
ENVIRONMENTAL EDUCATION: A STRATEGY FOR THE FUTURE

THE VANTAGE AND VISION OF ENVIRONMENTAL EDUCATION

Environmental education (EE) aims to create an environmentally literate citizenry, poised and motivated to take action on pressing environmental issues—from climate change to habitat conservation and from endangered species to water scarcity. Environmental education is about engaging students, community members, policy makers, the young and the old. It is about empowerment, skills development, and providing opportunities for action.

At its best, environmental education represents hope and change. It is a strategy by which people can make proactive, informed decisions that honor ecological, economic, and social integrity—the foundations of sustainability. With its emphasis on instilling these values to guide our individual and communal actions, environmental education allows everyone to work toward a better quality of life.



FOUNDATION SUPPORT FOR ENVIRONMENTAL EDUCATION

Many foundations recognize the critical role of education in all environmental efforts: laying the groundwork for building a thoughtful, informed, and active citizenry. A belief in the power of individual action and a commitment to involving all sectors of society in environmental decision-making have led many in the philanthropic community to increase their support of efforts to facilitate dialogue, encourage environmentally responsible behavior, improve access to the out-of-doors and natural resources, and promote environmental justice and equity. Some of these efforts may be categorized under community development, youth engagement, climate justice, or communications, but many may also be classified as forms of environmental education.

Whatever term is used, this commitment to ensuring participation and awareness for young and old alike is demonstrated by the more than 2,000 foundation awards totaling more than \$92 million¹ that were made in the area of environmental education in 2007. The past five years have seen a 70 percent increase in the amount of funding provided to efforts so classified, signaling an enhanced level of interest in education as an effective strategy for environmental protection—one that has the

potential not only to affect the results of specific on-the-ground environmental campaigns but also to produce broader social change. Add to this funding increase the efforts classified under terms other than “environmental education,” and the impressive level of interest in the movement for citizen participation in and engagement with environmental causes becomes evident.

However, even with this notable increase in interest and support, funding for environmental education still lags in comparison with other areas of environmental grant-making, such as habitat restoration, conservation, and resource management. In 2007, grants that could be considered to fall under environmental education represented barely 4 percent of all grants in the area of “environment and animals” and 0.3 percent of all foundation giving overall.²

In light of the demonstrated commitment of so many foundations to environmental education in all its forms and the tremendous potential for growth in this area, the time is ripe for a dialogue on future directions for support. Important next steps include broadening the definition of “environmental education” to recognize it as a process of lifelong learning; building the field’s research base—particularly through longitudinal, interdisciplinary studies; continuing to hone and disseminate best practices; and developing a richer understanding of how environmental education can most effectively work in concert with science, activism, and policy efforts to achieve maximum results on the ground.

“ENVIRONMENTAL EDUCATION ISN’T SOMETHING THAT HAPPENS ONCE—IN FIFTH GRADE OR AT SUMMER CAMP. RATHER, ONE NEEDS TO REVISIT THESE ISSUES AND THEMES FREQUENTLY IN LIFE. EARLY EXPERIENCES IN NATURE LAY THE GROUNDWORK, BUT WE MUST CONTINUE TO BUILD ON THOSE THROUGHOUT OUR LIFETIME. EDUCATION NEEDS TO BE INNOVATIVE AND INTEGRAL TO THE PROBLEM-SOLVING PROCESS THAT FOUNDATIONS ARE CHAMPIONING FOR THE ENVIRONMENT. OTHERWISE, AT BEST, WE’LL HAVE REALLY OUTDATED SOLUTIONS TO CONSTANTLY CHANGING PROBLEMS.”

—ZENOBIA BARLOW, CENTER FOR ECOLITERACY

WHAT IS ENVIRONMENTAL EDUCATION?

Most simply, environmental education is education in, about, and for the environment.³ Environmental education, which researchers Monroe et al.⁴ have described broadly as an “approach, a philosophy, a tool, and a profession,” is built on the following three goals:

- To foster clear awareness of, and concern about, economic, social, political, and ecological interdependence in urban and rural areas;
- To provide every person with opportunities to acquire the knowledge, values, attitudes, commitment, and skills needed to protect and improve the environment;
- To create new patterns of behavior of individuals, groups, and society as a whole toward the environment.⁵

Environmental education has a range of audiences—from youth to the elderly, and from families to policy makers—and takes place in a range of settings—from schools and courthouses to museums to boardrooms. Environmental education is said to be formal or informal (or nonformal), where “formal” refers to education that occurs in a traditional school setting and “informal” refers to education in broader public settings such as zoos, aquariums, or community centers—and through media outlets such as the Internet or television documentaries.⁶

Environmental education also uses a range of strategies and teaching techniques, which can be used separately but ide-

ally build one upon the other. Education researchers Scott and Gough (2003)⁷ describe this continuum as including:

- **Information** activities, which aim to increase awareness and understanding and are defined as “informal” education.
- **Communication** activities, delivered in both formal and informal settings, which aim to establish a dialogue between audiences and environmental organizations or agencies for the mutual sharing of experiences, priorities, and planning.
- **Education** activities, also delivered in both formal and informal settings, which aim to promote knowledge, understanding, an attitude of concern, and the motivation and capacity to work with others in achieving goals.
- **Capacity building** activities, delivered primarily in informal settings, which aim to increase the capacity of civil society to support and work for environmental preservation.

In practice, environmental education is intended to exemplify sound education principles based on sound pedagogy and sound science. It is hands-on, contextualized, and interdisciplinary, linking natural and social sciences, the arts, and mathematics, among other subjects, to address complex and multifaceted environmental issues.⁸

SUPPORT FOR ENVIRONMENTAL EDUCATION: PAST TRENDS, FUTURE DIRECTIONS

Support for Environment-Related Causes

The natural environment is essential to all life on earth. All living things depend for their basic survival on healthy, functioning ecosystems: clean air, pure water, rich soils, unfettered decomposition processes, stable and predictable climatic patterns, abundant marine resources, and so on. Moreover, we turn to the earth for spiritual sustenance and inspiration. Nature is an essential element of our humanity—some even argue that our connection

to the natural world is an innate part of the human experience and that our need to affiliate with life and lifelike processes arises from the very core of our being.⁹

But threats to the environment—to environmental services, to our relationship with the natural world, and indeed to our very existence—continue to grow. Studies have consistently shown that scientists, policy makers, and the public are alarmed about the state of the environment.¹⁰ Spurred by these mounting concerns, founda-

tions, corporations, and individual donors alike have found the environment to be an increasingly compelling cause.¹¹ The Environmental Grantmakers Association (EGA) has reported that, between 2006 and 2007, funding in the area of “environment and animals” experienced the greatest growth among all funding areas. Yet when compared with other pressing issues—such as health and education—environment rarely rises to the top as a priority. (See Figure 1 for a breakdown of support across sectors.)

Funding for Environmental Education

Foundation Support

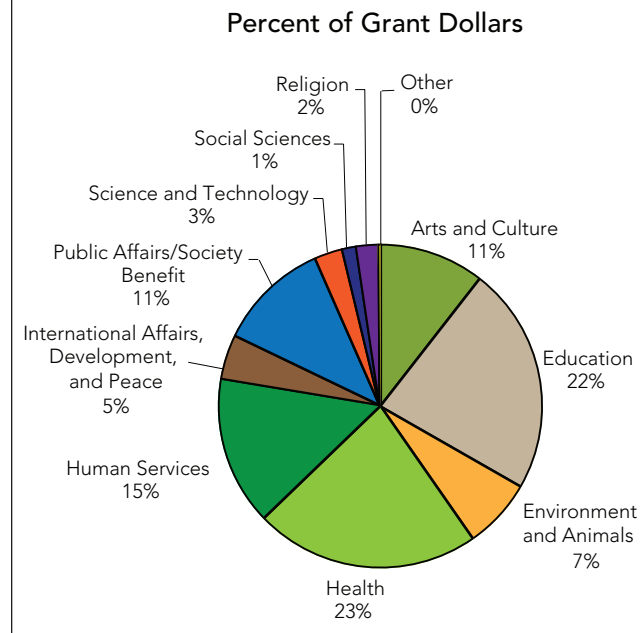
Among the foundations that do fund in the area of the environment, environmental education is often near the bottom of the list in terms of number of grants and dollar amounts given, if it is included at all. Only a small portion of foundations indicate a specific interest in environmental education: As of 2009, according to the Foundation Center, 2,194 of the 20,000 largest foundations in the United States (11.0 percent) had program areas in both environment and education, yet only 86 of these foundations (0.4 percent) specifically listed “environmental education” as a field of interest.¹²

A tremendous divide exists when considering foundation interest in education per se versus environment and, by extension, environmental education. In 2007, US foundations provided grants totaling approximately \$4.94 billion for education-related initiatives and causes. This sum was equivalent to 22.8 percent of all foundation giving, making it the top-ranked category. By contrast, in 2007, total distribution for “environment and animals” was approximately \$1.47 billion, or 6.8 percent of total giving. Finally, giving for environmental education was 0.3 percent of this overall total.¹³

The amount of funding, in dollars, for environmental education as a percentage of overall giving in the areas of environment and animals has remained roughly consistent at approximately 4.0 percent to 5.0 percent annually. However, because total philanthropic giving for the environment overall is rising, the combined dollar amount of support for environmental education has risen steadily over the past decade.¹⁴

Environmental education, for example, lags well behind areas such as natural resource conservation and pollution control, which between them garnered nearly 70 percent of overall annual support in 2007. (See Figure 2 for a

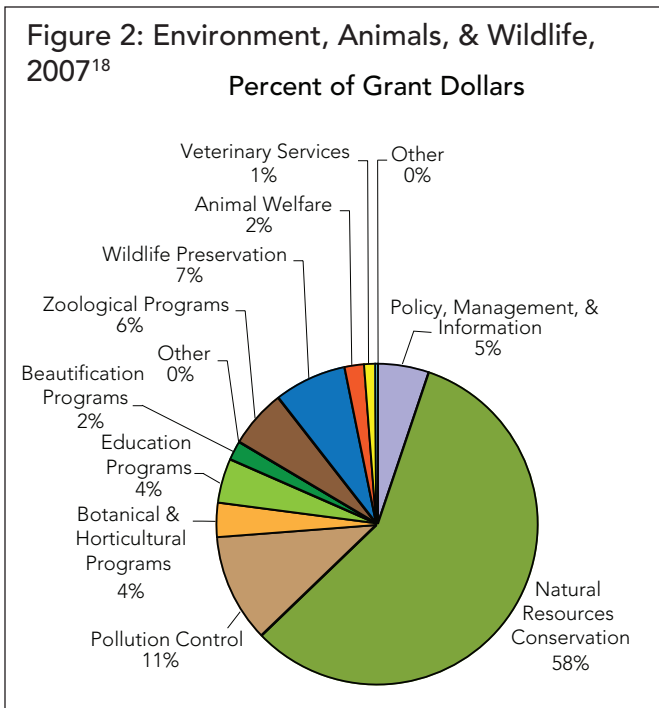
Figure 1: Sectors Funded by Foundations, 2007¹⁵



breakdown of support within the “environment and animals” sector.)

Another perspective on funding for environmental education is provided by considering the amount of overall foundation funding dedicated to various aspects of environment, wildlife, and animals. (See Figure 2.) In 2007, the majority (57.4 percent) went to activities classified as “natural resource conservation,” which includes direct conservation activities such as restoration and the purchase of land. The next-largest percentage (10.9 percent) went to pollution-control measures, while environmental education, at 4.3 percent, was on par with policy, management, and information (5.3 percent) and botanical and horticultural programs (3.7 percent).¹⁶

Yet another significant trend in the environmental education funding landscape is the increasing support for environment and sustainability in higher education: In the past five years, approximately 30 percent of foundation giving classified under the terms “environmental education” or “sustainability education” has gone to universities. (In 2007, universities received almost 63 percent of total environmental education funding.¹⁷) Also in the last five years, seven of the largest grants in environmental and sustainability education—which include those in related areas such as water education, climate education, and natural resources education—have been given to universities: Duke, Stanford, Columbia, and Utah State



in the United States, and the University of Bristol in England.¹⁹

In addition to funding specifically targeted to “environmental education,” we also need to consider related initiatives that may fall under a broader definition of the field. For example, philanthropy often subsumes environmental education into a wider, issues-based strategy: Foundations may decide to invest in a particular topic area, such as climate change or forestry, and then direct support to a suite of strategies to address that issue. Comprehensive plans of this nature often include elements of education, such as reaching youth through school-based programs and adults through various community initiatives, and it can be challenging to parse which portions of the funds are earmarked specifically for education-related activities.

This challenge is offset somewhat by the rising tide of philanthropic support in certain areas that may spill over into increased support for environmental education. Some topical areas closely associated with education include:

- **Climate:** Overall, climate has received increasing interest from funders. Between 2003 and 2007, the number of climate-related grants awarded increased by 269.0 percent, and the total annual dollar amount increase by 431.0 percent. In 2003, the largest single grant was \$100,000, while in 2007 eight grants topped

\$1 million. Although many of these grants focused primarily on advancing science or policy, a number also included funds dedicated to educational efforts.

- **Health:** Health education is closely linked to—and often overlaps with—environmental education with regard to educational strategies and tactics as well as content. A number of foundations, such as the Bill and Melinda Gates Foundation, reported major (multi-million-dollar) initiatives in the area of health education, with most of the larger grants in this area given for programs outside of the United States.
- **Water:** Water education is often closely aligned with environmental education.²⁰ The Bill and Melinda Gates Foundation has provided a number of grants in excess of \$5 million to water conservation and education efforts through organizations such as Care USA and the University of Bristol, among others; many of them also were directed to initiatives outside of the United States.

When we examined grants awarded specifically for education related to certain interest areas, several trends appeared. In particular, we noted a relatively large—and rising—number of grants in the areas of “climate and education,” “health and education,” and “water and education” as well as a large but steady number of grants in “natural resources.” Somewhat surprisingly, funding under the categories of “environmental justice,” “community gardens,” and “service learning”—topics of tremendous interest in the EE field—were not rising as quickly as expected. Perhaps grantmaking in these areas will catch up in the years ahead.

Government Support

In addition to foundations, another critical sector providing support for environmental education is the government. Local, state, and federal agencies fund environmental education initiatives at varying levels and with a range of purposes. Perhaps the most visible and best-known federal funder is the US Environmental Protection Agency’s (EPA’s) Office of Environmental Education, whose grants program was initiated in 1992.

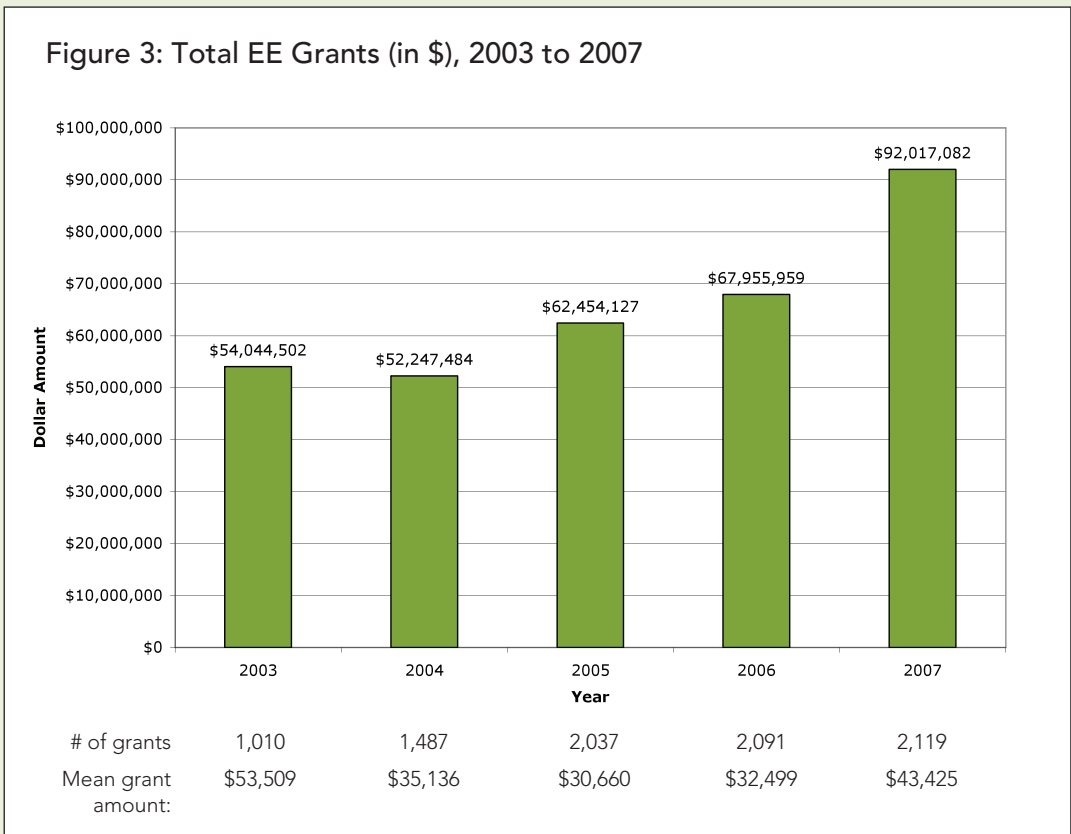
This highly competitive program supports environmental education initiatives that are “based on sound science and [that] enhance critical-thinking, problem-solving, and decision-making skills of the target audience.” EPA specifically states that these grants “will not fund projects that advocate

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At-a-Glance: Trends in EE Grants, 2003 to 2007

Over the past five years, the 20,000 largest US foundations awarded 8,744 grants in the area of environmental education.

- The total amount awarded was \$328.7 million (accounting for less than 5 percent of all giving in the area of environment, animals, and wildlife²¹).
 - Individual grants ranged from \$1,000 to \$12.5 million.
 - The median grant was \$10,000.
 - The mean grant was \$37,594.
 - 656 grants were for \$100,000 or more.
 - 30 grants were for \$1 million or more.
 - There was a 110 percent increase in the number of EE grants from 2003 to 2007.
 - There was a 70 percent increase in the total grant amount from 2003 to 2007.
- (See Figure 3.)



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a particular viewpoint or course of action about environmental issues, or projects that simply disseminate information,” but does require that projects so funded “teach analytical skills and informed decision making [leading] to responsible actions to protect the environment.”²²

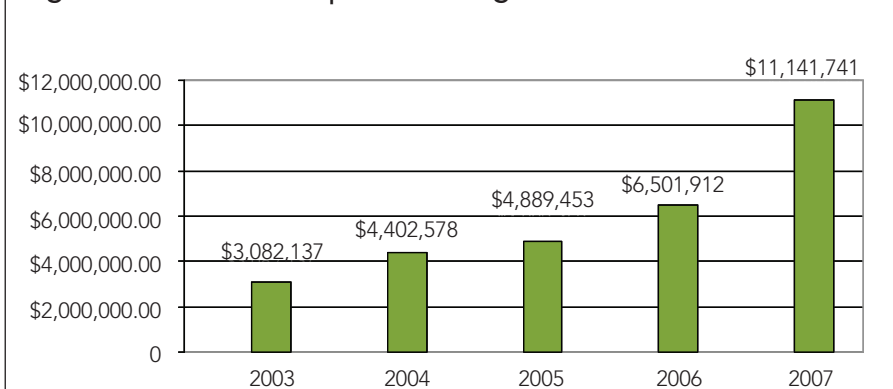
The EPA has provided an average of \$2.7 million in environmental education grants annually, though the level of funding has fluctuated from a low of \$1.3 million (in 2007) to a high of \$3.3 million (in 2008), with a total of \$45,250,214 in dollars allotted and 3,332 initiatives funded over the past 16 years.²³ Although the Office of Environmental Education’s funds are a large source of support within the environmental education field, when compared with the level of funding granted by EPA overall, funds earmarked for environmental education represent only a small fraction: Out of \$3.7 billion that EPA granted in fiscal year (FY) 2008, a mere \$2.2 million was allocated for the environmental education grants program.²⁴

Other government agencies and offices that provide support for environmental education initiatives include the Department of the Interior (through the National Park Service, the Fish and Wildlife Service, the US Geological Survey, and the Bureau of Land Management), the Department of Agriculture (Forest Service), the Department of Commerce (National Oceanographic and Atmospheric Administration [NOAA]), and the National Science Foundation, among others.

Corporate Support

Yet another sector showing a rise of interest in and support of the environment in general, and environmental education in particular, is the corporate world. A 2007 survey of trends in corporate philanthropy²⁵ found that a total of \$464 million—or 4 percent of total giving—went to environment, through grants by 155 companies. A search of the Foundation Center’s Corporate Giving Online database revealed that 1,776 environment-related corporate grants were awarded in 2007, with a total dol-

Figure 4: Trends in Corporate Giving to EE, 2003 to 2007



lar value of approximately \$104 million. Of that amount, \$11.4 million (10.98 percent) went to environmental education through 313 grants, continuing an impressive growth trend over the past five years. (See Figure 4.)²⁶

A slightly different but equally compelling angle on the corporate role in supporting environmental education is the increased business interest in sustainability education and training for employees. “The Engaged Organization,” a 2009 report produced by the National Environmental Education Foundation (NEEF), details results of a survey of more than 1,300 professionals interested in business and the environment.²⁷ Findings indicate that more than 75 percent of organizations in the survey sample had some kind of corporate environment and sustainability program in place. Managers reported seeing a corporate focus on sustainability and green practices used as a means to enhance employee satisfaction, improve the financial bottom line, and become a better corporate citizen. Moreover, respondents also often had corporate-giving programs that were part of a multi-pronged sustainability strategy.

The findings of NEEF’s study are indicative of a larger trend: Corporate employee environmental education is on the rise. Many Fortune 500 companies with 100,000 or more employees are implementing innovative EE programs. Companies such as Cisco Systems, with 66,000 employees, and Hewlett Packard, with more than 300,000, are educating their workers about environmental literacy and stewardship, promoting messages related not only to employees’ business practices, but also to their home lives and community roles.²⁸

FOUR TRUTHS ABOUT ENVIRONMENTAL EDUCATION

Environmental Education Is Lifelong Learning

Environmental education is a cradle-to-grave strategy that engages everyone, encouraging them to connect with the natural world and, when appropriate, to take action to protect it. While youth undoubtedly represent a critical audience for environmental education, it is equally important to nurture and support environmental literacy among adults whose daily consumer behaviors and political actions can have impressive impacts on the environment and conservation.

In recognition of this fact, environmental education involving employees, policy makers, clergy, community activists, parents and grandparents, and members of the media, among others, is on the rise.²⁹ These groups play important roles in decision-making about environmental conservation both today and in the future. So in addition to schools, informal settings such as zoos, aquariums, museums, community centers, and parks, as well as media outlets including the Internet, radio, magazines, and newspapers all are important avenues for environmental education.

Environmental Education Is Interdisciplinary

The sciences, particularly ecology, provide important fundamentals for understanding environmental issues, but environmental education by definition is framed by its social context. Environmental education is about human behavior, focusing on human interactions with the world around us and encouraging people to engage in productive dialogue and decision-making with an emphasis on positive environmental behavior, critical thinking, and citizen participation.

Within a formal, or school, setting, environmental education comprises a variety of subjects. Here, social studies, government, and history are as important as biology, chemistry, and physics in addressing today's complex environmental problems.³⁰ For example, in recognition of the complex nature of environmental issues, the State of California's Education and Environment Initiative weaves environmental principles and concepts throughout instructional materials in science, history/social science, English/language arts, and mathematics.³¹ Engaging students across the disciplines in this way provides them an opportunity to understand environmental issues as they truly are—multifaceted, ever-shifting, and responsive to human intervention.



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“TRADITIONALLY, IF YOU SAID ‘ENVIRONMENTAL EDUCATION,’ TO NINE OUT OF TEN PEOPLE, THEY WOULD THINK ABOUT A YOUTH PROGRAM, BUT THERE’S A LOT OF EE THAT NEEDS TO HAPPEN FOR ADULT POPULATIONS... THERE’S COMMUNITY STEWARDSHIP, MEDIA, VOLUNTEERISM...”

—DANA LANZA, DIRECTOR,
CONFLUENCE PHILANTHROPY

Environmental Education Is a Proven Strategy

In the face of the complexity and uncertainty embedded in many environmental issues, the time-honored policy tools of regulation and market incentives often prove insufficient to the task of coping with significant environmental management problems. Managers and policy makers must turn ever more frequently to other policy options, including education, information provision, and voluntary measures.³² Although increased education does not equate with behavior change, a strong link between the two can often be found, as education plays an important role in increasing knowledge, honing critical thinking skills, and enhancing the capacity and motivation to take action.³³ Thus, supporting environmental education represents an investment in the future. Well-designed environmental education initiatives are built around a theory of change—the idea that a logical series of events may be used to demonstrate how activities in the present may lead to the achievement of goals and objectives in the future. Although it may be easier in the short run to see the direct impact of legislation passed or an acre of trees planted, an environmental-education initiative can make a much longer-term impact on environmental attitudes, knowledge, skills, and action by preparing people to support those policies or become involved in the replanting efforts. In this way, science, policy, and education work hand in hand as effective strategies for environmental protection and conservation.

Environmental Education Is About Critical Thinking and Citizen Participation

Good environmental education is about teaching people how to think, not what to think. Rather than advocating for specific positions, environmental education contextualizes environmental issues within a complex ecological, social, and economic framework. Environmental education encourages people to take an active role in environmental problem-solving by helping to develop citizen-action skills, then providing opportunities for taking action. But because education around hot-button issues such as the environment can be controversial, developing high quality standards for both teaching materials and professional training is essential to maintaining the integrity of the field.³⁴

ENVIRONMENTAL EDUCATION IN ACTION: Solar Youth

“Kids explore! Kids do! Kids teach!” is the slogan for Solar Youth, a New Haven, Connecticut-based nonprofit that offers in-school, after-school, and summer programs. Youth from the community learn about their local environment, identify environmental issues, and design and implement creative action projects; then they teach others about what they have learned, demonstrating the experiential learning cycle in action. Projects have addressed issues ranging from pesticide use to watershed health, and public-service activities have run the gamut from cleaning up trash in local parks to building footbridges in previously inaccessible green spaces.

A longtime supporter of Solar Youth, Denise Canning of the Community Foundation for Greater New Haven, says, “Through Solar Youth’s programs, youth realize their potential as leaders and as responsible and caring citizens for their environment and their community. They fill a unique niche in our city, providing both environmental education and youth development.”

ENVIRONMENTAL EDUCATION: LOOKING FORWARD

Environmental education is life-affirming: It celebrates the joy of nature in all its diversity, inspires responsible human interactions with fully functioning ecosystems, and draws connections between today's actions and tomorrow's consequences. Compelled by the vision and value of environmental education, the foundation world is now engaging in an exciting and productive yet sometimes difficult dialogue about a new definition of, and best entry points into, this evolving field. Today, schools and outdoor education centers no longer provide the sole venues for involvement, youth is no longer the primary audience, and conventional curricula are no longer the only outreach vehicles for environmental education. Rather, the conversation around environmental learning and decision-making has entered community centers and boardrooms, community gardens and church sanctuaries, and involves people of diverse ethnic and racial backgrounds of all ages and at all educational levels. Moving beyond subject-specific topics, this conversation centers on creativity and ingenuity, sense of place and connection to community. Overall, environmental education is

"WE ARE PRECISELY THE KINDS OF INSTITUTIONS THAT HAVE THE LUXURY OF TAKING A LONG VIEW, SO IF WE'RE THINKING ABOUT WHAT WE WANT TO SEE 20 YEARS FROM NOW, WE NEED TO BE THINKING ABOUT LONG-TERM STRATEGIES SUCH AS ENVIRONMENTAL EDUCATION."

—STUART ALAN CLARKE, TOWN CREEK FOUNDATION

evolving into a more inclusive strategy, but one that will require nurturing and support if it is to grow and thrive.

To that end, several points of intervention offer particularly critical funding opportunities.

Intervention 1: Support Research to Develop the Intellectual Underpinnings of the Field

Invest in empirical research with an eye toward developing strong intellectual underpinnings for the EE field.

Because environmental education engages people's hearts and minds, it can be a powerful strategy for change.

However, few longitudinal studies have been undertaken

ENVIRONMENTAL EDUCATION IN ACTION: Earth Gauge

Invited into millions of homes each day through televised weather forecasts, meteorologists as a group are a trusted source for popular scientific information.³⁵ And weather is one of the most immediate, personal ways in which people connect environmental problems and the natural world with their daily lives. That's why a pioneering initiative to transform the weather forecast to an "envirocast" has met with tremendous success. Including environmental information tied to the three- to five-day local forecasts has helped to retrain broadcast meteorologists to serve as station scientists. This initiative—a partnership between the American Meteorological Society and the National Environmental Education Foundation—enables meteorologists to reach close to 200 million households with environmental knowledge that viewers can apply to their daily lives. Jon Jensen, Executive Director of the Park Foundation, one of the major supporters of Earth Gauge, says, "What is most valuable about Earth Gauge is the way the program has identified an audience not usually reached with environmental information. Earth Gauge educates the meteorologists, who in turn educate the millions of people watching at home—it's a sterling example of how much leverage innovative environmental education programs can have."

to identify the most effective processes for implementing environmental education or to document its long-term impacts, particularly in tandem with other strategies. Such studies can be costly and, as noted by Peter Lavigne and David Orr,³⁶ many funders are reluctant to support knowledge development or basic research; therefore, to date, the field of environmental education has developed more from practice than from theory.

To the extent that environmental education is grounded in research, many of its underpinnings have been extrapolated from other fields (including psychology, sociology, and education) and are then applied in an EE setting. Although such borrowing may be appropriate in some situations, the challenges inherent in addressing environmental issues are unique—particularly affecting motivation toward, and removing barriers to, responsible environmental behavior. Therefore, basic research into effective environmental education techniques is especially urgent.

Intervention 2: Separate EE Strategies from Issue-Based Strategies

Support environmental education as a strategy separate from issues-based initiatives.

Environmental education is a powerful strategy in and of itself. However, EE is included mainly as a strategy within other, larger issues-based initiatives. Although this inclusion honors the holistic nature of environmental issues, it can dilute the power and obscure the overarching objectives of EE, leaving it vulnerable to the changing interests of the funding community. Environmental education is nimble enough to serve as both an overarching strategy and an issue-specific tactic. By recognizing environmental education as a legitimate and effective strategy that can be applied in a range of situations, funders can help guide the social movements and research agendas necessary to ensure that environmental education achieves its potential as an effective, powerful tool for change.

Intervention 3: Embrace the “In-Between” Nature of Environmental Education

Support environmental education as a strategy separate from, but complementary to, the more traditional funding categories of “environment” and “education.”

One of the greatest challenges for environmental education is that it often falls between two camps: the “environment” and “education.” Evidence of this awkward position can be seen in the lack of such a funding category at many foundations, government agencies, and

ENVIRONMENTAL EDUCATION IN ACTION: Environmental Education with Faith-Based Communities

Faith-based communities learn about climate change, energy and water conservation, land use, biodiversity, green building, and sustainability through the “Education for Advocacy” model created by the National Council of Churches Eco-Justice Program. For the past 25 years, the program has been providing its 35 member denominations and 100,000 congregations—and by extension, their more than 45 million congregants—with opportunities to receive education about and engage in action related to pressing environmental issues. “The Council’s eco-justice work makes the case for caring for all of God’s creation—both human and non-human,” says Cassandra Carmichael, director of the Washington office and the eco-justice program. “Connecting social and environmental issues in a uniquely moral and religious context is a powerful way to engage people of faith.” Among other accomplishments, the program has successfully leveraged the environmental education model—from awareness to action—to help congregations “green” their buildings and call on Congress to enact just, sound climate and energy policy.

corporate giving arms, and in the proportionate levels of support provided for the categories “education” (high) and “environment,” (modest) versus “environmental education” (much lower). If neither the education nor environment fields will fund EE at appropriate levels, perhaps philanthropy’s recognition of EE as a distinct category will open a new realm of possibilities for support.

Such recognition, combined with building a stronger research base for EE and providing the field with a more strategic voice, may ultimately help to strengthen our understanding of and confidence in this unique strategy.

Table 1: Top 15 Environmental Education Grants: 2003 to 2007³⁷

Rank	Grantmaker	EGA Member*	Grantee	Year	Amount	Description	Audience and Strategy
1	The Duke Endowment	No	Duke University, NC	2007	\$40,000,000	To endow 32 new faculty positions in Trinity College, Pratt School of Engineering and Nicholas School of Environment	Higher education, endowed faculty positions
2	Bill & Melinda Gates Foundation	No	Outward Bound	2003	\$12,567,173	For development of 20 small, new Expeditionary Learning High Schools in New York City, Denver, and other opportune localities to be determined	K-12, mix of outdoor education and formal education
3	Bill & Melinda Gates Foundation	No	Outward Bound, NY	2007	\$8,003,846	To develop second cohort of new Expeditionary Learning secondary schools in California	K-12, mix of outdoor education and formal education
4	Marin Community Foundation	Yes	Center for Ecoliteracy, CA	2007	\$4,450,000	To construct David Brower Center	Infrastructure
5	Walton Family Foundation, Inc.	No	Teton Science Schools, WY	2005	\$3,927,045	Continuing support	Operational support; informal, outdoor education
6	Bill & Melinda Gates Foundation	No	New York City Outward Bound Center, NY	2007	\$3,120,000	To add new New York City Outward Bound Expeditionary Learning in grade 6-12 schools to existing network of college-preparatory public schools in New York City that are based upon Outward Bound's principles and practices	K-12, mix of outdoor education and formal education
7	Walton Family Foundation, Inc.	No	Teton Science Schools, WY	2006	\$3,063,000	No description available.	Operational support; informal, outdoor education
8	The David and Lucile Packard Foundation	Yes	Audubon Nature Institute, LA	2006	\$3,000,000	Loan to support rebuilding of collections at zoo, aquarium and related park facilities in New Orleans as part of post-Hurricane Katrina grant making efforts	Infrastructure, family audience, informal (museum) education
9	The Ahmanson Foundation	No	California Science Center Foundation	2003	\$2,000,000	Toward constructing new wing west of existing building to be called World of Ecology	Infrastructure

Rank	Grantmaker	EGA Member*	Grantee	Year	Amount	Description	Audience and Strategy
9	Weingart Foundation	No	California Science Center Foundation, CA	2004	\$2,000,000	Toward Phase II of master plan, World of Ecology	Family audience, informal (museum) education
11	Communities Foundation of Texas, Inc.	No	Texas Discovery Gardens, TX	2005	\$1,760,157	Continuing support	Family audience, informal (museum) education
12	The Arthur M. Blank Family Foundation	Yes	Outward Bound, NY	2006	\$1,726,000	For general operating support and Outward Bound Training Initiative	Operational support; informal, outdoor education
13	The Ahmanson Foundation	No	California Science Center Foundation, CA	2004	\$1,500,000	World of Ecology exhibition	Family audience, informal (museum) education
13	Communities Foundation of Texas, Inc.	No	River Bend Nature Works, TX	2006	\$1,500,000	For expansion of Butterfly Conservatory	Family audience, informal (museum) education
15	Gordon and Betty Moore Foundation	Yes	World Wildlife Fund, DC	2007	\$1,372,000	For Education for Nature Program, which provides academic and applied training to graduate students and protected-area personnel throughout South America. Outcomes include protected area management training for park guards and two-year scholarships to individuals from the Andes-Amazon region for masters and doctoral degrees at universities in the region or abroad	Higher education, adult education, technical training, capacity building, leadership development

* "Yes" indicates the foundation was an EGA member at the time the grant was made.

NOTES

- * Unless otherwise specified, all websites were accessed September 13, 2009.
- 1 Unless otherwise noted, all data presented in this report were compiled from the Foundation Center's Foundation Directory Online using the keywords "environmental education," with grant information sought from the top 20,000 US foundations based on total giving. (The Foundation Center estimates that there are a total of 98,000 foundations, corporate donors, and grantmaking public charities.) For the purpose of reporting, one large internal grant—a \$40,000,000 grant from the Duke Endowment to Duke University—was omitted from a number of the amalgamated statistics as it was not awarded as a competitive grant and its amount was significantly higher than the next largest grant, creating an outlier that would substantially skew the data. (See Table 1.)
 - 2 *Foundation Giving Trends 2009*. Foundation Center: New York, NY.
 - 3 Lucas, A. M. 1972. *Environment and Environmental Education: Conceptual issues and curriculum implications*. Unpublished doctoral dissertation. Columbus, OH: The Ohio State University.
 - 4 Monroe, M., Andrews, E. and Biedenweg, K. 2007. A framework for environmental education strategies. *Applied Environmental Education and Communications* 6(3): 205-216.
 - 5 These three goals were articulated in the Tbilisi Declaration (1978), which built on the 1976 Belgrade Charter. Both documents were created by consensus of environmental educators from around the world, gathering at conferences sponsored by UNESCO. The Belgrade Charter and Tbilisi Declaration continue today to form the basis for environmental education worldwide.
 - 6 NSF's *Learning Science in Informal Environments: People, Places, and Pursuits* (2009) provides a comprehensive overview of settings, audiences, and strategies for informal learning: www.nap.edu/catalog.php?record_id=12190
 - 7 Scott, W., and Gough, S. (2003). Rethinking relationships between education and capacity—building: Remodelling the learning process. *Applied Environmental Education and Communication*, 2 (4), 213-219.
 - 8 Initiated in 1993, the National Project for Excellence in Environmental Education has developed a series of guidelines that set standards for high-quality environmental education. Developed by diverse teams of environmental educators and reviewed by thousands of professionals, the standards address topics including the preparation of pre-service and in-service classroom teachers; the preparation of nonformal environmental educators; environmental education curriculum materials; and learner guidelines for grades K–12. The guidelines publications are available at: www.naaee.org/npeee.
 - 9 Kellert, S. R. and Wilson, E. O., eds. 1995. *The Biophilia Hypothesis*. Washington, DC: Island Press; Kellert, S. R. 1995. *The Value of Life: Biological diversity and human society*. Washington, DC: Island Press.
 - 10 Millennium Ecosystem Assessment: www.millenniumassessment.org/en/index.aspx; 2009 Gallup Poll on Outlook on Environmental Quality: www.gallup.com/poll/117769/Outlook-Environmental-Quality-Improving.aspx.
 - 11 Schwinn, E. 2007. Growing Number of Charities Bring the Environment Into Their Appeals. *Chronicle of Philanthropy*, 20(2): November 1; Environmental Grantmakers Association. 2009. *Tracking the Field, Volume 2*. New York: EGA.
 - 12 Jack Chin of the Funders Forum on Environment and Education reported similar statistics from 2000: He found that 1,100 of the 10,500 largest foundations (10.5 percent) had program areas in both environment and education, while only 29 of the 10,500 (0.29 percent) listed "environmental education" as a priority field of interest.
 - 13 *Foundation Giving Trends 2009*. Foundation Center: New York, NY.
 - 14 Foundation Center's Statistical Information Service. 2007. *Distribution of Foundation Grants by Subject Categories, Circa 2007*. http://foundationcenter.org/findfunders/statistics/pdf/04_fund_sub/2007/10_07.pdf.
 - 15 *Foundation Giving Trends 2009*. Foundation Center: New York, NY. Based on all grants of \$10,000 or more awarded by a sample of 1,339 larger foundations. Dollar figures in thousands; because of rounding, figures may not sum to 100 percent.
 - 16 It is important to note that the 4.3 percent that went to environmental education was then further divided among the different types of environmental education—formal (K-12 and higher education), informal, community-based—and with a range of audiences, including youth and adults.
 - 17 This was due, in part, to two major grants, one to Duke University for \$40 million and another to Stanford University for \$32 million.
 - 18 This figure is from the Foundation Center, *Foundation Giving Trends, 2009*. Based on all grants of \$10,000 or more awarded by a sample of over 1,000 larger foundations. Dollar figures in thousands; because of rounding, figures may not total 100 percent.
 - 19 It is important to consider these figures in context and, in particular, to note the nature of the efforts being funded, in light of the diverse audiences and programmatic types incorporated under the header of "environmental education." Second Nature suggests several important "high leverage strategies for rapidly advancing the sustainability movement in higher education," which include a focus on engaging the business sector in hiring sustainability-literate university graduates, aligning faculty teaching with sustainability principles through professional development, and encouraging campus-wide commitments to green buildings and renewable energy, among others. (Elder, J. 2009. *Strategic Opportunities to Advance the Sustainability Movement in Higher Education*. Manchester, MA: Campaign for Ecoliteracy.)

- 20 See, for example, Project WET, one of the most far-reaching environmental education initiatives in the United States: projectwet.org. See also the materials produced through the EPA's Office of Watershed Education: www.epa.gov/ow/education.html.
- 21 Foundation Center Online Directory, 2007.
- 22 US EPA's Office of Environmental Education, *Tips for Developing Successful Grant Applications*: www.epa.gov/enviroed/granttips.html.
- 23 Environmental Education Grants Awarded. EPA Office of Environmental Education. www.epa.gov/enviroed/grants/index.html
- 24 www.usaspending.gov
- 25 Committee Encouraging Corporate Philanthropy. 2009. *Giving in Numbers: 2008 Edition*. Available online: www.corporatephilanthropy.org/pdfs/benchmarking_reports/GivinginNumbers2008.pdf.
- 26 Data from Corporate Giving Online database, available online at: cgonline.foundationcenter.org. Searched for all grants with subject listed as "environmental education."
- 27 The report is available online at www.neefusa.org/businesses/es_2009.htm.
- 28 Personal communication, National Environmental Education Foundation's Business and Environment Program, September 21, 2009.
- 29 See, for example: National Environmental Education Foundation's report on The Engaged Organization, available online at: www.neefusa.org/BusinessEnv/EngagedOrganization_03182009.pdf; the National Council of Churches' Eco-justice program: www.nccecojustice.org; the Woods Institute for the Environment's Leopold Leadership Program: leopoldleadership.stanford.edu; and the Children and Nature Network's Family Resource Program, Nature Rocks: www.naturerocks.org.
- 30 For a thoughtful discussion of the relationship between environmental education and science education, and its potential morphing through the transition to education for sustainability, see www.aare.edu.au/07pap/gou07263.pdf.
- 31 For more on California's Environmental Education Initiative, see: www.calepa.ca.gov/Education/EEI/Curriculum/.
- 32 Dietz, T. and Stern, P. 2002. *New Tools for Environmental Protection: Education, Information, and Voluntary Measures*. Washington, DC: National Academies Press.
- 33 Heimlich, J.E., and Ardoin, N.M. 2008. Understanding Behavior to Understand Behavior Change: A Literature Review. *Environmental Education Research*. Vol. 14, No. 3, pp. 215-237.
- 34 See the National Project for Excellence in Environmental Education: www.naaee.org/npeee.
- 35 National Environmental Education Foundation website: <http://www.neefusa.org/programs/earthgauge.htm>
- 36 Lavigne, P., and Orr, D. 2005. Rethinking Green Philanthropy: riversfoundation.org/ee/publications/Rethinking_Green_Philanthropy_-_AP_mag__5b_.pdf.
- 37 Data for this table were collected from the Foundation Center's Foundation Directory Online using the keywords "environmental education." The level of database used for this search contained grant information from the top 20,000 US foundations based on total giving.

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