



Environmental Literacy for Illinois - A Framework
2020-2021

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Introduction and EL4IL Overview

EL4IL Mission:

The mission of the Illinois Statewide Environmental Literacy Framework (EL4IL) is **to advance environmental literacy to create a more just, equitable and sustainable future for all residents of Illinois**. Equitable environmental literacy is grounded in an understanding that everyone has a right to environmental education and a healthy and just environment and those that have been historically excluded and impacted from dominant environment education are at the forefront of equity and justice. EL4IL aims to expound on the idea of environmental literacy and outline a multitude of resources, best practices and examples for how communities, educators and individuals can work together to create environmental education opportunities that foster the advancement of environmental literacy. Goals have been set to guide the development of environmental literacy throughout the state but the exact methods for achieving those goals will look different for each educator, organization and community.

Advancing environmental literacy can lead to a great deal of positive environmental outcomes. It can improve overall sustainability, build community resilience to climate change and other environmental impacts, create more just access to the outdoors, and increase equitable access to quality environmental education programming. The authors hope that by creating this Framework, leaders throughout the state can gain guidance and resources on how to implement programming that will lead to increased environmental literacy.

The EL4IL Framework does not touch on every aspect of environmental education program development or implementation. It provides guidance on key areas of significance while providing flexibility for educators to build out specific programs and implementation strategies based on their needs. Not all of these strategies and ideas may be possible for every environmental education program in Illinois, but the information is provided to increase educator understanding and build capacity for the field as a whole.

EL4IL Content Area Goals:

1. Provide all IL residents with a clear understanding of what environmental literacy means and the importance to our communities of advancing environmental literacy.
2. Provide clear guidance on culturally relevant and age appropriate approaches in advancing environmental literacy and current research in trends and implementation strategies.
3. Provide Illinois educators with training and resources to build knowledge of effective programming on climate change, including an understanding of environmental justice and climate justice issues.
4. Provide clear guidance on best practices in building partnerships between organizations, educators and communities to enable the sharing of resources, knowledge and abilities throughout Illinois.
5. Ensure that the plan for environmental literacy in Illinois centers equity and inclusion

6. Provide educators, organizations and communities with the resources and knowledge needed to effectively evaluate their own success in the implementation of environmental education and the progress of learners.
7. Provide a list of resources, organizations and institutions available to assist in advancing environmental literacy.
8. Showcase Illinois environmental education stories that demonstrate the varying strategies for which the advancement of environmental literacy can take place.

1. How this Document was Developed

In 2019 the Environmental Education Association of Illinois (EEAI), with partner organizations Chicago Wilderness, the Field Museum, and Illinois Environmental Protection Agency, set out to rethink and rewrite the Illinois Statewide Environmental Literacy Plan. With funding from Pisces Foundation, the original plan was to host an Environmental Education Leaders Summit in the Spring of 2020 for intense learning around justice, diversity, equity and inclusion in the field of environmental education in Illinois; this would be followed by two days of strategic planning and development of the new statewide environmental literacy plan. When the pandemic hit in March of 2020 this plan had to be completely adjusted.

In August of 2020 a three-day virtual summit brought together representatives in environmental education from more than 40 organizations from around the state to kick off the EL4IL Project. These partners participated in justice, equity, diversity, and inclusion (JEDI) workshops facilitated by Cream City Conservation Consulting. These workshops provided the foundational work in understanding bias, systemic racism and historical systems of oppression.

Following these trainings, the EL4IL Project partners held 8 focus group sessions, open to all of these same environmental education leaders, to gain feedback on the previous IL environmental literacy plan, EL4IL 2010, and think about how to advance environmental literacy in a more equitable way. Over 30 people attended these sessions and provided valuable feedback to project leaders. These meetings resulted in a set of conclusions about what would need to be included within the new EL4IL. Some of the main takeaways from these focus group sessions identified the following needs:

1. A clear definition of environmental literacy.
2. Resources and explanations for how to increase environmental literacy in a wide variety of communities that vary in size, location, demographics and socio-economic status.
3. The inclusion of a wider range of environmental issues and guidance on how to provide effective programming on those topics.
4. A greater focus on justice, equity, diversity, inclusion and accessibility as they pertain to advancing environmental literacy in Illinois.
5. A clear plan for promotion of the revised EL4IL.
6. The involvement of a wide range of voices in the writing process, review of the document and promotion of the final EL4IL.

With these six main takeaways, partners determined that the revised EL4IL should be a guiding document that presents the essential elements needed to achieve environmental literacy and possible steps to get there. This Framework is specific in what environmental literacy entails,

but more open-ended on how schools, communities and individuals can achieve it. The hope for the 2021 EL4IL is that it can be picked up by any educator, administrator, organization or community member and act as a reference in increasing environmental literacy in Illinois. In November 2020, a writing committee was established to work on the drafting of the EL4IL Framework. The committee was made up of 19 individuals from a range of areas within the field of environmental education. A first draft was developed, feedback from the whole group gathered and then a smaller writing committee convened to address the necessary edits. Then in early 2021, an additional review committee was established that would focus specifically on reviewing the Framework in regards to justice, equity, diversity, inclusion and accessibility. The recommendations and edits from these two small groups were combined to develop a second draft that was then released to the public for review.

2. EL4IL History

The development of Illinois' statewide environmental literacy plan began in 1995 under the direction of the Illinois State Board of Education. In 1999, the Illinois Environmental Education Advancement Consortium and the Environmental Education Association of Illinois took the lead on revising and re-releasing the plan. Another update and revision was released in 2005. Then in 2010 a collaborative effort from the Illinois State Board of Education, Illinois Environmental Protection Agency and Illinois Department of Natural Resources led to another full revision that included a larger focus on non-formal implementation of environmental education. A full history of these documents is provided in Appendix B. To view each of the previous versions of the EL4IL please visit the [EEAI Website](#).

Chapter1/Environmental Literacy

1. What is environmental literacy? A definition for Illinois.

Environmental literacy is

- the understanding of our environment (who and what surrounds us)
- the building of relationships between the human and non-human
- the ability to connect actions and interactions as interrelated, with humans as part of the natural world, not over it.

Environmental literacy is important so that we might better understand what systemic impacts, as well as individual and communal endeavors, have on the health of the environment and ourselves.

Equitable environmental literacy can begin with our individual cultures, identities, abilities, and interests and our own connection to the environment. It can expand to encompass the world we live in and differs across Illinois, between households, based on each of our unique lived experiences. Equitable environmental literacy is grounded in an understanding that everyone has a right to environmental education and a healthy and just environment.

EL continues to be cultivated through diverse experiences, different forms of media, scientific investigation, indigenous ways of knowing, and social-ecological systems thinking, among other interdisciplinary fields of study. By being environmentally literate, we build an awareness, appreciation and love for the natural world. We look closely at the roots of environmental injustice, environmental degradation and the systems that cause these issues to persist. We understand the role we play in environmental and community issues and take responsible individual and civic action. We understand that taking direct action or advocating for policy changes within our communities can improve the health of the environment and people. Civic engagement towards an environmentally just world requires the expertise and tools to make informed decisions and take responsible action; a knowledge of diverse environmental concepts and issues; a disposition towards improving the wellbeing of other individuals, societies, and the global environment (Hollweg et al. 2011, 15–16); and willingness to act to improve the environment.

Ultimately, expanding environmental literacy in Illinois depends on organizations and institutions removing barriers to accessing the natural world, providing experiences to deepen connection to the environment, integrating tools to maintain curiosity to learn, and encouraging new voices to share their story and knowledge with others. However there is no set way in which these goals can be accomplished. Educators and advocates for environmental literacy will have to listen intently to their community members, learn from the wide variety of perspectives that exist and work collaboratively to co-author solutions that address the needs and desires of their unique community.

JEDIA Consideration:

A stated goal of the IL Environmental Literacy Framework is to include a clear definition of environmental literacy. While this can be beneficial, an inclusive approach allows folks to

co-define environmental literacy, broadens the definition, and not view it as narrow nor progressive. Environmental literacy alone doesn't improve any conditions, disparities, structural racism, or policy etc. The overarching goal of environmental literacy is increasing awareness, naming the nexus between behavior and impact, so people will make informed decisions concerning the environment. So, inherently an understanding of the role of dominant cultural narratives, environmental racism across issues, and other intersectionality lenses is vital to strive for environmental justice. In addition, the idea of binary thinking of either being illiterate (and assuming that is the norm) or literate (assuming a particular abled and civically engaged identity) is not inclusive. Finally, the idea of individual behavior changes (which is often the burden of those who did not cause the environmental injustices) is not a predominant outcome that should be prioritized over systemic change.

2. Key Tenets of Environmental Literacy

There is no single path to achieving environmental literacy. By focusing on the following skills, knowledge, beliefs, and actions, however, educators and learners will advance environmental literacy for themselves and their community.

1. Understanding of Community

It is essential to understand the environmental conditions, both past and present, of one's community. This may include but is not limited to:

- Native people's knowledge and relationship to land, built environmental changes over time and historical knowledge of how the community has used natural resources.
- A clear understanding of how residents within a community connect with and utilize the local environment.
- Access to and changes in access to natural resources.

2. Awareness of the Environment

A person's local environment may be very different depending on the area of Illinois in which one is located. It is essential to have an awareness of what makes up your environment; the people, built environment, the wildlife, plants, waterways, land and air. This awareness is what fosters curiosity, allows for effective learning and a deeper understanding of those local systems.

3. Connection with the Environment

Whether it comes from days spent on a river as a child, exploring tree roots in your yard, or sitting on a porch and watching the sun set or an understanding of the essential elements the environment provides us for sustaining life, a general appreciation of the local environment is a key element of environmental literacy.

4. Understanding of Environmental Justice

The environment is not the same for all people in this country. The US has a long history of racism and exclusion, and its legacy of environmental racism has meant that some communities (including low-income and communities of color) are bearing the brunt of this country's environmental problems and pollution. An understanding of the roots of

and the current environmental injustices that are happening to people in Illinois is critical in breaking down the barriers to creating a just environment for all of Illinois.

5. Civic Engagement focused on Environmental Action

Self-efficacy and an acknowledgement that one's voice and actions matter, helps an individual move from knowledge to responsible environmental action. Being civically engaged in environmental action, especially when done in the middle youth ages, can provide the necessary skills, knowledge and motivation to take responsible environmental action in the future.

6. Access to Climate Change Education and an Understanding of Climate Science

Climate science education can lead to climate literacy which includes a basic understanding of the climate system, including the natural and human-caused factors that affect it; awareness of the fundamental relationship between climate and human life and the many ways in which climate has always played a role in human health. These basic understandings are essential to being able to take responsible action on climate related issues.

7. Understanding of Sustainability, Adaptability and Resilience

Creating an environmentally just and sustainable Illinois calls for an understanding of one's role in community sustainability initiatives, adaptability and community resilience. Baseline knowledge on what these concepts mean, community implementation and individual responsibilities toward these goals are critical.

Chapter 2/Justice, Equity, Diversity, Inclusion and Accessibility In Environmental Literacy

Successful environmental literacy starts with an understanding of social equity as a path to civic engagement and it includes a variety of engagement opportunities and actions such as connection to land, conservation, stewardship, and environmental and climate justice efforts.

a. Key Definitions

Diversity -

There are countless visible and invisible facets of diversity. The concept of diversity encompasses acceptance and respect. It means understanding that each individual is unique, and recognizing our individual differences. These can be along the dimensions of race, ethnicity, gender, sexual orientation, socio-economic status, age, physical abilities, religious beliefs, political beliefs, or other ideologies. It is the exploration of these differences in a safe, positive, and nurturing environment. It is about understanding each other and moving beyond simple tolerance to embracing and celebrating the rich dimensions of diversity contained within each individual.

The lack of diversity within the environmental field, including environmental education has been brought to light over the last several years. Beginning with Dorceta Taylor's The State of Diversity in Environmental Organizations report in 2014 and the ongoing efforts of Green 2.0, diversity remains an issue as organizations do not operationalize practices beyond performative statements and goals and continue to falsely assume people of

color do not want to pursue it as a field (Taylor, 2014; ExecutiveSummary-Diverse-Green.pdf (vaipf.org) and (Green 2.0, 2018-2021; <https://diversegreen.org/>).

Equity -

Environmental equity describes a country, or world, in which no single group or community faces disadvantages in dealing with environmental hazards, disasters, or pollution. It also means access to environmental benefits, regardless of income, race, and other characteristics. Historical inequities must be acknowledged and addressed while foregrounding those most marginalized by environmental literacy.

Environmental equity is a basic human right.

A Lawrence Hall of Science and Youth Outside study Examining Equitable and Inclusive Work Environments in Environmental Education “findings reveal a clear disconnect in the way that environmental education organization leaders and educators of color define, experience, and intend to prioritize equity, inclusion, and diversity”. For example, organizational leaders focused on efforts that were for “all”, whereas people of color focus group participants or educators suggested efforts require understanding systemic oppression, power, and privilege. Organizations should consider the intentionality of their practices and be responsive to their staff of color, their intersectionality and that of youth. In addition, some suggestions include adopting fair wages, offering professional development opportunities to staff of color, creating affinity spaces, and incorporating participatory practices in creating curriculum and environmental literacy plans (Romero et. al, 2019;

Examining-Equitable-and-Inclusive-Work-Environments-in-Environmental-Education.pdf (beetlesproject.org).

Inclusion -

Inclusion includes celebrating, valuing and amplifying perspectives, voices, styles, and identities that have been marginalized. An example of a local program that is inclusive is Environmentalists of Color. Environmentalists of Color (EOC) is a Chicago-based member-driven catalyst for racial equity in the environmental field addressing the current and historical exclusion of BIPOC folks. Virtually and in-person, EOC holds safe space to amplify, connect, and support members in this network to be leaders and thrive in this field. The network uses an asset based approach to inclusion and equity by centering and celebrating its members. EOC connects members of various disciplines, builds resilience, and cultivates future leaders. Membership in EOC is free and open to individuals who self-identify as a person of color and an environmentalist. Allies and those wishing to reach out to members and share employment and other opportunities engage via EOC’s LinkedIn group (Environmentalists of Color, 2021: Environmentalists of Color (eocnetwork.org).

Accessibility -

Accessibility in the context of environmental literacy means all individuals have the same ability to utilize resources regardless of race, religion, gender or sex, physical and mental capabilities. Many areas lack environmental education programs, knowledge of how to access these resources or have been excluded from access for multiple reasons (cost, safety, additional learning time, loss of field trip privileges as students, transportation, etc.). In addition, ableism, discrimination in favor of able bodied people has further marginalized groups from access to environmental literacy in delineating an identity that can hike and otherwise physically or cognitively practice certain environmental behaviors. In considering ableism, it is important to note that disabled people are more drastically affected by climate change. Recently, with the need for on-line learning, accessibility of environmental education has shifted and with the need for technological devices and fees for online programs, which has further perpetuated the disparities of access to environmental literacy resources.

Environmental Justice -

Environmental justice calls for the education of present and future generations which emphasizes social and environmental issues, based on experiences and appreciation of diverse cultural perspectives. Moreover, environmental justice affirms the sacredness of Mother Earth, ecological unity and the interdependence of all species.

b. Environmental justice issues facing Illinois

The Illinois Commission on Environmental Justice states that to achieve an environmentally just state “no segment of the population, regardless of race, national origin, age, or income, should bear disproportionately high or adverse effects of environmental pollution” ([IL EPA Commission on Environmental Justice](#)). Furthermore the US Environmental Protection Agency states that “Environmental justice (EJ) is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies” (USEPA, [Environmental Justice](#)). For Illinois to truly be environmentally just, a combination of both of these statements must be reached. There continues today an unfair burden of environmental issues impacting people of color and low-income communities, while these communities have also been historically excluded from the decision making and enforcement of environmental laws in the state.

- Northeast Illinoisans have seen [drastic increases in water rates and shutoff notices](#) over the last decade while also facing [shoreline erosion](#).
- Southern Illinoisans have been [plagued with flooding](#) due to inadequate stormwater infrastructure.
- Rural Illinoisans struggle with [nutrient pollution](#) in their ground water, lakes, and streams.
- And as the state with the most lead service lines in the country, [estimated 730,000 to 1.4 million lead service lines](#), essentially every Illinoisan is at

risk of exposure to lead-contaminated drinking water – [Black and Latinx Illinoisans are twice as likely to live in communities with lead service lines](#) than white residents. However, these threats should also be seen as significant opportunities for Illinois to be a national leader on water infrastructure and innovation (Jeremy Orr, Natural Resources Defense Council, Senior Attorney).”

- The [Environmental Justice for All Act](#)

To see and understand environmental justice issues faced by local Illinois communities, educators and organizations are encouraged to utilize the [US EPA’s EJScreen Program](#). This mapping and screening tool combines local demographic information with environmental data.

JEDIA Consideration

There is an opportunity to further elaborate on what is meant by equity in environmental literacy. Equity can be further discussed as an outcome as well as a process that includes specific strategies to advance each of access, inclusion, and justice that can be incorporated into environmental education by centering learners and connecting to community priorities. For example, what specific strategies can contributing organizations commit to removing barriers to environmental literacy? What can contributing organizations commit to to advance climate justice etc.? Whose voices and ideas are centered? For example, replacing the dominant cultural narrative about who the outdoors is for with a new narrative that access to nature is a human right or nature having its own rights.

Chapter 3/Advancing Environmental Literacy through Environmental Education

Goal: Provide clear guidance on culturally relevant and age appropriate approaches in advancing environmental literacy and current research in trends and implementation strategies.

1. Introduction

Connection Between Environmental Literacy and Environmental Education

Environmental education (EE) connects us to the world around us, teaching about both natural and built environments and raising awareness of the issues impacting the environment upon which we all depend, as well as actions we can take to improve and sustain it. Whether we bring nature into the classroom, take students outside to learn, or find teachable moments on a nature walk, EE has benefits for youth, educators, schools, and communities.

Benefits of Environmental Education

By incorporating EE practices into the curriculum, teachers can integrate science, math, language arts, studies, and the fine arts into one rich lesson or activity, and still satisfy many state and national academic standards in all subject areas. Taking a class outside or bringing nature indoors provides an excellent backdrop or context for interdisciplinary learning. By exposing students to nature and allowing them to learn and play outside, EE fosters sensitivity, appreciation, and respect for the environment; combats nature deficit disorder; and promotes

a healthy lifestyle.

The outdoors present exciting learning opportunities. Children can engage in activities of their choice. They can run, skip, hop, shout and participate in fun activities, without the limitations of space. EE is hands-on, interactive learning that sparks the imagination and unlocks creativity. When it is integrated into the curriculum, students are more enthusiastic and engaged. It enables them to make connections and apply their learning in the real world. It helps them see the interconnectedness of issues encouraging them to investigate how and why things happen, and to make their own decisions. It develops and enhances critical and creative thinking skills.

EE promotes a sense of place and connection through community involvement. When students decide to learn more or take action to improve their environment, they reach out to community experts, donors, volunteers, and local facilities to help bring the community together to understand and address environmental issues impacting their neighborhood. EE can help students understand how their decisions and actions affect the environment, build the knowledge and skills necessary to address complex environmental issues, and give opportunities to take action to keep our environment healthy and sustainable for the future.

Outdoor education, EE and first-hand experiences with nature can happen in a wide variety of educational settings. Non-formal education facilities, such as nature centers, park districts, zoos, museums and aquariums have been providing students and the public with EE experiences for centuries. The best practices touched on in this chapter apply to environmental education program development in any educational setting where EE might take place. The information provided is not exhaustive, but should provide ideas and suggestions on areas for further learning or topics to focus on in program development in order to increase environmental literacy here in Illinois.

2. Culturally Relevant and Age Appropriate Approaches

Providing successful environmental education instruction, that leads to increased environmental literacy, relies heavily on ensuring the instruction is rooted in empathy, non-punitive practices, is age appropriate and culturally relevant for the audience. Sharing international climate change impacts with a young student may not be impactful if they do not already have a good foundation of systems thinking and an understanding of the connectedness of nature. Gloom and doom narratives, writing letters to congress, corporations, or business leaders, protests and marches may be appropriate for high-school or adult learners, but not for younger students. It is essential that learners develop skills at the appropriate level; that they be taught how to think, not what to think; and to practice what they are learning in an age-appropriate manner. Sharing local climate change impacts with youth of color, who may already have a good foundation of how their community is impacted by climate change from their lived experiences and reality, may cause further harm or bring more anxiety to these youth. The same train of thought applies to upper level high school students, university aged students or adult learners when describing community impacts, it can lead to increased anxiety if not done through a culturally relevant lens.

Centering (Black, Indigenous, and People of Color (BIPOC) environmental educators can lead to increased awareness of personal responsibilities and the impact on large systems of individual actions. Understanding what information is appropriate for which communities, age-levels, and the best methods for sharing that information is essential to successful environmental education.

The North American Association for Environmental Education (NAAEE) has done extensive research in this area and developed its [Guidelines for Excellence Series](#) which provides direction for community engagement and for early childhood, K-12 and non-formal educators, as well as those engaged in teacher preparation. These resources, downloadable at the link provided, break down the essential underpinnings of impactful environmental education. NAAEE has also developed a set of recommendations for developing and selecting environmental education materials. [Materials: Guidelines for Excellence](#). Anyone creating their own materials or searching for appropriate teaching materials should become familiar with these extraordinary resources which will make the task easier.

EL4IL does not attempt to reinvent best practices, nor duplicate work already done by NAAEE. Rather, it strives to ensure that Illinois educators are aware of the Guidelines and the training, guidance and assistance available within the state for implementing them in all learning environments. The Environmental Education Association of Illinois (EEAI) is the state host for the Guidelines, maintaining a Facilitator Network of educators prepared to train other educators on these materials. For more information on these resources or to attend a training visit the [EEAI Guidelines for Excellence](#) website.

3. Approaches for Environmental Education Implementation

Early Childhood Education

An affinity for and love of nature, along with a positive environmental ethic, grow out of children's regular contact with and play in the natural world.¹ Some authorities believe that if children don't develop a sense of respect and caring for the natural environment during their first few years, they are at risk for never developing such attitudes.² As environmental educator and academic David Sobel writes, "If we want children to flourish, to become truly empowered, then let us allow them to love the earth before we ask them to save it."³

Young children learn best through hands-on, interactive activities that embrace their natural curiosity. Research shows that the foundational concepts of environmental education—appreciation of, awareness of, and connection to nature—are best formed at an

¹ Bunting 1985; Chawla 1988; Wilson 1993; Pyle 1993; Chipeniuk 1994; Sobel 1996, 2002 & 2004; Hart 1997; Moore & Wong 1997; Kals et al. 1999; Moore & Cosco 2000; Lianne 2001; Kellert 2002; Bixler et al. 2002; Kals & Ittner 2003; Phenice & Griffone 2003; Schultz et al. 2004

² Sobel 1996, Wilson 1996

³ <https://naturalstart.org/sites/default/files/helpingchildrenlovetheearth.pdf>

early age.⁴ Outdoor early childhood programs can be called by many names, including: outdoor preschools, forest preschools, nature preschools, forest kindergartens, and forest play schools. Each refers to an educational program for children, typically ages 3-6, who spend the majority of their time in a natural setting. The curriculum, whether formal or non-formal, follows what children take an interest in; recognizes that children learn best when playing; and uses the outdoor site itself. Educators support children's innate desire to learn about and connect with the natural world through play as it unfolds in a natural setting.

[Certified Nature Explore Classrooms](#) have a deep commitment to connecting children with nature. Each one is unique in size and setting, and how they go about accomplishing their goal of bringing a sense of wonder to children's lives. They are located in early childhood programs and elementary classrooms, nature centers, parks, zoos, Head Start centers, arboretums, children's museums, other public spaces and some privately run daycare facilities. Illinois has 42 of these throughout the state: 22 in the Northeast; 5 in the Northwest; 7 in the East Central; 6 in the West Central; and 2 in the South.

In addition, data from the Northern Illinois Nature Preschool Association ([NINPA](#)),⁵ notes that "In the Chicago area... There are 16 dedicated nature preschools and forest kindergartens in the area, more than double in the last decade."

Organizations such as [Forest Schools for Illinois](#) are working hard to share ideas, increase accessibility and influence legislation to make this type of learning more common practice in early childhood education in Illinois. Yet, only 3 percent of outdoor preschoolers are Black or African American and only 7 percent are Hispanic or Latino according to Natural Start Alliance's 2017 survey of 121 nature-based programs in the United States. Simplifying the idea of the lack of diversity in these types of programs to issues of access (urban, cost, etc.) is not enough. Different epistemologies, cultural norms of play, safety, and the dominant narrative amongst the majority of these programs should be considered. The Little Naturalists program in Chicago Park District's North Park Village Nature Center is tackling some of these ideas. Not only is a lower-cost program being offered to Chicago residents, but the program:

- acknowledges that play is cultural,
- embraces a land ethic that doesn't see humans over their land,
- teaches an empathetic approach with peers,
- engages ongoing staff conversations about shaping a program in a city with fences and public spaces,
- understands that risk elements may not work for all,
- and stresses an overall importance of safety.

⁴ White, Stoecklin; 2008 [WhiteHutchinson.Com](#); Barrable, 2019; [University of Dundee](#); Otto et. al, 2019; [Science Direct](#)

⁵ [Nature Preschools & Kindergartens at Record Numbers](#)

Outdoor Education

Outdoor learning can occur in a wide range of different situations; from whatever is right outside one’s window to an outdoor patio or seating area; from the cracks in a city sidewalk to a local park; from a large forested area to a full outdoor nature classroom that provides children with direct access to nature. Environmental educators have been examining the impact outdoor learning can have on student learning for years.⁶ A research study in the *Journal of Environmental Psychology* explored “whether engaging children in the natural world over a period of time results in positive psychological outcomes.”⁷ The researchers implemented nature-based activities on the school grounds into a year-long classroom curriculum. They noted improvements in participants’ well-being and an increase in their connectedness to nature. These results demonstrate that utilizing school grounds, which don’t typically include pristine natural environments, can be enough to increase environmental literacy and improve children’s psychological wellbeing. Research is now being done on the impact that nature-based and outdoor learning experiences can have specifically on the health and STEM-capacity of low-income Black and Hispanic youth.⁸

Climate Science Literacy

Climate science literacy, an understanding of the human influence on climate and climate’s influence on us and society, is an important component of environmental literacy. A climate-literate person:

- Understands the essential principles of Earth’s climate system,
- Knows how to assess scientifically credible information about climate,
- Communicates about climate and climate change in a meaningful way, and
- Is able to make informed and responsible decisions with regard to actions that may affect climate.

While no full climate science curriculum is available that accomplishes all of these goals, resources are available to help formal and non-formal educators include more climate science in their programming. Project Learning Tree has developed an E-Unit for 6-8 grade educators, or non-formal educators that work with students in these grades, entitled “Carbon and Climate”.

⁶ Largo-Wright, et al, 2018; [Taylor and Francis Online](#)

⁷ Harvey et. al, 2019; [Science Direct](#)).

⁸ Published online in May 2020 in *Health Equity*, a study examined “the health and educational outcomes of a 15-week NBE (nature-based education) intervention for urban low-income, black and Hispanic children 10–15 years of age” (Sprague et. al, 2020; [Health Equity](#)). The results of this study showed that “there were statistically significant positive changes in STEM capacity and HRQoL (health-related-quality-of-life) for participating students. For example, children’s overall STEM capacity and overall HRQoL scores improved by 44% and 46%, respectively” (Sprague et. al, 2020).

Like all Project Learning Tree (PLT) programs it includes necessary background information, evaluation tools, student work pages and additional resources for further learning. The Environmental Education Association of Illinois offers training opportunities for Illinois educators on this E-Unit and works closely with Illinois Climatologist, Trent Ford, to include Illinois specific content and data to ensure educators can make climate science a localized and relatable issue.

For more resources and local organizations that can provide guidance on climate science instruction, visit the EL4IL Resource Database (Include website).

Environmental Action Civics

An additional approach of environmental education is that learners will use the acquired knowledge and skills to actually take responsible environmental action. Environmental civic action experiences, where youth are provided an opportunity to engage in environmental problem-solving and have a civic experience, is proving to be an effective way to develop civic efficacy. Experiences that engage in environmental issue investigation, debate and problem-solving help students feel empowered to work toward change, gain leadership skills and understand how to use their voice. Earth Force, a national non-profit, “developed a classroom tool that combines high-quality STEM education with project-based learning and Action Civics to create an educational framework that engages young people in the application of classroom lessons to improve the environment and their communities” (<https://earthforce.org/>). This community-action and problem solving process has now engaged over 300,000 students across the country in environmental action civic experiences.

There are three different programs and organizations in Illinois doing this work. The Environmental Education Association of Illinois launched [Earth Force IL](#), a facilitator network to provide IL educators with direct access to training in the Earth Force process, in 2020. Nine facilitators prepared to offer trainings on this program are now available throughout the state and online trainings have been developed as well.

[Project Peace by Youth](#) engages youth in environmental based projects with an emphasis on digital data collection and online issue analysis. Hosted by Operation Endangered Species, educators working with this program are provided extensive training in several digital tools that youth can use to investigate environmental issues.

Illinois Green Alliance also launched [Illinois Green Schools Project](#) in 2020. This is a “project-based challenge for K-12 schools to devise and implement creative no-to-low-cost energy, water and waste initiatives, and sustainable practices for their schools”. Educators and students participating in this program are provided extensive mentoring services by green building professionals. The mentoring can include providing local background information on sustainability issues and project implementation guidance.

Service-learning programs offered by Project Learning Tree (PLT) and other EE organizations

provide students and teachers with support through grants and other resources for action projects.

Agriculture Education

Environmental literacy includes an understanding of all that the environment provides us as individuals and communities. The gap in understanding of where many consumable products come from is growing wider with each generation. In order to create sustainable and equitable food systems individuals must know exactly how food is grown, processed and distributed.

As a farm state, Illinois already has a plan⁹ for educating students about agriculture. It seeks to increase awareness of the knowledge and skills needed to enter agriculture careers in Illinois. Additionally, over 30,000 young people statewide participate in the Future Farmers of America (FFA) program. A recent agreement between Future Farmers and the EPA¹⁰ provides a real opportunity for students to focus on agriculture and other science careers to learn through environmental education and about environmental topics. The Illinois Agriculture in the Classroom program provides both formal and non-formal educators throughout the state with local support to increase agriculture education into their programs. Through professional development opportunities, direct programming for students and free resources, Ag in the Classroom is reaching hundreds of thousands of students each year throughout Illinois.

But agriculture education is not just happening in rural areas. Urban agriculture initiatives are providing a great deal of education and hands-on opportunities in Illinois' major urban areas. Urban Grower's Collective on Chicago's South Side is an excellent example of how agriculture can increase environmental literacy. Through increased local food access, job training and skill building programs, education programs and community outreach, UGC is increasing community health and strength.

JEDIA Consideration

There are various dominant narrative environmental education tenets, practices, approaches, and research included in the Framework. All of which are often rooted in white supremacy, settler colonialism, and the standardization of education without being acknowledged as such. This further erases communities that have been historically excluded and impacted by those who have historically caused more harm to the environment. A recommendation of not using terms such as "best practices", over-representing research and trends, and the standardization of evaluation was considered when writing this framework.

⁹ [The Illinois Plan for Agricultural Education](#)

¹⁰ [FFA and EPA](#)

Chapter 4/Building Partnerships to Advance Environmental Literacy

1. Introduction

Environmental literacy can be achieved by leveraging diverse learning environments and educational approaches and the sharing of resources. Because everyone learns differently, diversifying educational experiences and contexts and building connections can help educators better address the needs of all learners. Not all educators can provide a full variety of experiences and content on their own, therefore, it is recommended that partnerships be formed and utilized between formal and non-formal educators and across geographies, cultures, and areas of expertise. When it comes to the seven Key Tenets of environmental literacy, some educators or organizations may be able to provide more support and instruction for some Tenets, and less for others. Partnerships can allow educators to leverage the expertise of others instead of needing to become experts in every tenet themselves.

2. Partnerships and their Purposes

Partnerships are relationships built between two or more entities with similar missions or goals that allow for a sharing of resources and expertise to mutually benefit both entities. Partnerships in education allow for the sharing of assets and knowledge, lessening the burden on educators. They also bring a diversification of learning experiences for students and program participants, creating greater opportunity for all learners to connect with lessons. Partnerships also allow for the sharing of perspectives and building connections between people and with the environment.

Illinois is home to many distinct ecosystems from prairies to forests to rivers and the grand Lake Michigan shore all with a unique story that connects to environmental literacy. With 27 millions acres of agricultural lands, National Parks, vast forest preserves, and large metropolitan areas, the state also is home to a variety of land uses that demonstrate the inextricable relationship between human and non-human nature. More than 12.5 million people call Illinois home and represent diverse cultures, communities, traditions, and knowledge. Partnerships create the opportunity to connect learners to all the diversity of information and experience the state has to offer. Environmental literacy can benefit from these connections - not only should learners understand their personal environment and relationship with the land, but also how their immediate localities, perspectives, and relationships with the land are part of a larger system and story.

3. Benefits of Partnerships

- Provide a variety of learning settings
- Provide a variety of learning approaches
- Amplify and achieve mutual missions and goals
- Allow for the sharing of assets like financial resources, time, expertise, and access

- Building connections between people, across different cultures, traditions, beliefs, and ages/generations
- Building connections between human and non-human nature, across geographies and ecosystems

4. Examples of Partnerships

- A high school in rural McClean County invites speakers for an environmental career day. They invite a local scientist, a farmer, an environmental justice organizer, and an environmental policy advocate to talk with high schoolers about various career paths related to the environment.
- Middle school teachers in Peoria partner with sustainable food farms in urban and rural areas for a lesson on food sources and the effects of climate change for farmers.
- An elementary school teacher in Chicago partners with the local Park District to plan a field trip to the park nearest the school. Students explore and look for birds, bugs and plants.
- A nature museum partners with a local house of worship. Together they plan an event that focuses on nature and cultural traditions. This event is an opportunity for a multigenerational exchange that emphasizes the important role nature plays in human culture.

5. Building and Maintaining Successful Partnerships

Successful partnerships require investment, communication, and time. This list of elements can build and maintain strong partnerships:

- Reciprocity and equity - Partnerships should benefit all participants and should respect the needs of all participants. Partners with more privilege and resources should consider how to partner to support partners without this access.
- Communication - Partnerships function best when good and regular communication is established. Communication begins with initial outreach to potential partners and should always be respectful and professional.
- Clearly defined goals and roles - Partnerships may begin with exploratory conversations, brainstorming and visioning, but should settle on a shared goal or aim and clearly defined roles for all partners involved. Defining expectations, timelines, and long and short term steps can help with achieving shared goals.
- Opportunities for feedback - Partnerships should schedule and keep check-ins for feedback and reflection.

Chapter 5/Evaluation of Environmental Literacy

1. Introduction

As educators implement environmental education into their respective settings, it will be necessary for them to assess gains and progress in the environmental literacy of their learners. Evaluation can be complicated and following a set of specific standards and recommendations can assist educators in evaluating environmental literacy in consistent and accurate ways. This chapter aims to provide those examples and resources to aid educators in evaluating environmental literacy.

In assessing environmental literacy, the NAAEE points out that environmental literacy exists and grows on a spectrum. NAAEE describes “the primary elements of environmental literacy—the cognitive (knowledge and skills), affective, and behavioral components—as both interactive and developmental in nature. That is, individuals develop along a continuum of literacy over time—they are not either environmentally literate or illiterate”, (NAAEE, “Developing a Framework for Assessing Environmental Literacy: Executive Summary,” 2011, Retrieved from <https://cdn.naaee.org/sites/default/files/envliteracyexesummary.pdf>). If educators are seeking a breakdown of how best to evaluate students and program effectiveness by age range of the students, the NAAEE Guidelines for Excellence are a valuable resource. (NAAEE, “Guidelines for Excellence: K-12 Environmental Education”, 2019, Retrieved from <https://naaee.org/eepro/publication/excellence-environmental-education-guidelines-learning-k-12>)

2. What to Evaluate

When conducting evaluations, it's necessary to first identify what is being evaluated. In the case of environmental literacy, an educator could use the definitions and seven main tenets of environmental literacy (see Chapter 1 of this Framework) to develop potential indicators of those tenets. Below are the seven tenets of environmental literacy with sub-points of suggested indicators to measure. These indicators are not an exhaustive list, but are examples.

1. Understanding of community
 - a. Learner can demonstrate understanding of environmental conditions (past and present) of their community including;
 - i. Can identify the native nations who originally stewarded the land, how they used and cared for it and what they believed about the environment
 - ii. Can identify how the land is currently used and how and why the land has changed over time
 - iii. Can describe the natural resources of the land in their community, how the natural resources are used and how they support human and non-human life

- iv. Can describe how humans depend on the environment and how the environment depends on them
- 2. Awareness of environment
 - a. Learner can demonstrate understanding of the makeup of the environment, including:
 - i. Can identify different ecosystems and the wildlife and plants that live in those ecosystems
 - ii. Can form questions about environmental elements
 - iii. Can describe how elements in the environment or in a given ecosystem related to one another
- 3. Connection with the environment
 - a. Learner can describe a personal experience in nature or relationship with the environment
 - b. Learner can form questions and draw broader conclusions about the environmental systems, including relationships between non-human nature, and between human and non-human nature
 - c. Learner can describe how the environment affects them and how they affect the environment
- 4. Understanding of environmental justice
 - a. Learner can define environmental justice
 - b. Learner can provide an example of an environmental justice issue and activism around it
 - c. Learner knows some of the leaders of the environmental justice community who have made a difference on the ground
 - d. Learner can describe the importance of environmental justice for the overall health of people and nature.
 - e. Learner takes action in solidarity with the EJ movement
- 5. Civic engagement focused on Environmental Action
 - a. Learner identifies they have self-efficacy and that their voice and actions matter
 - b. Learner can identify environmental actions that they can take and their potential impact
 - c. Learner believes they are part of the solution to environmental issues
 - d. Learner has the skills, knowledge and motivation to take environmental action
 - e. Learner takes environmental action
- 6. Access to Climate Change Education and an Understanding of Climate Science
 - a. Learner demonstrates a basic understanding of the climate system, including the natural and human-caused factors that affect it
 - b. Learner can describe the fundamental relationship between climate and human life and the many ways in which climate has always played a role in human health
 - c. Learner knows how to assess scientifically credible information about climate
 - d. Learner understands their role in addressing climate change and is able to make informed and responsible decisions with regard to actions that may affect climate.
- 7. Understanding of Sustainability, Adaptability and Resilience

- a. Learner can define environmental justice and sustainability
- b. Learner understands the terms adaptation, mitigation, and resilience, and what they mean for human and non-human nature
- c. Learner values the vision of an environmentally just and sustainable Illinois
- d. Learner understands what sustainability, adaptability, and resilience mean for their community and take responsibility for supporting these efforts

3. How to Evaluate

When evaluating environmental literacy, educators will likely employ both formative and summative assessment methods. Evaluation methods will vary depending on the educational context and the age of the learners being evaluated. For ESL/ELL and non-native English speakers, evaluation instruments should be translated into native languages, especially when content specific vocabulary is used.

Formative assessments “monitor student learning to provide ongoing feedback that can be used by instructors to improve their teaching and by students to improve their learning.” Formative evaluation can help educators understand where learners are starting from and how they are taking in new information. Examples of formative evaluation that could be used in formal or non-formal education settings include asking learners to:

- Summarize lessons or concepts in two sentences
- Complete questionnaires
- Journal
- Make observations
- Tell stories, give presentations, or create drawings to demonstrate their understanding of concepts
- For early childhood learners, behavioral checklists or observations, as well as image or icon related assessments can be beneficial

Summative assessments “*evaluate student learning* at the end of an instructional unit by comparing it against some standard or benchmark.” Examples of summative evaluations include:

- Mid-term tests
- Short quizzes
- Final projects/papers
- (Add footnote of resource:
<https://www.cmu.edu/teaching/assessment/basics/formative-summative.html>)

4. Resources to Help with Evaluation

Evaluation is often a difficult undertaking for those who are constrained in time and financial resources to implement in education settings. We recommend the following resources and

opportunities for evaluation efforts.

- The website [My Environmental Education Evaluation Resource Assistant \(MEERA\)](#) provides a suite of reputable guidance on environmental education evaluation and preparing these evaluations
- The [North American Association of Environmental Educators \(NAAEE\)](#) provides a site with a set of resources and published articles dedicated to environmental education
- Working in partnership with local organizations and institutions can help educators access assistance with evaluation. Examples include:
 - Connecting with local universities to build partnerships with students and professors with expertise in evaluation and looking for experience
 - Identify evaluation experts and hire a consultant, if resources allow, to aid in evaluation

Chapter 6/Resources

Resources Overview

Resources assist with the creation and implementation of environmental education programs across a spectrum of formal and non-formal education institutions in Illinois. From virtual materials, informational web links, curriculum and services (presenters, access to natural areas and more) all listed resources provide pathways to supporting Environmental Literacy in Illinois.

For the first time in 2021, the resources list includes information on environmental justice organizations from across the state, purposefully connecting environmental awareness of nature, justice, and equity to produce a more holistic vision for EL. Inclusion of EJ & EE resources is integral for attaining environmental awareness and literacy, as there is a need for people to acquire this knowledge in order to act effectively, achieving empowerment through environmental literacy thus providing the youth of Illinois with the tools they need to address both local and global environmental issues.

To view the complete list of EL4IL Resources please visit [\[EL4IL Resources Website\]](#).

APPENDIX A/Terms and Definitions

A

B

C

D

E

Educator - anyone providing learning and instruction, This term is used to refer to anyone providing learning and instruction.

Environmental literacy

F

Formal education - structured learning environments with standards and trained/certified educators at all levels of learning (Pre-K to University).

Formal educator (also see “Teacher”)- educators in formal education settings, like classrooms, who are bound by State or Federal teaching standards.

Formative evaluation -

G

H

I

J

K

L

Learner - anyone learning or being taught at any age, whether it be in a formal or non-formal education setting

M

N

Non-formal education - organizations or sites that may have educational programming that is not bound by State or Federal standards. In Illinois these may include afterschool programs, job programs, youth development programs, recreation programs, family learning programs, etc. and may be held in places like nature centers, parks, preserves, museums, houses of worship, etc.

Non-formal educator - educators who are not bound to State or Federal teaching standards and do not teach in traditional classrooms

O

P

Partnership

Q

R

S

Summative evaluation -

Student - learners in a formal education setting, like a classroom

T

Teacher (also see “Formal educator”) - educators in formal education settings, like classrooms, who are bound by State or Federal teaching standards.

U

V

W

X

Y

Z

Appendix B/EL4IL History

- 1995 - The *Environmental Literacy for Illinois* strategic plan was originally conceived and developed under the direction of Gwen Pollock, Science Education Director of the Illinois State Board of Education (ISBE). Released in July 1995, it was designed to incorporate environmental education into Illinois learning opportunities, including supporting the meaningful implementation of the Illinois Academic Standards Project that was occurring at ISBE at this time. The plan was intended to cover a five-year period.
- 1998 – The plan was revised to reflect objectives that had been met, as well as the technological advances achieved in the past few years. The revised plan was released in May 1999. The Illinois Environmental Education Advancement Consortium and the Environmental Education Association of Illinois were the lead organizations in conducting this revision.
- 2005 - In May 2005 a revision team convened to amend the plan to reflect the accomplishments since its inception, to modify it for the next five years and to incorporate changes needed due to the adoption of the Illinois Learning Standards Project by the ISBE. The Illinois Environmental Education Advancement Consortium and the Environmental Education Association of Illinois were the lead organizations in conducting this revision. Funds for the revision process were provided through an Environmental Education Training and Partnership (EETAP) grant.
- 2010 - The Illinois Department of Natural Resources cooperated with the Illinois State Board of Education and the Illinois Environmental Protection Agency to lead the 2010 revision. Besides direct input from many organizations, drafts of the plan were posted for public comment online and two comment sessions for the public were held (Lisle and Springfield). This plan offered increased emphasis on the importance of non-formal and early childhood environmental education programs. A grant application was submitted to the U.S. Environmental Protection Agency requested funds to support implementation of the strategic plan, but it was denied.
- 2015 – The revision of the Environmental Literacy for Illinois plan did not occur, because the State of Illinois did not have a budget and the Illinois State Board of Education was going through a State Superintendent transition.