caee

COLORADO ALLIANCE
for ENVIRONMENTAL
EDUCATION

Grounding in Research and Data

A Toolkit for Environmental Education
Organizations to Understand
Outcomes and Impact

Point b(e)
STRATEGIES

Contents

Overview of Colorado Collective Outcomes & Report Purpose

Overview

In 2017, the Colorado Alliance for Environmental Education (CAEE) developed Colorado Collective Outcomes (COCO) to provide Environmental Education practitioners, evaluators and funders with shared outcome areas and tools from which to demonstrate the full scope of Environmental Education's impact across the state. The initial framework and corresponding tools and trainings were designed to accomplish the following objectives:

- Demonstrate the role of Environmental Education (EE) in improving the quality of life in Colorado
- Build capacity for evaluation within EE Organizations
- Provide a framework for evaluating EE across and among organizations
- Align the needs of funders and EE practitioners

This report expands the utility of these outcome areas by providing research that grounds the rationale for their selection; population-level data sources to complement organization-led data collection efforts; and recommended narrative frameworks to share the story of organizational impact. These objectives will be accomplished through the following report components for each outcome area:

Overview of the impact area (conservation, education, positive youth development, health and wellness and social justice) and potential EE organization program outcomes

Questions and considerations to guide organizations' selection of impact areas/outcomes

Research to ground the importance of the impact area for EE organizations

Recommended publicly available data sources that can be used in grant applications, reporting and more

Recommended narrative framework to "tell your EE story" with examples from fictional EE organizations

The Complexity of Outcome Research in Environmental Education

Environmental Education is a multi-dimensional strategy that impacts practitioners, participants and communities in a dynamic exchange (Ardoin et al., 2020). Research of EE programs has often focused on evaluating the impact on participants' attitudes in order to shift behavior, but this can reduce the complexity of participants' prior knowledge and the specific context the program is operating within (Marcinkowski & Reid, 2019). CAEE selected the following outcomes with the acknowledgement that the EE field is vast and complex, and each program will resonate with some of these focal points more than others. This report showcases an array of research that can be utilized to support an organization's grounding in one or more of the following areas, including: conservation, education, positive youth development, health and wellness, and social justice.

Figure 1 showcases the five outcome areas with the following: 1. Population-level outcome/impact, and 2. Explanation of what programs that are aligned with this outcome area consist of/aspire toward.

Figure 1: Colorado Collective Outcomes

Colorado Collective Outcome Areas

Conservation

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

Education

Environmental education supports and ensures all PreK-12 students are lifelong learners with successful school outcomes. Programs with education outcomes include those that improve academic performance, increase E-STEAM literacy, improve standardized test scores, and expand school engagement using the environment as an integrating context.

Social Justice

All Coloradans have access to and opportunity to experience the outdoors. Programs with social justice outcomes include those that increase access and opportunity for underserved communities and underrepresented populations. These outcomes include increasing access to outdoor experiences, improving urban green space, and developing and supporting environmental educators and leaders from traditionally underrepresented groups.

Positive Youth Development

All Colorado children and youth grow into responsible, resilient, engaged citizens that care for themselves, their natural environment, and their communities. 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.

Health and Wellness

Through increased safe access, connection to and comfort in the natural environment, all Coloradans are healthy and well—physically, mentally, and emotionally. Health outcomes include improving nutrition, increasing physical fitness, reducing stress and anxiety, recovering from physical or psychological trauma, and increasing awareness and understanding of personal and environmental health.
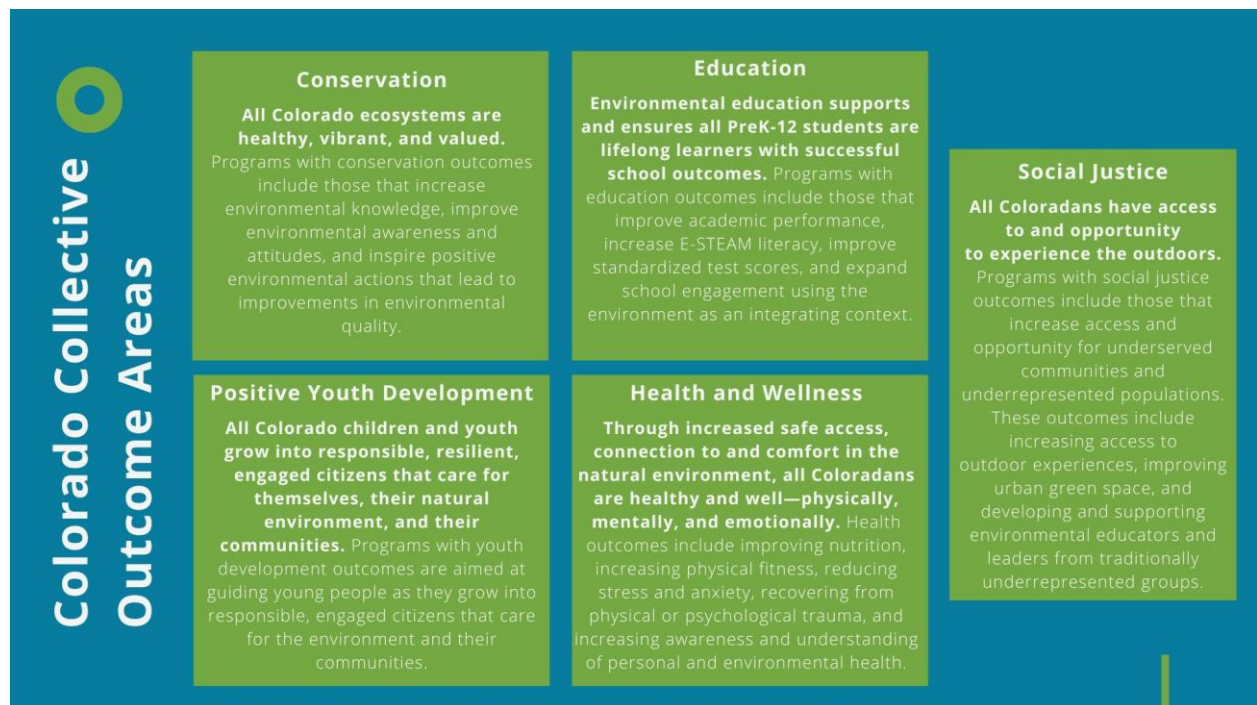
Figure 2. Understanding the interests of key stakeholders

As your organization considers which of the above outcomes aligns most closely with your programming and with the primary concerns of your key stakeholders, you can utilize this report to 1. Identify your intended or current impact; 2. Utilize the collected research to strengthen your "why" to your community; 3. Ground in the recommended public data sets to understand your impact in a broader context; and 4. Tell the story of your impact by using recommended narrative frameworks.

Impact Area: Conservation

People's wellbeing is interconnected with the wellbeing of natural systems. We face increasingly complex challenges—from climate change and loss of species to decreasing access to nature, a growing gap between the haves and have nots, and other threats to our health, security, and future survival. Environmental and outdoor learning is one of many conservation strategies that equips people, communities, and organizations to care for our world and sustain it for future generations.

All Colorado ecosystems are healthy, vibrant and valued.

How can environmental and outdoor learning support conservation efforts?

In working toward ensuring that all Colorado ecosystems are healthy, vibrant, and valued, environmental and outdoor learning is working alongside many other education initiatives to achieve the following impacts:

- Increase in environmental behaviors
- Increase in environmental quality: water, air, and soil
- Increase in connection to nature across all of Colorado's demographics

Are your funders or other key stakeholders interested in achieving these or similar outcomes? If so, you may want to evaluate and tell the story of your conservation outcomes.

Do your programs:

- Focus on local environmental issues or locally relevant elements of broader environmental issues?
- Form partnerships with scientists and resource managers from local agencies and organizations?
- Incorporate action elements into programs?
- Measure direct conservation results (trees planted, trash removed, etc.)?

Research shows direct links between the practices above and conservation outcomes, such as an increase in environmental quality. If your program is engaged in the above, you may want to be evaluating and communicating conservation outcomes.

Things to Consider
> What aspects of conservation are most important to your audience and/or stakeholders?
> Why are conservation outcomes important to your organization?
> What are the goals that you share with your audience and/or stakeholders?

🔍 Existing Research on Conservation

The Need for Conservation in Colorado

Conservation encompasses the broad scope of strategies created to address the impact of human development on the world. The population is at a "crossroad in terms of how we use the ecosystem services, species, habitats and life support systems that underpin our economy" (Earth.org, 2021). The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), an independent intergovernmental body comprised of over 130 member governments, generated the latest "Global assessment report on biodiversity and ecosystem services" in order to provide "scientifically credible and independent up-to-date assessments of available knowledge for better evidence-informed policy decisions and actions at the local, national, regional and global levels" (2019). IPBES's report outlines the following in its assessment of the status and trends of the natural world:

- 77% of land and 66% of the marine environment have been significantly altered by human activity.
- On average, 25% of animal and plant groups are considered threatened, "suggesting that around 1 million species already face extinction, many within decades, unless action is taken to reduce the intensity of drivers of biodiversity loss."
- Humans are "estimated to have caused an observed warming of approximately 1.0℃ by 2017 relative to pre-industrial levels, with average temperatures over the past 30 years rising by 0.2℃ per decade."

These trends represent a fraction of the impact of humans on nature and provide a compelling foundation for the importance of programming focused on conservation efforts that seeks to influence participants' behaviors, attitudes and actions toward the environment.

EE Programs and Impact

EE programs aim to influence conservation efforts by "facilitating opportunities for scientists, decision-makers, community members and other stakeholders to converge" and cultivate "environmentally related attitudes, values, awareness, knowledge, and skills that prepare people to take informed action" (Ardoin et al., 2020). In an effort to understand the research-based impact of EE programs on conversation, a team of Stanford researchers conducted a systematic review of 105 environmental education studies published between 1997 and 2016 (Ardoin et al., 2020). This research has been summarized by eeWorks, a program of the North American Association for Environmental Education (NAAEE), Stanford University and other partners, so that EE organizations can readily apply the learnings in support of their organization's efforts. eeWorks' summary includes five focus areas of

evidence that illustrate how EE organizations with programming focused on conservation contribute to improving the environment and conservation efforts by: "(1) building knowledge, skills, and intentions to adopt environmental behaviors; (2) adopting pro-environmental behaviors in participants' personal lives; (3) taking direct environmental actions during the educational programs; (4) building community conservation capacity; and (5) measurably improving the environment" (n.d.). A summary of the research includes the following most commonly reported outcomes among participants:

- **Behavioral antecedents:** 87% of programs measured changes in behavioral antecedents or participants' "awareness, knowledge, intentions, or skills, either as part of a suite of measured outcomes or as the sole outcome of focus" that contribute to behavior change (Ardoin et al., 2020).
- **Completed action projects:** 46% of studies "reported on participants undertaking some type of environmental action during the course of an environment education program" such as "planting trees for habitat restoration" (e.g., Harder et al., 2014 as cited in Ardoin et al., 2020)" or "cleaning up beaches, streams, or schoolyards (e.g., Uneputty et al., 1998 as cited in Ardoin et al., 2020)."
- **Community capacity building:** 39% of studies focused on the impact of EE programming on expanded capacity of communities to address environmental challenges with conservation efforts. Programs resulted in community-based outcomes through "improved relationships and communication among stakeholder groups; increased community participation in conservation projects; establishment of local environmental groups; and building of formal or nonformal educators' professional skills and knowledge" (Ardoin et al., 2020).
- **Self-reported behavior change:** 29% of studies resulted in "self-reported changes in behavior" among participants; for example, a pre and post survey conducted with youth participating in a residential EE program located at a national park noted a "change in behaviors such as turning off lights and reducing water waste" (Stern et al., 2008). These studies considered the length of the behavior change to determine lasting impact, when possible.
- **Observed behavior:** 10% of studies showcased programs that "included a direct, observable measure of behavior change by program participants." For example, providing scuba divers with environmental education briefings prior to a dive results in "fewer diver-reef contacts and, by extension, less potential damage" (Camp and Fraser, 2012; Medio et al., 1997).
- **Ecological indicators:** 4% of studies used "ecological indicators, such as improved water quality or enhanced levels of biodiversity, to evaluate the ways in which environmental education programs physically impact environmental quality and/or address conservation concerns" (Ardoin et al., 2020).

In order to make these learnings actionable for EE organizations, eeWorks also prepared recommendations for each focus area with strategies for organizations to adopt these practices. These practices are grounded in the additional analysis conducted by the Stanford research team to understand "what kinds of environmental education strategies and programs had the most effect on conservation outcomes specifically" (eeWorks, n.d.). For organizations with direct impact on conservation efforts, the Stanford research team outlined shared characteristics which include the following: "(1) a focus on local environmental issues, (2) partnerships with scientists and resource managers from local agencies and organizations, (3) incorporation of action projects aimed at solving at least part of a conservation issue or problem, and (4) creative and thorough approaches to measurement and reporting of program outcomes" (eeWorks, n.d.). eeWorks took these practices from effective conservation-related programming and outlined how organizations can replicate them with their own efforts, outlined below.

- For EE organizations seeking to establish a "focus on local environmental issues or locally relevant elements of broader environmental issues," effective practices include: hosting programming in "local environments (such as parks, nature reserves, urban green spaces, or schoolyards)" and include local scientists to provide learning opportunities for community members to "collect data, monitor outcomes, and partner with the government to reach conservation goals" (eeWorks, n.d.).

- EE organizations that aim to develop "partnerships with scientists and resource managers from local agencies and organizations" can consider outreach and collaboration with entities such as "schools, community groups, scientific organizations, businesses, nonprofit organizations, and government agencies" in order to facilitate a "community-wide effort to address an environmental problem" (eeWorks, n.d.). Collaborative efforts can expand the potential audience for conservation efforts as this would increase the network engaged in information sharing.

- EE organizations that strive to "incorporate action elements into programs" can integrate "action-oriented learning strategies and approaches, including citizen science and service-learning" (eeWorks, n.d.). This type of programming emphasizes "hands-on activities such as removing invasive plant species, organizing litter cleanups, and installing water quality improvement systems" that connect participants to tangible methods to addressing environmental challenges. This can also be supported by connecting participants to "ecological monitoring data with scientists and community partners" to deepen understanding (eeWorks, n.d.).

- All EE organizations focused on conservation should consider creative approaches to "measuring and reporting outcomes"— whether that be documented as the "amount of trash removed, number of trees planted, or acres restored" (eeWorks,

n.d.). By designing programs with "specific conservation outcomes in mind, successful programs often incorporate vital strategies shown to be effective for achieving conservation impacts" and for integrating the effective practices listed above: focusing on local issues, building partnerships, and utilizing hands-on activities.

Figure 3: Environmental quality and conservation outcomes coded in the 105 reviewed studies arranged by increasing level of proximity to direct improvement (Ardoin et al., 2020)
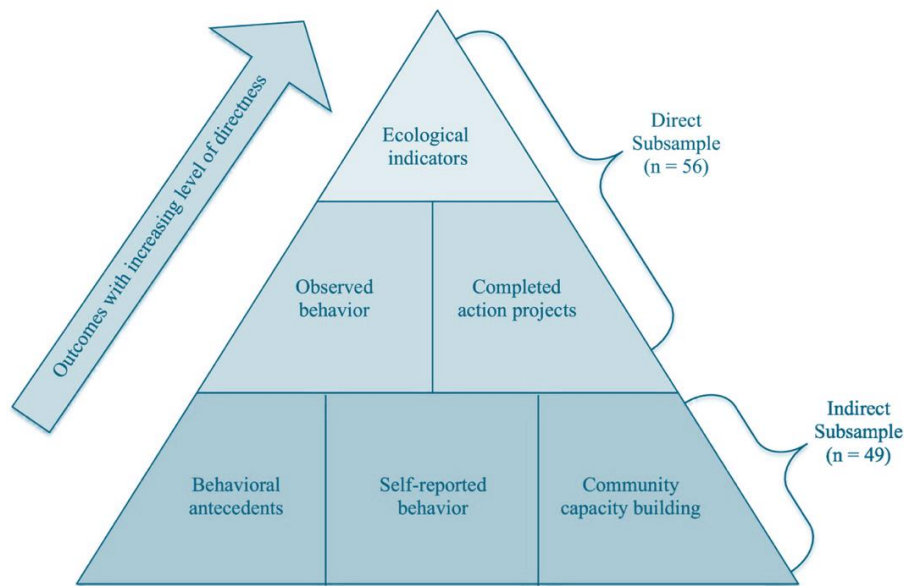
There is not one model or method of impact to achieve the greatest impact on conservation efforts. Regardless of the specific organization's approach, eeWorks summarized Stanford's review as solidifying EE as an "important strategy to develop individual pro-environmental behaviors, build community capacity, support conservation action projects, and ultimately, contribute to addressing long-term environmental and conservation goals" (n.d.).

Key Considerations for EE Organizations
> How do you frame the conservation-based need for your organization's programs and initiatives to funders or other stakeholders?
> If conservation is one of your organization's selected outcome areas, which of the types of impact (direct or indirect) align most closely with your intended and/or actual impact on participants and communities?
> If your organization does not have extensive evaluation efforts underway, how could you utilize this research to support your organization's programs and activities?

How are we doing with conservation efforts in Colorado?

The following section provides EE organizations with sources for national, state, and local data to accomplish the following: 1. contextualize the impact of EE programs on critical conservation goals; 2. expand EE organizations' ability to tell the story of how environmental and outdoor learning supports conservation efforts.

Conservation: Relevant Data Sets

Stanford University's compilation of key findings from a review of 105 environmental education studies included the multitude of ways that "environmental education helps support and sustain a range of conservation efforts," including the direct impact on "ecological indicators, such as improved water quality or enhanced levels of biodiversity, to evaluate the ways in which environmental education programs physically impact environmental quality and/or address conservation concerns" (eeWorks, n.d; Ardoin et al., 2020). The following data sources provide a means to understanding the baseline of environmental indicators to then track potential programmatic impact.

The Colorado EnviroScreen

Websites:

- Overview of Colorado Enviroscreen Initiative
- Enviroscreen Tool

The Colorado EnviroScreen is Colorado's bilingual interactive environmental justice mapper that includes several measures to evaluate environmental quality by county. A team from Colorado State University developed the tool for use by Colorado Department of Public Health and the Environment (CDPHE). Colorado Enviroscreen combines 35 environmental, health, and demographic indicators. The tool "identifies areas with current and past environmental inequities" and highlights where "disproportionately impacted communities have a greater health burden and/or face more environmental risks" (CDPHE, 2022).

Environmental and outdoor organizations can download county specific data and utilize the percentile score to compare the environmental burden on their community to the rest of the state. The graph below showcases a sample report for El Paso County. The EnviroScreen score in the graph showcases a cumulative percentile rank compared to all other counties in Colorado based on five components: Environmental exposures, Environmental effects, Climate vulnerability, Sensitive population, and Demographics. The orange bar shows how El Paso County compares to the rest of Colorado. El Paso County ranks 89th percentile for Colorado, meaning that 89% of counties in Colorado are less likely to be burdened by environmental health injustices than residents in El Paso.

Figure 4. Enviroscreen Score for El Paso County, 2022.

Enviroscreen Score for El Paso County: 89th percentile.

Higher percentile = greater environmental burden on residents.
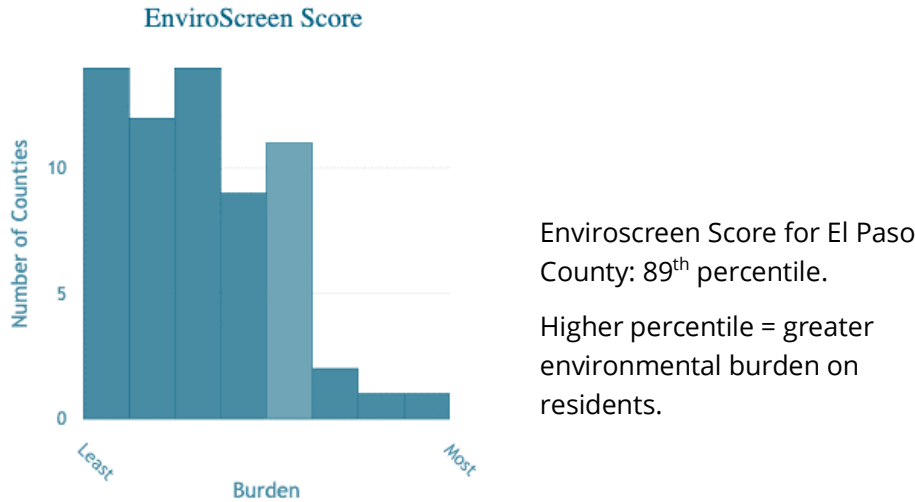
➤ **Environmental Protection Agency's (EPA)'s Environmental Justice Screening and Mapping Tool**

Website: EPA Mapping Tool

The following mapping tool allows for exploration of a multitude of factors that impact the quality of life in a geographic location. The map includes layers that track "environmental justice indexes," including, but not limited to: particulate matter, ozone, air toxics cancer risk, superfund proximity and hazardous waste proximity. These layers allow users to understand the factors that influence health outcomes—with the ability to search by a specific address or zip code. The table below showcases a snapshot of factors for Denver, CO, as compared to national averages.

Figure 5. Screenshot of table of Environmental Justice Indexes from the EPA Environmental Justice Screening and Mapping Tool for Denver, CO, as compared to national averages.

EJScreen Report (Version 2.1)
City: Denver
COLORADO, EPA Region 8
Approximate Population: 715,878
Input Area (sq. miles): 154.73
(The study area contains 10 blockgroup(s) with zero population.)

Selected Variables	Percentile in State	Percentile in USA
Environmental Justice Indexes		
EJ Index for Particulate Matter 2.5	84	62
EJ Index for Ozone	69	84
EJ Index for Diesel Particulate Matter*	85	77
EJ Index for Air Toxics Cancer Risk*	82	68
EJ Index for Air Toxics Respiratory HI*	82	69
EJ Index for Traffic Proximity	77	70
EJ Index for Lead Paint	74	64
EJ Index for Superfund Proximity	86	79
EJ Index for RMP Facility Proximity	82	74
EJ Index for Hazardous Waste Proximity	83	69
EJ Index for Underground Storage Tanks	76	69
EJ Index for Wastewater Discharge	72	73

EJ Index for the Selected Area Compared to All People's Blockgroups in the State/US

📍 **Environmental Protection Agency's (EPA) Climate Change Indicators**

Website: EPA Climate Change Indicators

EPA partners with over 50 data contributors from various government agencies, academic institutions, and other organizations to compile a key set of indicators related to the causes and effects of climate change. The indicators listed below are included in the EPA climate indicator map viewer and have separate databases to access current climate trends by category.

- **Greenhouse Gases** – Features an map that shows the greenhouse gas emissions by over 8,000 large facilities which account for 85–90% of total emissions. Data span from 1990 to present.
- **Weather and Climate** – Includes figures that describe the change in average surface temperature for the United States and the world. Figure 6 below shows how the annual average temperatures in the contiguous 48 states have changed since 1901 (NOAA, 2022). Additional charts are available to reflect changes in seasonal temperature, high and low temperatures, heat waves, precipitation, flooding and drought.

Figure 6. Temperatures in the Contiguous 48 States, 1901–2021
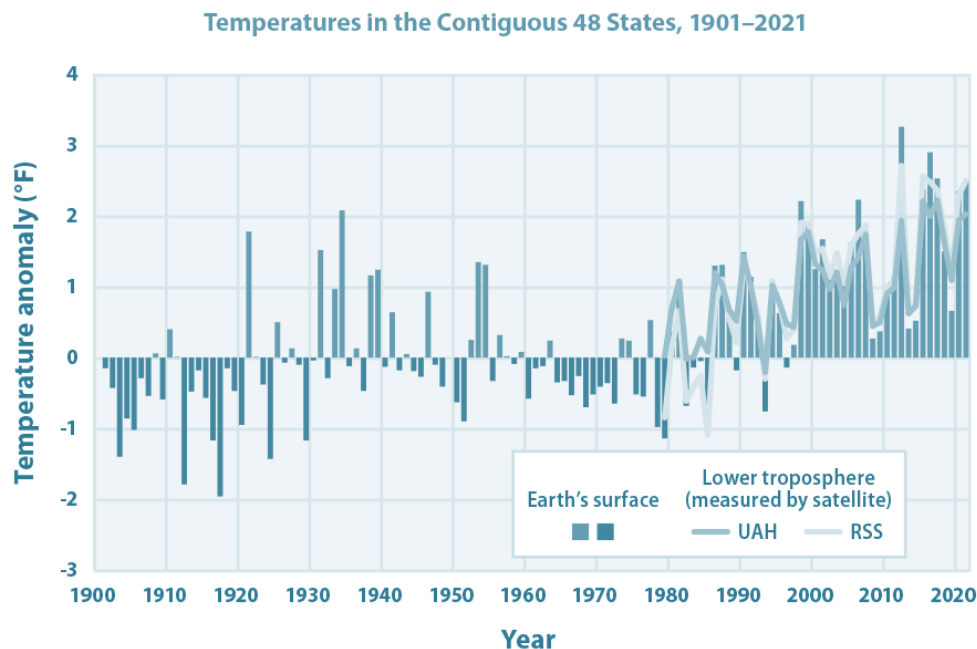
Data source: NOAA (National Oceanic and Atmospheric Administration). 2022. Climate at a glance. Accessed March 2022. www.ncdc.noaa.gov/cag.

For more information, visit U.S. EPA's "Climate Change Indicators in the United States" at www.epa.gov/climate-indicators.

- **Snow and Ice** – Showcases data on trends related to the Earth's snow- and ice-covered areas. Data reflect trends from changes in monthly sea ice levels to snowfall and snowpack.
- **Health and Society** – Includes data on the extent to which the Earth's climate has affected "public health, agriculture, water supplies, energy production and use, land use and development, nd recreation" (EPA, 2022). This includes heat- and cold-related deaths and the prevalence of certain diseases such as Lyme Disease and West Nile Virus.
- **Ecosystems** – Data points that reflect how climate change affects ecosystems, "including changes in wildfires, streams and lakes, bird migration patterns, fish and shellfish populations, and plant growth" (EPA, 2022).

These indicators also provide important input to the National Climate Assessment and other efforts to understand and track the science and impacts of climate change.

➤ Outdoor Air Quality Data Tool

Website: EPA Air Quality Tool

The Environmental Protection Agency (EPA) also provides a public database for researching the Air Quality Index (AQI) by zip code. This dataset also showcases an annual summary with the count of days in each AQI category from "Good" to "Hazardous." These reports are generated by "AirData"—air quality monitors located throughout the United States.

Recommendation for Use of Conservation-Related Data Sets
> Consider which aspect of conservation is most critical to your organization's programs and initiatives. Do you educate youth and/or adults on the impact of climate change on ecosystems? Are you focused on behaviors that minimize the potential for wildfires?
> Select relevant data points to understand the baseline context of your surrounding community. For example, use the Air Quality Index to search by zip code for your county's annual count of "good" or "unhealthy" days and compare this with other counties or states.

🌱 Telling your eeStory

In order to provide organizations with an example of how to communicate evaluation efforts to a variety of stakeholders, the following section showcases sample narrative framing to tell an effective story about impact in conservation-related efforts. The metaphors and recommended language were developed in collaboration with Frameworks, a "think tank that helps mission-driven organizations communicate about social issues in ways that build public will to support progressive change" (2023). The full Frameworks report, "How to Tell a More Effective Story About Environmental Education: A

Framing Guide for Advocates, Educators, Program Leaders, & Other Communicators" was prepared in partnership with CAEE and with support from Environmental Education of New Mexico (EENM) in 2020.

All examples included in these sections present fictional organizations created to provide context to the data integration process. Geographic locations and data trends are also fabricated.

Sample Story: Conservation

Summer Camps, like those provided by the Northern Colorado Nature Center bring the community together to learn about the natural world and how to best care for and sustain it for future generations. Just like a root system supplies nourishment to a plant to help it flourish, the Northern Colorado Nature Center provides kids with enriching experiences that develop the problem solving and critical thinking skills that will blossom in adulthood and help solve tomorrow's environmental challenges. The Northern Colorado Nature Center is a community-focused wildlife refuge situated in Baldwin County surrounded by urban development. The Center's location makes it a great place to study how humans and the natural world interact, either successfully or unsuccessfully.

Appeal to the values of your audience early and often. The values of protection and future preparation work well for conservation minded audiences (Moyer et al, 2020).

Baldwin County where the center is located, is in the 84th percentile in the state for ozone, the 81st percentile for stream and river impairment and the 83rd percentile for drought. Students attending camp at the Northern Colorado Nature Center grow skills by recording their observations about interactions between humans and the environment and identifying potential areas for improvement, choosing a problem and developing a solution, a strategy that research has found can lead to direct outcomes for environmental quality. Participants bring their proposed solutions back to the group for further exploration, and several projects are selected for campers to take action on. Students develop ownership over the problem and a chance to take action on an environmental issue they care about.

Use population level data for your city or county to establish current conservation conditions.

Explain, with specific examples, how your program implements practices from research that lead to conservation outcomes.

During the summer of 2022, Northern Colorado Nature Center provided 700 students with summer camp experiences. 75% of students reported an increase in knowledge of environmentally conscious behaviors, and 95% of students surveyed reported a change in behavior or the intent to change behavior to better protect the environment.

Use your evaluation data to demonstrate impact.

Impact Area: PreK-12 Education

Programs with education outcomes include those that improve academic performance, increase E-STEAM literacy, improve standardized test scores, and expand school engagement using the environment as an integrating context. Environmental and outdoor learning is one of many strategies that prepares students for the future by equipping them with rich learning experiences, deep understanding, and wide-ranging skills.

Environmental education supports and ensures all PreK–12 students are lifelong learners with successful school outcomes.

How can environmental and outdoor learning support PreK-12 Education?

In working toward ensuring that all PreK-12 students are lifelong learners with successful school outcomes, environmental and outdoor learning is working alongside many other education initiatives to achieve the following impacts:

- Increase in schools with environmental education programming
- Increase in academic testing scores
- Increase in students' level of engagement in learning (attendance and referrals)
- Increase in students enrolled in environment- related degree programs

Are your funders or other key stakeholders interested in achieving these or similar outcomes? If so, you may want to evaluate and tell the story of your education-related outcomes.

Do your programs:

- Support students in mastering academic standards?
- Incorporate students' interests and prior experiences?
- Engage students in participating in something that has an impact on others—especially their local community?
- Provide students with learning opportunities that support their career exploration in the field of Environmental Science or Natural Resources?

Research shows direct links between the practices above and educational outcomes, such as an increase in children's engagement in school. If your program is engaged in the above, you may want to be evaluating and communicating education outcomes.

Existing Research on PreK-12 Education

Evolving Needs in Education

In the aftermath of the COVID-19 pandemic, students and schools are recalibrating to a new format of education and addressing the ongoing impact of disruptions in schooling, including "absenteeism, student behavior, mental health and staffing challenges" (Institute of Education Sciences, 2022). In addition to behavioral and social emotional impacts, research has shown that the "average student lost more than half a school year of learning in math and nearly a quarter of a school year in reading" (The Hechinger Report, 2022). The massive changes experienced by students, educators and school leaders have prompted questions on the role of education and how best to prepare youth to address global challenges and thrive in the future economy. To that end, Google for Education released its first report from an ongoing two-year study, "Considering the role of education in a 'radically different future,' and what that might look like" (The Journal, 2022). The report builds on the top five in-demand skills identified by The World Economic Forum in 2020 as being the most sought-after skills by employers in 2025, and include the following:

1. **Analytical thinking and innovation:** The capacity to solve novel, ill-defined problems in the real world.
2. **Active learning and learning strategies:** Understanding of the implications of new information for both current and future problem-solving and decision-making.
3. **Complex problem-solving:** Abilities that influence the acquisition and application of knowledge in problem-solving.
4. **Critical thinking and analysis:** Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems, as well as assessing performance of yourself, other individuals or organizations to make improvements or take corrective action.
5. **Creativity, originality and initiative:** Capacity to analyze information and use logic to address issues and problems, and to apply alternative thinking to develop new, original ideas and answers.

These skill areas are intended to prepare students to be nimble in the face of rapidly changing technology and a "fluctuating future" (Google for Education, 2022). Teaching methods continue to evolve to develop these skills, yet the report acknowledges the "biggest barrier that teachers face globally to teaching new skills for the 21st Century is a perceived 'lack of time within a strictly regulated curriculum'" (Google for Education, 2022). Environmental and outdoor learning presents a compelling format for engaging or reengaging youth in school, cultivating these skillsets and equipping students to face global challenges. However, EE also encounters the same barriers present in traditional schooling,

including: lack of time, integration within the existing curricula, and concerns regarding classroom management (Broda, 2011).

EE Programs and Impact

Researchers at Stanford University conducted a review of 119 peer reviewed studies spanning 20 years that focused on understanding the impact of environmental education for K–12 students (Ardoin et al., 2018). Based on this research, eeWorks, a project led by Stanford University, University of California Davis, and University of Florida, summarized the key skills and knowledge that were shown to improve based on students' engagement with EE:

- **Increased knowledge** in subjects, including chemistry, biology, ecology, mathematics, reading, writing and the environment
- **Emotional and social skills,** such as self-esteem, character development, team work, and leadership skills
- **Environmentally friendly behavior**, such as reducing water use, increasing recycling, and participating in community cleanups
- **Academic skills**, such as critical thinking, oral communication, analytical skills, problem solving, and higher-order thinking. For example, one program included in the study utilized an EE program to develop critical academic skills in high school students. As noted by Dr. Farah Vallera, a professor at Lehigh University's Department of Teaching Learning and Technology, '"Students in the program significantly outscored their peers in applying knowledge from science, technology, engineering, and math, and in mastery of critical thinking, environmental literacy, leadership, and communication skills"' (eeWorks, n.d.).
- **Motivation to learn**, including enthusiasm for and interest in school. Studies referenced the "fun" of EE activities and how it increases "enthusiasm for and interest in school" (eeWorks, n.d.).
- **Civic interest and engagement,** which is defined as "feelings of civic responsibility, feelings of empowerment, and ability to take action" (eeWorks, n.d.).

eeWorks utilized the figure below to illustrate the key learnings from the research and to indicate that environmental knowledge is "just the tip of the iceberg," and the number of positive outcomes stemming from engagement in EE encompasses far reaching impact on students' skills, growth and social/emotional development.

Figure 7: The wide array of EE benefits for K–12 students (eeWorks, n.d.)

These results are supported and vetted across the Pre-K–20 learning continuum, from early childhood through graduate education. EE equips students to meet the needs of a changing world through real-world application of problem solving and critical thinking skills.

Key Considerations for EE Organizations
> How do you frame the education-based need for your organization's programs and initiatives to funders or other stakeholders?
> If education is one of your organization's selected outcome areas, which of the referenced skills and/or knowledge acquired aligns most closely with your intended and/or actual impact on participants and communities?
> If your organization does not have extensive evaluation efforts underway, how could you utilize this research to support your organization's programs and activities?

How are we doing with PreK-12 education efforts in Colorado?

The following section provides EE organizations with sources for national, state, and local data to accomplish the following: 1. Contextualize the impact of EE programs on positive youth development; 2. Expand EE organizations' ability to tell the story of how environmental and outdoor learning supports positive youth development efforts.

Pre-K-12 Education: Relevant Data Sets

The following data sources provide a means to understanding the baseline of education-related metrics to contextualize programmatic impact on these measures.

➹ Colorado CMAS Results

Website: http://www.cde.state.co.us/assessment/cmas-dataandresults

The Colorado Measures of Academic Success, or CMAS, is a summative assessment used to provide families, educators and students with a method of tracking students' acquisition of skills in language arts, math, science and social studies. CMAS aligns with the state's academic standards and also allows schools to understand trends by classroom and student demographic groups (Colorado Department of Education, 2023). Since the onset of the COVID-19 pandemic, test scores have declined nationally with the greatest drop in mathematics (PBS, 2022). The Colorado Department of Education notes that this may be a result of "ongoing reduced, disrupted and/or adjusted learning opportunities in school year 2021-2022" due to the pandemic (Colorado Department of Education, 2022).

The Colorado Department of Education provides data on CMAS results at both the state and district level. This data can be broken down by demographics including gender and ethnicity.

Colorado Measures of Academic Success Results and Trends for Statewide Test Scores, 2019-22	Value	Percentage Change from 2019 to 2022
2022 4th Grade State Achievement Results for English Language Arts (CMAS)	44.1% of students Met or Exceeded Expectations	-0.6%
2022 8th Grade State Achievement Results for English Language Arts (CMAS)	43.9% of students Met or Exceeded Expectations	-3.0%
2022 4th Grade State Achievement Results for Mathematics (CMAS)	30.7% of students Met or Exceeded Expectations	-2.9%
2022 8th Grade State Achievement Results for Mathematics (CMAS)	32.4% of students Met or Exceeded Expectations	-4.5%
2021 8th Grade State Achievement Results for Science	26.4% of students Met or Exceeded Expectations	-5.1%

➹ Graduation Rates by Colorado School District

Website: https://www.cde.state.co.us/cdereval/gradratecurrent

Graduation rates and specifically the percentage of students who complete their high school degree in four years - are often used as a measure of the state's academic progress. Graduation rates in Colorado have declined slightly in the past year - "81.7% of the class of 2021 graduated last spring, down from 81.9% of the class of 2020" (The Colorado Sun,

2022). The decline disproportionately impacted students of color with an increase in the graduation rate for White students "by 0.6 percentage points last year to 86.6%, while graduation rates for students of color fell by 1 percentage point to 76.1%" (The Colorado Sun, 2022). The graduation rate for Black or African American students was 76%, and Hispanic students graduated at a rate of 74.2% (Colorado Department of Education, 2022).

The Colorado Department of Education also provides data on graduation rates by district. This is broken down by demographic categories including gender and ethnicity. Data is formatted in Excel tables to review the trends by year, from the 2017–2018 graduating cohort to the 2020–2021 cohort.

➤ Attendance Trends by Colorado School District

Website: https://www.cde.state.co.us/cdereval/truancystatistics

Attendance rates are influenced by many factors and can be an indicator of engagement in learning. The Colorado Department of Education provides data on attendance and truancy rates by school district. Truancy is defined as "If a student is absent without an excuse by the parent/guardian or if the student leaves school or a class without permission of the teacher or administrator in charge, it will be considered to be an unexcused absence and the student shall be considered truant" (CDE, 2022). Chronic absenteeism is also included in public data sets and is defined as missing 10 percent or more of a school year, approximately 18 days a year, or just two days every month. The table below includes the statewide trends for attendance and truancy for the 2021-2022 school year, including the change in attendance from 2019. This data can be reviewed by school district to understand the current trends within a community and how those change over time.

Colorado Statewide Attendance Trends, 2021-2022	Value	Percentage Change from 2019 to 2022
2021-22 Statewide Attendance Rate	90.2%	-2.1%
2021-2022 Statewide Truancy Rate	3.6%	+0.62%

➤ Healthy Kids Colorado Survey

Website: https://cdphe.colorado.gov/hkcs

The Healthy Kids Colorado Survey is administered by the Colorado School of Public Health (CSPH) at the University of Colorado Anschutz Medical Campus, and its purpose is "to better understand youth health and the factors that help young people make healthy choices" (Colorado Department of Public Health and the Environment, 2023). Surveys are administered on odd-numbered years to middle and high school students across the state.

In 2021, 106,799 students participated with 68,281 high school students and 38,518 middle school students. Results from this survey provide schools, families and communities with trends impacting student health and can be utilized to accomplish the following: "Inform the creation of programming to support student success; Provide direction for schools and communities to address health issues; Share relevant topics with parents to help them talk to their children about their health and well-being; and Secure youth health program funding for schools, community organizations, and local and state government agencies" (Healthy Kids Colorado Survey, 2021). Organizations can access statewide data trends and/or data from each of the 15 Colorado regions. In the table below are metrics from the Healthy Kids Colorado Survey that pertain to students' engagement in school, including the percentage of students who "most of the time or always enjoyed being in school over the last year," and "who most of the time or always tried to do their best work in school." The table also reflects the percentage of students "who think the things they are learning in school are going to be important or very important later in life," and the percentage of students who participated in extracurricular activities, such as volunteering.

Healthy Kids Colorado Survey 2021 Statewide Trends Relevant to Student Engagement	Value	Percentage Change from 2019 to 2021
Percentage of students who most of the time or always enjoyed being in school over the last year (2021)	37.0%	+8.0%
Percentage of students who most of the time or always tried to do their best work in school over the last year (2021)	71.1%	+2.7%
Percentage of students who think the things they are learning in school are going to be important or very important later in life	52.4%	-0.8%
Percentage of students who participated in organized community services as a non-paid volunteer one or more times during the past 30 days	35.9%	NA

In addition to the results that pertain to student engagement, the Healthy Kids Colorado Survey also has questions that align with students' postsecondary education and career development. The results from the 2021 survey indicate that the majority of Colorado's high school seniors think it is important or very important to go to college, technical or vocational school. In contrast to student attitudes about postsecondary education, only 50.5% of high school graduates enrolled in degree or certificate programs after graduation, a 5% decrease from 2019 (Colorado Department of Higher Education, 2023). The table below showcases the metric pertaining to student attitudes about postsecondary education.

Healthy Kids Colorado Survey 2021 Statewide Trends Relevant to Student Degree Attainment	Value	Percentage Change from 2019 to 2021
Percentage of students who think it is important or very important to go to college, technical or vocational school (2021)	86.5%	-2.4%

⤴ Colorado Department of Education Degree Completion Dashboard

Website: https://highered.colorado.gov/data-and-research/tools/dashboard

The Colorado Department of Higher Education (DHE) provides a Completion Dashboard that includes all students from 2011-2022 enrolled in public institutions who have "received a certificate, degree, or formal award approved by DHE" (DHE, 2022). This information can be disaggregated by a number of factors including degree type and program area. EE organizations can use this data analysis to track any changes in the number of students seeking degrees in environmental-related fields. Degree completion data from 2022 shows that there has been a small increase in the number of students completing environmental-related postsecondary degrees or certificates in Colorado, from 885 students in 2021 to 975 students in 2022 (DHE, 2022). The table below shows the number of students and the percentage change from 2019-2022 in enrollment in environmental-related degree programs, specifically the natural resources and conservation program.

Colorado Department of Higher Education Degree Completion Dashboard 2011–2022 Statewide Trends from 2019-2022 Relevant to Environmental-Related Degree Completion	Value	Percentage Change from 2019 to 2022
Number of students completing environmental-related postsecondary degrees or certificates in Colorado	3,620 Total Students 1,935 Resident Students	+10% +1.0%
Number of students enrolled in postsecondary degrees or certificates in Colorado in 2021	186,695	-7.4%

Recommendation for Use of Education-Related Data Sets
> Identify data from the school districts that you partner with and/or that youth participants are enrolled in. What trends do you see in attendance and graduation rates? How does it compare with the rest of the state? How has it changed, if at all, over time?
> What does student engagement in your local school districts look like? What does student achievement on CMAS consist of and how does it compare to the state as a whole?
> When engaging with school district partners, provide evidence on how EE programs can act as a pathway to support and reengage students in school.

🍃 Telling your eeStory

In order to provide organizations with an example of how to communicate evaluation efforts to a variety of stakeholders, the following section showcases sample narrative framing to tell an effective story about impact in conservation-related efforts. All examples included in these sections present fictional organizations created to provide context to the data integration process. Geographic locations and data trends are also fabricated.

Sample Story: PreK-12 Education

The Western Colorado Museum believes in preparing for the future by equipping communities and younger generations with rich experiences, deep understanding, and wide-ranging skills. In 2022, the museum provided over 200 students with afterschool programming that engaged students in over 40 hours of outdoor, authentic, project-based learning.

Appeal to the values of your audience early and often. The value of future preparation and human potential work well for education minded audiences (Moyer et al., 2020).

The Museum's afterschool programming powers up learning and sparks curiosity. The problem solving and critical thinking skills that students gain at the museum can easily flow into new contexts, powering further exploration and boosting ongoing innovation.

Use a metaphor like "Wiring Up" to help your audience make the connection between environmental education and building skills.

Consider using language related to: spark, circuitry, coordinated, linked, flow, boost, power (Moyer et al, 2020).

Students participating in the Western Colorado Museum come from the surrounding school district, in which only 6.8% of students successfully met expectations on Colorado's Statewide Assessment for science. In order to support district science achievement, the afterschool program engages students in scientific monitoring and explorations and invites students to design their own investigation by the end of the program. Programming sparked strong engagement in learning, which research links with student success. 94% of students reported increased interest in science. 84% of students reported that in the next year, they want to work harder in school. By comparison, according to the Healthy Kids Colorado Survey in 2021, only 71% of students report that they most of the time or always tried to do their best work in school over the last year. One sixth grade student captured the spirit of the program saying, "Western Colorado Museum's afterschool program helped me achieve my goals. I can be what I want to be."

Use research to make the connection between education outcomes, like student engagement, to program outcomes, like increased interest and increased intentions to work hard in school.

Impact Area: Positive Youth Development

Programs with positive youth development (PYD) outcomes are aimed at guiding young people as they grow into responsible, engaged citizens that care for the environment and their communities. Environmental and outdoor learning is one of many strategies that promotes positive youth development by nurturing a range of skills, interests, and helps to realize every single person's unique gifts in order to realize our collective human potential.

All Colorado children and youth grow into responsible, resilient, engaged citizens that care for themselves, their natural environment, and their communities.

How can environmental and outdoor learning support Positive Youth Development?

In working toward ensuring that all Colorado children and youth grow into responsible, resilient, engaged citizens that care for themselves, their natural environment, and their communities, environmental and outdoor learning is working alongside many other initiatives to achieve the following impacts:

- Increase in opportunities for civic or community engagement;
- Increase in PYD Components in participants, including: Competence, Confidence, Character, Caring, Connection, Contribution
- Increase in opportunities that provide a continuum of experience between organizations, partnerships, and other collaborations

Are your funders or other key stakeholders interested in achieving these or similar outcomes? If so, you may want to evaluate and tell the story of your positive youth development related outcomes.

Do your programs:

- Create meaningful connections to the daily lives of young people?
- Center youth and/or allow youth to lead
- Provide opportunities for teamwork and collaboration?
- Incorporate environmental action?
- Use experiential learning involving direct experience and focused reflection?
- Occur in a nature-rich and/or outdoor setting?
- Give explicit, direct instruction to develop desired, targeted knowledge, skills, and dispositions?
- Include the humanities, such as art, theater, music, and literature as program activities?

A team of researchers from Stanford University conducted a "systematic review of both PYD and environmental education literatures, in relation to each other" (Ardoin et. al, 2022). The eight practices listed above were noted as strategies and approaches that support the development of PYD in environmental education. If your program is engaged in the above, you may want to be evaluating and communicating positive youth development outcomes.

Existing Research on Positive Youth Development (PYD)

The Need for PYD

The COVID-19 pandemic exacerbated existing mental health challenges among children and adults and centered the need to promote "nurturing educational environments to meet the needs of our nation's youth" (U.S. Department of Education, 2021). Positive youth development (PYD) principles set the standard for out-of-school time programs and educators to create learning experiences that "strengthen young people's sense of identity, belief in the future, self-regulation, and self-efficacy, as well as their social, emotional, cognitive, and behavioral competence" (Centers for Disease Control and Prevention, 2022). While the need for PYD-aligned programming existed prior to the current social-emotional and mental health needs, the current climate elevates their importance (U.S. Department of Education, 2021). When programs incorporate PYD principles, youth are provided with a network of caring adults and supports that promote a feeling of safety and belonging. Programs striving to incorporate PYD can integrate the following principles, prepared by Youth Power (2022):

- **Assets:** Youth have the necessary resources, skills and competencies to achieve desired outcomes.
- **Agency:** Youth perceive and have the ability to employ their assets and aspirations to make or influence their own decisions about their lives and set their own goals, as well as to act upon those decisions in order to achieve desired outcomes.
- **Contribution:** Youth are engaged as a source of change for their own and for their community's positive development.
- **Enabling environment:** Youth are surrounded by an environment that develops and supports their assets, agency, access to services, and opportunities, and strengthens their ability to avoid risks and to stay safe, secure, and be protected and live without fear of violence or retribution. An enabling environment encourages and recognizes youth, while promoting their social and emotional competence to thrive. The term "environment" should be interpreted broadly and includes: social (e.g., relationships with peers and adults), normative (e.g., attitudes, norms and beliefs), structural (e.g., laws, policies, programs services, and systems), and physical (e.g., safe, supportive spaces).

Another framework for PYD focuses on the "Five Cs," defined as "Competence, Confidence, Connection, Character, and Caring" (Lerner et al., 2005), with later studies adding the sixth C, "Contributions" to community and civil society, as an additional layer of impact.

EE Programs and Impact

EE Programs that incorporate PYD develop youths' academic, social emotional and critical thinking skills while also cultivating "authentic care, or caring relationships that honor students' experiences of class, race, and culture" (Delia and Krasny, 2018). Programs that are intentional with their integration of PYD are more likely to connect youth learning to environmental action as they emphasize youth agency and their role in civic engagement— thereby deepening their "communication skills, feelings of self-worth, sense of social commitment and responsibility, and development of social skills and positive relationships (Riemer et al., 2014; Stephens, 2015). In addition, studies suggest that by surrounding youth with a network of support and social connections, EE programs are more likely to foster future pro-environmental behaviors and "collective environmental actions" (Chawla and Cushing, 2007). One featured example showcases an environmental action club where youth "shape their environment to meet larger social goals—such as planting a community garden to enhance community cohesion and food access—which in turn provides a setting for youth to develop competence and self-efficacy (Delia and Krasny, 2018). PYD deepens the potential impact of EE programs by creating an environment where youth feel they belong and are safe—a critical component in overriding systemic inequities and racism that has traditionally excluded youth of color from environmental learning and experiences (Delia and Krasny, 2018).

A team of researchers from Stanford University identified 60 relevant studies that deepen understanding of "what environmental education outcomes reported in the peer-reviewed literature support PYD" (Ardoin et al., 2022). They noted the connection between the two focal points, stating "Environmental education is another avenue towards PYD and, given what has often been recognized by educators, scholars, and policymakers as a natural alignment between environmental education and PYD, connecting these fields has the potential for impactful synergy" (Ardoin et al., 2022). Their meta-analysis identified eight strategies for "common educational practices that indicated potential practices supporting PYD" (Ardoin et al., 2022). These strategies and approaches were compiled in a table which is copied from the original report and included below.

Figure 8. Program Strategies and Approaches to Support PYD in Environmental Education (Ardoin et al., 2022)

Table 7. Programme Strategies and Approaches to Support PYD in Environmental Education.

(1) Creating meaningful connections to the daily lives of young people, such as through place-based and community-based approaches
(2) Developing programmes that are youth-centred and/or youth-led
(3) Providing opportunities for teamwork and collaboration
(4) Incorporating environmental action into the programme
(5) Using experiential learning involving direct experience and focused reflection
(6) Conducting part or all of the programme in a nature-rich and/or outdoor setting
(7) Giving explicit, direct instruction to develop desired, targeted knowledge, skills, and dispositions
(8) Including the humanities, such as art, theatre, music, and literature, as programme activities

Key Considerations for EE Organizations

> How do you frame the importance of integrating Positive Youth Development (PYD) for your organization's programs and initiatives to funders or other stakeholders?

> If positive youth development is one of your organization's selected outcome areas, which of the types of impact (direct or indirect) align most closely with your intended and/or actual impact on participants and communities?

> If your organization does not have extensive evaluation efforts underway, how could you utilize this research to support your organization's programs and activities?

How are we doing on positive youth development in Colorado?

The following section provides EE organizations with sources for national, state, and local data to accomplish the following: 1. Contextualize the impact of EE programs on positive youth development; 2. Expand EE organizations' ability to tell the story of how environmental and outdoor learning supports positive youth development efforts.

Positive Youth Development: Relevant Data Sets

Healthy Kids Colorado Survey

Website: https://cdphe.colorado.gov/healthy-kids-colorado-survey-data-tables-and-reports

The Healthy Kids Colorado Survey is administered by the Colorado School of Public Health (CSPH) at the University of Colorado Anschutz Medical Campus, and its purpose is "to better understand youth health and the factors that help young people make healthy choices" (Colorado Department of Public Health and the Environment, 2023). Surveys are administered on odd-numbered years to middle and high school students across the state. In 2021, 106,799 students participated with 68,281 high school students and 38,518 middle school students. Organizations can access statewide data trends and/or data from each of

the 15 Colorado regions. In the table below are metrics from the Healthy Kids Colorado Survey that pertain to the "5 C's" of positive youth development: competence, confidence, connection, character and caring. For example, the survey tool includes the "percentage of students who agree or strongly agree that they belong at their school" which aligns with the need for connection, a critical component of PYD; and the "percentage of students who most of the time or always tried to do their best work in school over the last year" pertains most closely to students' feeling of competence. The alignment of these measures with the 5 C's of PYD is made for the purposes of this report and are not part of the Healthy Kids Colorado Survey tool.

Healthy Kids Colorado Survey 2021 Statewide Trends relevant to students' connection, competence, contribution and confidence	Value	Percentage Change from 2019 to 2021
Percentage of students who agree or strongly agree that they belong at their school (connection)	64.7%	+8.0%
Percentage of students who most of the time or always tried to do their best work in school over the last year (competence)	71.1%	+2.7%
Percentage of students who participated in organized community services as a non-paid volunteer one or more times during the past 30 days (contribution)	35.9%	NA
Percentage of students who participate in extracurricular activities at school (connection)	59.6%	-7.7%
Percentage of students who usually or definitely think their grades are better than most students in class (confidence)	68.9%	+5.5 %

In addition to the survey results that align with the 5 C's of PYD, the following metric from the Healthy Kids Colorado Survey connects to students' levels of civic engagement, another population level metric of PYD. Civic engagement is defined as "working to make a difference in the civic life of our communities and developing the combination of knowledge, skills, values and motivation to make that difference" (Ehrlich, 2000). In the Healthy Kids Colorado Survey, one metric pertains to this focus area, the "percentage of students who participated in organized community services as a non-paid volunteer" (2021). The results from the 2021 survey are included in the table below.

Healthy Kids Colorado Survey 2021 Statewide Trends Relevant to civic and/or community engagement	Value	Trend
Percentage of students who participated in organized community services as a non-paid volunteer one or more times during the past 30 days	35.9%	NA

✈ School View Data Center

Website: http://www.cde.state.co.us/schoolview

The Colorado Department of Education prepares a data visualization dashboard with state, school district and school level information for a number of metrics including "student enrollment, student attendance, student conduct, historic educator effectiveness, public finance, course offerings and health and wellness programs" (2023). As part of these metrics, the CDE includes the "percentage of Colorado schools/districts that offer opportunities for civic and/or community engagement" (2022). CDE acknowledges the importance of civic and community engagement for students by stating that a "globally competitive workforce depends on an education system that provides a rich and balanced curriculum and a variety of enrichment opportunities that support the needs and nurture the strengths and interests of each student" (2023). Upon accessing the School View Data Center, organizations can select information by district and school including: course offerings and additional programs to understand what is offered to students in each geographic location. Data can be viewed by school district or aggregated for the state.

School View Data Center 2022 Statewide Trends Relevant to civic and/or community engagement	Value	Percentage Change from 2021 to 2022
Percentage of schools/districts that offer opportunities for civic and/or community engagement	74.81%	-1.05%

Recommendation for Use of PYD-Related Data Sets
> Consider which aspect of positive youth development is most critical to your organization's programs and initiatives. Do you support the development of one or more of the "5 C's" in students? Do you connect individuals to opportunities to support their communities?
> Select relevant data points to understand the baseline context of your surrounding community. Then develop metrics that allow you to track the impact on your program participants and/or your community context.

📖 Telling your eeStory

In order to provide organizations with an example of how to communicate evaluation efforts to a variety of stakeholders, the following section showcases sample narrative framing to tell an effective story about impact on efforts to promote positive youth development efforts. The metaphors and recommended language were developed in collaboration with Frameworks, a "think tank that helps mission-driven organizations communicate about social issues in ways that build public will to support progressive

change" (2023). The full Frameworks report, "How to Tell a More Effective Story About Environmental Education: A Framing Guide for Advocates, Educators, Program Leaders, & Other Communicators" was prepared in partnership with CAEE and with support from Environmental Education of New Mexico (EENM) in 2020.

All examples included in the sample stories present fictional organizations created to provide context to the data integration process. Geographic locations and data trends are also fabricated.

Sample Story: PYD

The Southern Colorado Environmental Program believes that in order to reach our collective potential, every individual must nurture a range of skills and interests to realize their unique gifts. The organization fosters these skills among participants through a three-day backpacking trip to the local Mountain View State Park with their school.

Schools participating in the backpacking trip are in CDPHE's region 6. According to the Healthy Kids Colorado Survey, only 62.8% of students agree or strongly agree that they belong at school. The Southern Colorado Environmental Program cultivates belonging, connection, and confidence through a series of activities that not only help students learn about the local ecosystem, but also fosters teamwork and collaboration throughout their trek. This outdoor program helps young people form stable, supportive relationships with adult mentors and peers, which are the roots of positive development and belonging. Their experience also nurtures students' growth in self efficacy, social and political awareness, and commitment to civic action, allowing young active and engaged citizens.

As a result of participation, 84% of participants agreed or strongly agreed that they believe in themselves. 74% of participants agreed that they feel confident that they can achieve their goals; and 82% agreed that they can make a difference in their community. One student commented," I never knew I could hike that far. This experience encourages me to try other new things."

Appeal to the values of your audience early and often. The value of future preparation and human potential work well for PYD minded audiences (Moyer et al., 2020).

Use a metaphor like "Cultivating Connections" to help your audience make the connection between environmental education and building skills.

Consider using language related to: cultivate, root systems, nurture, growth, blossom (Moyer et al., 2020)

Use research to make the connection between education outcomes, like student engagement, to program outcomes like increased interest and increased intentions to work hard in school.

Impact Area: Health and Wellness

Healthy communities are built on solid foundations, assembled by many different professional sectors, institutions, and people. A dependable foundation includes reinforcements, like access to green space, occasions to socialize, and quality learning opportunities. Environmental and outdoor learning programs supply these essential components of a strong and stable foundation, and therefore, support healthy, thriving communities. Programs with health and wellness outcomes aim to improve nutrition, increase physical fitness, reduce stress and anxiety, recover from physical or psychological trauma, and increase awareness and understanding of personal and environmental health.

Through increased safe access, connection to and comfort in the natural environment, all Coloradans are healthy and well—physically, mentally, and emotionally.

How can environmental and outdoor learning support Health and Wellness?

In working toward ensuring all Coloradans are healthy and well—physically, mentally, and emotionally through increased safe access, connection to and comfort in the natural environment, environmental and outdoor learning is working alongside many other health initiatives to achieve the following impacts:

- Increase in time in nature
- Decrease in systemic barriers to accessing nature
- Increase in understanding of the connection between healthy environment and healthy self
- Improved physical, mental and emotional health
- Decrease in stress, depression, fatigue, sedentary lifestyle and chronic illness
- Increase in access to healthy nutrition

Are your funders or other key stakeholders interested in achieving these or similar outcomes? If so, you may want to evaluate and tell the story of your health and wellness-related outcomes.

Do your programs:

- Provide participants with resources to expand their understanding of the impact of time spent outside/outdoor experiences on their health?
- Partner with organizations and school districts to increase the amount of outdoor learning experiences?
- Measure impact of participants' participation in programming on their health and well-being?

Research shows direct links between the practices above and health outcomes, such as social-emotional and mental well-being. If your program is engaged in the above, you may want to be evaluating and communicating health and wellness outcomes.

Things to Consider
> What aspects of health and wellness are most important to your audience and/or stakeholders?
> Why are health outcomes important to your organization?
> What are the goals that you share with your audience and/or stakeholders?

Existing Research on Health and Wellness

The Need for Health and Wellness

Numerous studies highlight the impact of time spent in green spaces on mental and physical health and well-being. Green spaces include "any landscape that includes some natural elements, like a backyard or even street trees" (Larson and Hipp, 2022). Research by the University of Michigan's Institute for Social Research found that children from age six to 17 spend, on average, seven minutes a day in unstructured outdoor play—a 50% decline over the last 20 years (2015). This limited exposure to green space is attributed to numerous factors, including increased use of technology and less free, unstructured time for exploration for both children and adults. Technology continues to create a substantial barrier with "average daily screen time usage reported by youth ages 13 to 18 up to 9 hr" (Rideout, 2015 as cited in Larson et al., 2018). "Nature prescription programs" have expanded across the U.S. as a response to the negative health outcomes of an increasingly sedentary and indoor population, with 40% of people in the U.S. experiencing "two or more chronic conditions such as hypertension, diabetes, and mood disorders," and the doubling of chronic diseases among children from "12.8% to almost 27% since the 1990s" (Kondo et al., 2020). Nature prescription programs consist of "either structured or unstructured formats, referring patients either to nearby parks or to formal outdoor activity programs" (Kondo et al., 2020). More time and evaluation efforts are necessary to understand the overall impact of this approach by health providers, yet the program presents a compelling "opportunity to connect patients with local parks and green spaces, and to capitalize on health benefits that could result" (Kondo et al., 2020).

In the wake of the COVID-19 pandemic and the rise of mental health needs across the U.S., the University of Colorado Boulder sought to understand "whether exposure to green space buffered against stress and distress" (Reid et al., 2022). Green space was measured using normalized difference vegetation index (NDVI)—a standardized way to measure vegetation from aerial imagery. Results supported the impact of time spent in nature as a

means to lowering anxiety and depression—with lower anxiety scores among people living in proximity to "high quality green spaces" (Reid et al., 2022). This study and the rise in awareness of the impact of green space and time spent in nature on health outcomes elevates the importance of EE programs in creating opportunities for outdoor exploration, particularly in low-income communities where tree cover is significantly lower than in affluent neighborhoods (Grinspan et al., 2020).

EE Programs and Impact

Research on the efficacy of EE programs has focused on the impact on children's knowledge, skill acquisition and environmentally friendly behaviors—with limited studies considering the impact on their overall health and well-being. A recent analysis published in the journal, *Health Equity,* examines health and educational outcomes of a 15-week nature-based environmental education program for "urban low-income, Black and Hispanic children 10–15 years of age" (Sprague et al, 2020). Children's health was evaluated using the health-related quality of life (HRQoL) domains, which include "physical health functioning, emotional health functioning, school functioning, family functioning, and overall HRQol." Prior to participation in the EE program, "54% of the children had not visited a zoo, 46% had not visited a museum, 27% had not visited a park, 53% had not visited a garden" (Sprague et al, 2020). The results showcased significant improvements in all HRQoL domains among participants from pre-intervention to post-intervention. In addition, focus groups with the participating schoolteachers and mentors on the perceived impact of the program on their students resulted in 83% agreeing that the program helped their students' mental well-being and 72% agreeing that the program helped their students' physical well-being. These results, coupled with the reality of limited time spent outdoors across the population, highlight the importance of nature-based EE programs in improving the overall health and well-being of participants, particularly among youth living in environments without accessible green spaces.

Key Considerations for EE Organizations

> How do you frame the importance of Health and Wellness as an outcome of your organization's programs and initiatives to funders or other stakeholders?
> If health and wellness is one of your organization's selected outcome areas, which of the types of impact align most closely with your intended and/or actual impact on participants and communities?
> If your organization does not have extensive evaluation efforts underway, how could you utilize this research to support your organizations' programs and activities?

How are we doing on health and wellness in Colorado?

The following section provides EE organizations with sources for national, state, and local data to accomplish the following: 1. Contextualize the impact of EE programs on health and well-being; 2. Expand EE organizations' ability to tell the story of how environmental and outdoor learning supports health and wellness efforts.

Health and Wellness: Relevant Data Sets

County Health Rankings and Roadmaps

Website: www.countyhealthrankings.org

County Health Rankings and Roadmaps (CHR&R) is a program of the University of Wisconsin Population Health Institute. CHR&R data provide a "snapshot of how health is influenced by where we live, learn, work, and play" (2022). Counties across the U.S. are ranked within two categories: 1. *Overall Health Outcomes,* which includes length of life and quality of life of residents; and 2. *Overall Health Factors,* which includes healthier behaviors, clinical care, social and environmental factors and physical environment. The Health Outcome summary score is calculated by combining the scores for Length of life (50% of total) with Quality of life (50% of total). The Health Factors score is calculated using the following weights per category: Health behaviors (30%), Clinical care (20%), Social and economic factors (40%), and Physical environment (10%). Counties are ranked within the context of their state and can also be compared to other counties across the nation.

County Health Rankings and Roadmaps 2019-2020 Statewide and National Trends relevant to overall health	Colorado	National
Average number of physically unhealthy days reported in past 30 days (age-adjusted) (2020)	2.7 days	3.0 days
Adult Obesity: Percentage of the adult population (age 18 and older) that reports a body mass index (BMI) greater than or equal to 30 kg/m2 (age-adjusted).	35.9%	32%
Index of factors that contribute to a healthy food environment, from 0 (worst) to 10 (best), includes access to healthy foods and food insecurity. (Data from 2019 and 2020)	8.5 out of 10	7.0 out of 10
Percentage of adults aged 18 and over reporting no leisure-time physical activity (age-adjusted). (2020)	17%	22%
Percentage of population with adequate access to locations for physical activity, such as living close to a park or recreational facility.	90%	84%

In addition to measures that focus on physical health and access to locations for physical activity, the CHR&R also includes a metric focused specifically on mental health of

communities by providing the "number of mentally unhealthy days reported in the last 30 days" (2021). Nature plays a critical role in improving mental health for communities, as noted by the American Psychological Association. "Exposure to nature has been linked to many mental health benefits, including improved attention, lower stress, better mood, reduced risk of psychiatric disorders and even upticks in empathy and cooperation" (2020). The following metric can help outdoor and environmental organizations understand the current conditions experienced by communities to situate the potential impact of programming on participants' mental health.

County Health Rankings and Roadmaps 2019-2020 Statewide and National Trends relevant to mental health	Colorado	National
Average number of mentally unhealthy days reported in past 30 days (age-adjusted). (2020)	4.3 days	4.4 days

Healthy Kids Colorado Survey

Website: https://cdphe.colorado.gov/healthy-kids-colorado-survey-data-tables-and-reports

The Healthy Kids Colorado Survey is administered by the Colorado School of Public Health (CSPH) at the University of Colorado Anschutz Medical Campus and its purpose is "to better understand youth health and the factors that help young people make healthy choices" (Colorado Department of Public Health and the Environment, 2023). Surveys are administered on odd-numbered years to middle and high school students across the state. In 2021, 106,799 students participated with 68,281 high school students and 38,518 middle school students. Organizations can access statewide data trends and/or data from each of the 15 Colorado regions. In the table below are metrics from the Healthy Kids Colorado Survey that pertain to behaviors associated with physical health of middle and high school students in Colorado.

Healthy Kids Colorado Survey 2021 Statewide Trends relevant to students' physical health	Value	Percentage change from 2019 to 2021
Percentage of students who ate vegetables such as green salad, potatoes, carrots, or other vegetables one or more times per day in the last seven days (2021)	37.7%	NA
Percentage of students who could walk or ride a bike, scooter, or skateboard to school if they wanted to. (2021)	53.8%	+5.0%
Percentage of students who were physically active for a total of 60 minutes per day for 5 of the last 7 days (2021)	49%	+1%

In addition to metrics that increase understanding of students' physical well-being, the Healthy Kids Colorado Survey has several questions that can indicate current levels of students' mental health. The table below includes the spectrum of mental health needs among students, including the "percentage of students who agree that their stress level is manageable most days" and the "percentage of students who felt so sad or hopeless almost every day for two weeks or more…that they stopped some usual activities" (2021). The survey also asks about the extent of students' support networks by tracking the "percentage of students who have an adult they go to for help with a serious problem."

Healthy Kids Colorado Survey 2021 Statewide Trends relevant to students' mental health	Value	Percentage change from 2019 to 2021
Percentage of students who agree that their stress level is manageable most days. (2021)	53.2%	NA
Percentage of students who felt so sad or hopeless almost every day for two weeks or more in a row during the past 12 months that they stopped some usual activities (2021)	24%	-10.7%
Percentage of students who have an adult they go to for help with a serious problem.	73.5%	72.7%

Lastly, the Healthy Kids Colorado Survey tracks screen time among students, which can be correlated with a decrease in time spent outdoors. The table below includes the "percentage of students who spent 3+ hours in front of a TV, computer, smart phone, or other electronic device for something other than school work" in order to understand the extent to which students are on electronic devices throughout their day. Environmental and outdoor learning programs may use this data in order to position their programs as a means to decrease screen time. Programs that utilize technology in the outdoors can also consider this data as evidence they are meeting students where they are to increase their engagement in learning.

Healthy Kids Colorado Survey 2021 Statewide Results relevant to students' time spent in nature	Value
Percentage of students who spent 3+ hours in front of a TV, computer, smart phone, or other electronic device for something other than school work (2021)	74.0%

📍 Colorado's State Outdoor Recreation Plan

Website: https://cpw.state.co.us/aboutus/Pages/SCORP.aspx

Every five years, Colorado Parks and Wildlife (CPW) leads development of a comprehensive outdoor recreation plan to maintain eligibility for funding through the Land and Water Conservation Fund, and to inform additional investments from other federal, state, local and private programs. As part of the planning process, Colorado Parks and Wildlife conducts a statewide survey of outdoor recreation, including barriers to participation. In 2019, the biggest barrier to participation in outdoor recreation in Colorado was time, with 56% of respondents indicating that time is a barrier. The table below shares metrics that pertain to individuals' access to nature including the degree to which potential barriers are a moderate or major problem such as having "no one to go with," not having "enough time due to work/family/other commitments," and/or the high cost of either equipment/gear or entry fees.

State Outdoor Recreation Plan, 2019 Public Survey 2019 Results relevant to barriers in access to nature	Value
Percent of people for whom limited access to outdoor recreation areas is a moderate or major problem.	26.3%
Percent of people for whom no one to go with is a moderate or major problem.	16.9%
Percent of people for whom not enough time due to work/family/other commitments is a moderate or major problem.	56.1%
Percent of people for whom cost of equipment/gear needed to participate is a moderate or major problem.	21.5%
Percent of people for whom outdoor recreation areas are too crowded is a moderate or major problem.	44.6%
Percent of people for whom lack of or high costs associated with transportation is a moderate or major problem.	12.2%
Percent of people for whom outdoor recreation areas are not developed enough (e.g., limited picnic tables, restrooms, etc.) is a moderate or major problem.	12.2%
Percent of people for whom concern about safety/crime in outdoor recreation areas is a moderate or major problem.	11.1%
Percent of people for whom not enough information about outdoor recreation is a moderate or major problem.	11.5%
Percent of people for whom high costs associated with entrance, parking, or other user fees is a moderate or major problem.	33.5%

ParkServe

Website: https://www.tpl.org/parkscore

Trust for Public Land maintains a comprehensive database of local parks in nearly 14,000 cities, towns and communities. The analysis identifies physical barriers such as highways, train tracks, and rivers without bridges and identifies the locations that the park can be accessed within a ten-minute walk. Cities are evaluated with a "ParkScore" which is generated based on ratings across five categories including: equity, access, investment, amenities, and acreage. Data can be accessed by city. Although a number of Colorado communities are included, not all communities have been analyzed. There is no statewide summary of park access.

Recommendation for Use of Health-Related Data Sets

> If Health and Wellness is one of your organization's outcome areas, identify data from the data sets that provides a more detailed snapshot of trends in your surrounding community. How do these numbers present the need for your program?

> How have health trends changed over time, and/or how do trends in your community compare with the rest of the state?

> If your community ranks highly in terms of health outcomes and factors, how does access to EE programs support these outcomes? And conversely, if your community ranks lower in any category, how does connection to your programs support community health?

Telling your eeStory

In order to provide organizations with an example of how to communicate evaluation efforts to a variety of stakeholders, the following section showcases sample narrative framing to tell an effective story about impact on efforts to promote community health and well-being. The metaphors and recommended language were developed in collaboration with Frameworks, a "think tank that helps mission-driven organizations communicate about social issues in ways that build public will to support progressive change" (2023). The full Frameworks report, "How to Tell a More Effective Story About Environmental Education: A Framing Guide for Advocates, Educators, Program Leaders, & Other Communicators" was prepared in partnership with CAEE and with support from Environmental Education of New Mexico (EENM) in 2020.

All examples included in these sections present fictional organizations created to provide context to the data integration process. Geographic locations and data trends are also fabricated.

Sample Story: Health and Wellness

By actively engaging with the environment, the overall health of the Peak City community is strengthened. In 2022, the Central Colorado Community Center supported over 150 residents in educational programming, including how to snowshoe and how to protect and care for their mountain community.

Data show only 52% of people in Peak City have adequate access to locations for physical activity, and according to the Healthy Kids Colorado Survey, fewer than half of students in the region were physically active for more than 60 minutes in five out of seven days.

Central Colorado Community Center wants to ensure that the community has access to the conditions to build a strong foundation for health and well-being. To that end, Central Colorado Community Center develops programming that expands residents' access to nature, opportunities to socialize, and quality learning experiences. Peak City families can learn more about the mountain community where they live and can participate in over two hours of physical activity learning to snowshoe.

As a result of participating, 74% of participants agreed or strongly agreed that want to spend more time outdoors, and 82% of participants want to visit the Peak City Natural Area again.

Appeal to the values of your audience early and often. The value of future preparation and human potential work well for health minded audiences. (Frameworks)

Use research to make the connection between health outcomes, like increased time in nature and increased nature connection.

Impact Area: Social Justice

Programs with a focus on social justice outcomes seek to increase access to outdoor experiences, improve urban green space, and develop and support environmental educators and leaders from traditionally underrepresented groups. People thrive when they are encouraged to experience a range of educational settings and allowed to discover how they learn best. Environmental and outdoor learning provides essential opportunities for all Coloradans.

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

How can environmental and outdoor learning support Social Justice?

While there are many ways to support different aspects of social justice through outdoor and environmental learning, one pathway is by ensuring that all Coloradans have access to and opportunity to experience and learn in the outdoors. Environmental and outdoor learning is working alongside many other social justice initiatives to achieve the following impacts:

- Decrease in barriers to nature access
- Use of outdoor spaces reflect the demographics of the community
- Increase in commitment to DEI within organizations
- Increase in communities with access to safe, natural and healthy environments
- Increase in Coloradans who feel welcomed and comfortable in outdoor spaces

> Are your funders or other key stakeholders interested in achieving these or similar outcomes? If so, you may want to evaluate and tell the story of your social justice related outcomes.

Do your programs:

- Provide participants with accessible learning experiences that increase their sense of belonging and comfort in the outdoors?
- Partner with organizations and/or schools to understand the importance of diversity, equity and inclusivity in environmental education?
- Measure impact of participants' participation in programming on their access to, and comfort in, outdoor spaces?

Research shows direct links between the practices above and promoting inclusivity, particularly for groups that have been systematically excluded from environmental education and outdoor learning opportunities. If your program is engaged in the above, you may want to be evaluating and communicating social justice outcomes.

Existing Research on Social Justice

The Need for Social Justice in EE

Traditional outdoor learning and EE programs were founded on "White, male, upper-middle class, and able-bodied histories" which have "excluded or, at best, marginalized women, the poor, people of color, and people with disabilities" (Warren et al, 2014). The problematic origins have reinforced a history of violence and oppression against people of color as Black Americans were "oppressed and subjected to violence on the land; Latinos have reported feeling unwelcome in outdoor areas in the U.S.; and Native Americans have seen their own traditions co-opted by many outdoor programs" (Warren et al, 2014). In addition to the foundational inequities of EE, community infrastructure decisions have historically been made to benefit wealthy neighborhoods with tree canopy varying widely based on neighborhood. For example, residents in San Francisco's affluent Seacliff neighborhood "enjoy a leafy 30% canopy cover, while historically lower-income and immigrant communities in the Mission and Outer Sunset neighborhoods have a scant 7.5% and 5% tree canopy cover, respectively" (Grinspan et al., 2020). This inequity in access to green space impacts residents' mental and physical health as the "amount of green space and big trees are big factors in heat variance, and areas with trees are much cooler than areas without trees—by 10 or even 15 degrees" (Medium, 2022).

EE Programs and Impact

The historic exclusion and oppression of marginalized groups has led to the "adventure gap" or "nature gap"—with limited participation of people of color in outdoor spaces (CNN, 2021). These gaps are compounded by the "persistent feeling…that being involved with the environment is something White people do" (Finney, 2014). This gap impacts the amount of time youth spend in the outdoors as research illustrates that "Racial and ethnic minority youth (and adults) spend less time in natural outdoor settings and face more constraints to nature-based recreation than their White counterparts" (Byrne & Wolch, 2009 as cited in Larson et al., 2019). The lower amount of time spent in the outdoors is linked to an increase in screen time—as "minority youth—particularly African Americans—are also significantly more likely than White youth to consume electronic media" (Nielsen Company, 2017 and Rideout et al., 2010 as cited in Larson et al., 2019). In order to expand access to outdoor learning and EE programs, the underlying racism and eugenicist attitudes that

characterized "the urban environment as dirty, unhealthy, filled with lots of immigrants and people of color" and green spaces as "clean, quiet and for White people" have to be recognized and intentionally uprooted (CNN, 2021).

EE program models such as the Northern New Mexico Climate Change Corps (CCC) showcase a promising pathway for engaging and supporting students who have been traditionally excluded from outdoor learning spaces (Zanetell et al., 2022). The Northern New Mexico Climate Change Corps (CCC) addresses the gap in graduates in natural resources fields, particularly among students of color by connecting community college students, who are predominantly Hispanic or Native American, to a 4-year university to facilitate STEM degree completion and job placement (Zanetell et al, 2022). A case study of CCC identified the following program components as critical to supporting and engaging students: "internships, academic advising, mentoring, professional development, academic stipends, research experiences, degree completion plans, math support, peer support, and field trips" (Zanetell et al, 2022). Program models such as CCC are needed to alter the lack of diversity among environmental professionals, with 16% of staff among major environmental organizations being people of color—and people of color representing 38% of the national population (Resources Radio, 2020).

In addition to learning from program models that partner successfully with traditionally excluded groups, Oregon Outdoor School created a suite of tools including the Cultural Responsiveness Self-Evaluation Tool to equip EE organizations with resources to evaluate the extent to which their programming and practices are equitable, diverse and inclusive. The tool allows EE and/or outdoor school program staff to indicate whether programming is "absent, emerging, or highly effective" within each of the themes of Equity, Diversity and Inclusion. Upon completion, this process then "supports outdoor school programs in developing improvement plans for furthering Equity, Diversity and Inclusion (EDI)" (Oregon Outdoor School, 2022). Figure 9 below depicts the evaluation cycle for one of the core themes and how each organization and team can move through each phase of the process outlined in the Cultural Responsiveness Self-Evaluation Tool.

Figure 9. The Evaluation Cycle for Equity
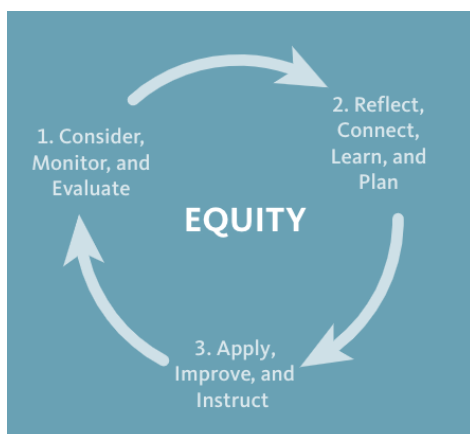
While the history of exclusion and racism within outdoor learning requires significant efforts to repair and amend power dynamics, EE programs can play a significant role in building learning experiences where students of color, students with disabilities and other marginalized groups are seen, valued and engaged in collaborative learning. These efforts will lead to greater representation of excluded groups in natural resource degree programs and careers.

> **Key Considerations for EE Organizations**
> - How do you frame the importance of social justice as an outcome of your organization's programs and initiatives to funders or other stakeholders?
> - If social justice is one of your organization's selected outcome areas, how do your programs intentionally engage diverse and traditionally excluded participants and communities?
> - If your organization does not have extensive evaluation efforts underway, how could you utilize this research to support your organization's programs and activities?

How are we doing on social justice in Colorado?

The following section provides EE organizations with sources for national, state, and local data to accomplish the following: 1. Contextualize the impact of EE programs on social justice; 2. Expand EE organizations' ability to tell the story of how environmental and outdoor learning supports social justice efforts.

Social Justice: Relevant Data Sets

Colorado's State Outdoor Recreation Plan

Website: https://cpw.state.co.us/aboutus/Pages/SCORP.aspx

Every five years, Colorado Parks and Wildlife (CPW) leads development of a comprehensive outdoor recreation plan to maintain eligibility for funding through the Land and Water Conservation Fund, and to inform additional investments from other federal, state, local and private programs. As part of the planning process, Colorado Parks and Wildlife conducts a statewide survey of outdoor recreation, including barriers to participation. In 2019, the biggest barrier to participation in outdoor recreation in Colorado was time, with 56% of respondents indicating that time is a barrier. The table below shares metrics that pertain to individuals' access to nature, including the degree to which potential barriers are a moderate or major problem (such as having "no one to go with," not having "enough time due to work/family/other commitments" and/or the high cost of either equipment/gear or entry fees).

Colorado Statewide Outdoor Recreation Plan, Outdoor Recreation Public Survey Results, 2018	Value
Percent of people for whom limited access to outdoor recreation areas is a moderate or major problem.	26.3%
Percent of people for whom no one to go with is a moderate or major problem.	16.9%
Percent of people for whom not enough time due to work/family/other commitments is a moderate or major problem.	56.1%
Percent of people for whom cost of equipment/gear needed to participate is a moderate or major problem.	21.5%
Percent of people for whom outdoor recreation areas are too crowded is a moderate or major problem.	44.6%
Percent of people for whom lack of or high costs associated with transportation is a moderate or major problem.	12.2%
Percent of people for whom outdoor recreation areas are not developed enough (e.g., limited picnic tables, restrooms, etc.) is a moderate or major problem.	12.2%
Percent of people for whom concern about safety/crime in outdoor recreation areas is a moderate or major problem.	11.1%
Percent of people for whom not enough information about outdoor recreation is a moderate or major problem.	11.5%
Percent of people for whom high costs associated with entrance, parking, or other user fees is a moderate or major problem.	33.5%

🚀 Trust for Public Land: ParkScore Rating Tool

Website: https://www.tpl.org/parkscore

Trust for Public Land has established a scoring system to evaluate "local parks in nearly 14,000 cities, towns and communities" based on 14 measures across five categories including acreage, investment, amenities, access, and equity. Data can be accessed by city. Although a number of Colorado communities are included, not all communities have been analyzed and the data cannot be disaggregated by state. The figure below showcases a score overview for Denver, Colorado.

Figure 10. Sample ParkScore overview for Denver, Colorado. Generated by ParkScore, 2023
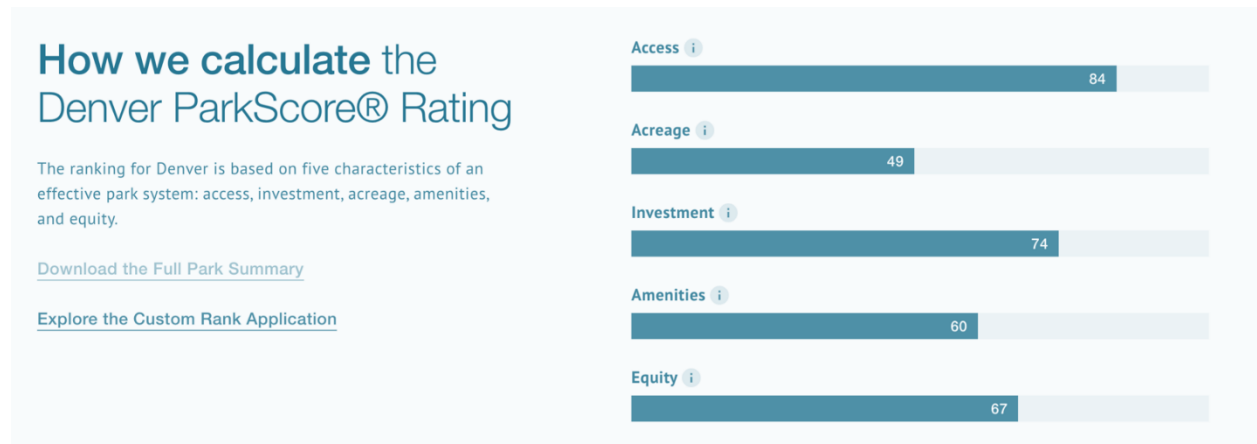
Recommendation for Use of Social Justice-Related Data Sets
- If Social Justice is one of your organization's outcome areas, identify data from the data sets that provides a more detailed snapshot of trends in your surrounding community. How do these numbers present the need for your program?
- Determine which of the outcomes aligns most closely with your efforts. For example, do you increase access to nature for all demographics in your surrounding community? Then pair that with an understanding of how accessible nature is to the public by looking at the community ParkScore rating. Use this measure to explain the need for your efforts.

Telling your eeStory

In order to provide organizations with an example of how to communicate evaluation efforts to a variety of stakeholders, the following section showcases sample narrative framing to tell an effective story about impact on efforts to promote community health and well-being. The metaphors and recommended language were developed in collaboration with Frameworks, a "think tank that helps mission-driven organizations communicate about social issues in ways that build public will to support progressive change" (2023). The full Frameworks report, "How to Tell a More Effective Story About Environmental Education: A Framing Guide for Advocates, Educators, Program Leaders, & Other Communicators" was prepared in partnership with CAEE and with support from Environmental Education of New Mexico (EENM) in 2020.

All examples included in these sections present fictional organizations created to provide context to the data integration process. Geographic locations and data trends are also fabricated.

Sample Story: Social Justice

Eastern Colorado Environmental Center is working to ensure all kids in Tree County, no matter where they live, have the opportunity to participate in environmental and outdoor learning field trips. Field trips to visit the local shortgrass prairie reserve and local reservoir are like charging stations that power up kids learning about the world around us. We know that some families in Tree County benefit from high-wattage areas that provide lots of energizing opportunities, while other families, many in the rural areas of the county, may have very little to plug into. 33.5% of Coloradans have identified cost as a barrier to participate in outdoor recreation. In order to strengthen access to outdoor opportunities in Tree County and boost learning outcomes for all students, Eastern Colorado Environmental Center offers youth scholarships to eliminate barriers for participation.

The idea of Inclusive Opportunity (all kids) can help avoid activating the default public assumption that some groups are "needier" than others, and instead calls attention to the ways that our institutions can better serve us all.

Using a Metaphor like "Charging Stations" can help explain structural causes of education disparities and help people see how systemic improvements can benefit all communities.

This report expands the scope of evaluation resources provided through CAEE—resources that include training on the fundamentals of evaluation and survey templates to expand organization-led evaluation efforts. Our recommendation is to select the population-level outcomes that most closely align with your organization's efforts, utilize the literature review to ground your outcomes in research (for grant purposes or other stakeholder engagement efforts), and use the databases to find data points that inform the "what" of your context and community and the "why" for your efforts. Then combine these data points within the recommended narrative framework that effectively tells your organization's story to a broader audience. CAEE will support organizations in the integration of population level data alongside organization-led data—in the hopes of building and sustaining robust collective evaluation efforts across the environmental learning community.

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