor spaces
- People understand the reciprocity of a healthy environment, healthy self

Impact Area: Health & Wellness	Possible Indicators of Success at the Population Level
	- Increase in naturalized playgrounds (school & community) - Increase in programs offered that link healthy environment, healthy self - Increased Time in Nature- - demographics of park/open space - number of hours spent outdoors - types of experiences - Increase in leadership at EVERY level that supports the concept of sustainability (healthy environment; social equity; economic vitality) - Increase in number of communities of color with safe access to quality outdoor spaces- EMPHASIS ON QUALITY - Increase in number of students of color who view themselves as having a "connection to nature" - Increase in # of Sustainable & Healthy Communities - Decrease in # communities with Food/nature deserts - Increase in # Safe pathways to nature areas - Improved Mental Health Diagnostics/Rx - Increase in time spent in nature - Increase in workplaces that support environmental/ community volunteer opportunities (like "plant a tree")

IV.   Social Justice (RBA Process Definition)

Result: All Coloradans have access to and opportunity to experience the outdoors.

Defined as: Social justice outcomes are related to access and opportunity for underserved communities and underrepresented populations. These outcomes include increased access to outdoor experiences, improved urban green space, and the development and support of environmental educators and leaders from traditionally underrepresented groups.

Quality of life or condition for the desired population is:
- All members of all communities across Colorado feel welcomed in parks and open spaces, feel comfortable being outdoors alone, with friends, and with family, and feel empowered to advocate for local and wild spaces in our state.
- The demographics of our state are fairly represented in all parks and open spaces (hyper local, local, regional, and state)
- Local green spaces are accessible in every community including walking paths and gathering places
- All communities have access to food gardens and prices to participate are affordable
- Leadership in EE accurately represents the demographics of our state
- All members of all communities have access to safe and healthy environments.

Impact Area: Social Justice	Possible Indicators of Success at the Population Level
	- Increase % Students with Access to EE in School - Increase in diversity of demographics of schools participating in EE - DECREASE IN BARRIERS TO ACCESSING NATURE- ALLOW FOR MEASURES TO BE COMMUNITY AUDIENCE SPECIFIC - Decrease % of Nature Areas with entrance fees - Increase % Coloradans with Safe & Convenient Pathways to Nature - Increase diversity of Demographics of public officials - Increase in % EE programs designed with community engagement - Increase in # of community-based leaders (from within their community) using environment as a context - Increase diversity of demographics of EE program staff - Increased air quality, especially in neighborhoods/ communities with low SES (ENVIRONMENTAL) - INCREASE IN # OF MUNICIPALITIES PRIORITIZING ENVIRONMENT IN STRATEGIC PLAN - Increase diversity of demographics of Green Workforce in Colorado - Increase diversity of demographics of Students enrolled in green/environmental education programs - INCREASE IN % OF SCHOOLS PARTICIPATING EE

V. Youth Development (RBA Process Definition)

Result: Youth grow into responsible, engaged citizens that care for the environment and their communities.

Defined as: Programs with youth development outcomes are aimed at guiding young people as they grow into responsible, engaged citizens that care for the environment and their communities. These outcomes may be achieved through professional, leadership, or character development and/or through outdoor experiences or community service. Youth development outcomes may intersect with other outcome areas, as youth development is broadly focused on the education and development of the whole person.

Quality of life or condition for the desired population is:
- Increased access to outdoor/nature-based learning experiences, esp. for participants of color and/or low-SES
- Quality mentor/internship experiences with a focus on sustainability and the environment that grow youth's knowledge and skills
- Meaningful outdoor-based, service-learning projects through schools
- Youth actively involved in civic/community engagement projects w/ opportunities for increasing responsibility and leadership

Impact Area: Youth Development	Possible Indicators of Success at the Population Level
	- Increase in # opportunities that provide a continuum of experience (and community of support) - Increased # opportunities for civic or community engagement (programs) - Decrease % Coloradans not participating because of affordability - Decrease % Coloradans not participating because of lack of gear - Decrease % Coloradans not participating b/c lack of transportation - EQUITY AMONG AGE GROUPS AND ALL CATEGORIES ACROSS PROGRAM - SOCIAL EMOTIONAL - SELF EFFICACY - PROSOCIAL BEHAVIOR - AGE APPROPRIATE - AGENCY - Increase in # of mentors/internship opportunities through a variety of partners

Operational Definitions

To be clear, we hold an expansive view and understanding of what EE does and looks like, as well as environmental literacy. The definitions below best capture our use of these terms:

Environmental Education:
"EE is characterized as a learning process, whose ultimate goal is to educate and encourage people in engaging in more sustainable and environmentally responsible practices […] EE supports and promotes environmental knowledge, skills, and changes in behavior to reach environmental literacy goals." [2]

Environmental Literacy:
"An environmentally literate person [is] someone who, both individually and together with others, makes informed decisions concerning the environment; is willing to act on these decisions to improve the well-being of other individuals, societies, and the global environment; and participates in civic life."[3] [4]

Because this collective and collaborative work is also concerned about people's connection to and care for place in terms of both social and natural experiences, we also include the term *ecological literacy*.

Determinants (indicators) of Environmental Literacy

Below is a summary of each cross-cutting indicator, or determinant, of environmental literacy. Data sources listed are not intended to be exhaustive or final, but represent the possibility.

Academic Participation

> Data points contribute to understanding the ways in which EE/nature-based learning efforts contribute to academic participation which may include: improved SEL competencies; improved sense of student well-being; increase in motivation to learn; increase in student engagement; increased attendance; improved grades; improved test scores; increased graduation rates.

Access | Connection to Nature

> Data points contribute to understanding how increased proximity to natural places and spaces improves connection to nature through increased time spent (dosage) and the influence on attitudes, awareness, and action; measures that assess access to natural spaces including safe and convenient pathways (TPL Park Score).

Health of the Physical Environment

> Data points contribute to understanding the current health of the physical environment and how that changes over time. Data could be collected at the local, regional, and state level depending on relevancy. At the state or regional scale, data should reflect overall environmental health including air and water quality, proximity to resource extraction, and overall green space. At the local scale, data might aim to capture program-based initiatives targeting trash, water, and air

---

[2] Biedenweg, K., Monroe, M. C., Wojcik, D. J. (2016) "Chapter 1: Foundations of environmental education," from *Across the Spectrum: Resources for environmental educators, edition 3*, Monroe, M. C. & Krasny, M. E. (eds.)

[3] Hollweg, K. S., Taylor, J. R., Bybee, R. W., Marcinkowski, T. J., McBeth, W. C., & Zoido, P. (2011) *Developing a framework for assessing environmental literacy.* Washington, DC: North American Association for Environmental Education. Available at http://www.naaee.net.

[4] NEEF. (2015) *Environmental Literacy in the United States: An Agenda for Leadership in the 21st Century*. Washington, DC: National Environmental Education Foundation.

pollution; vegetation plantings; and, other sustainability initiatives (e.g., recycling, alternative transportation, water consumption, etc.).

Community & Civic Engagement (*on behalf of the environment*)

Data points contribute to understanding how one's participation with programming, organizations, or time in nature motivates one's commitment to supporting candidates, ballot measures and community initiatives aimed at improving community well-being through environmental well-being. Such data points may include: environmental legislation & policy; volunteer hours; environmental improvement; environmental leadership; issue investigation & action; support for environmental ballot measures; and, voter turnout.

Diversity, Equity & Inclusion | Relevancy

Data points examine how activities and programs are thinking about AND achieving DEI in their work. An important component of DEI work is the consideration of access and participation: access to natural spaces, places, and nature-based programming. Data points should also consider how cultural relevancy or sustainability is being considered and incorporated. Beyond sheer demographics, we need to identify other indicators that show DEI is positively shifting: increased community engagement from communities of color; community-based initiatives (ex: Mestizo-Curtis Park, Denver, CO).

Well-Being

Data points contribute to an understanding for how individual and community well-being are improving based on increased engagement with nature and programs that promote EE and nature connection. Data points could include: biometrics; healthcare provider engagement; perceived well-being; perceived safety; improved access/decreased barriers to natural spaces; increased awareness; increased knowledge related to environmental issues and resolution skills; self-efficacy; and, mental health.

Workforce | Green Jobs

Data points help inform how scaffolded opportunities within organizations or through programming might lead to people seeking green jobs and/or promoting sustainability efforts within their existing job/business. Data points could include: green job internships; increase in degrees or certificates awarded in fields related to environmental studies, geography, environmental education, sustainable community/urban planning; growth in green job sector; growth in B-Corps certification; business' reporting on internal sustainability initiatives.