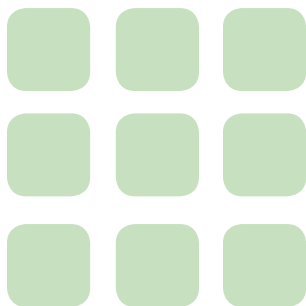


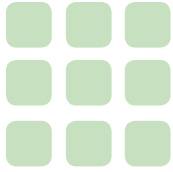
THE CASE FOR
AN EXECUTIVE ORDER
ON

Environmental Literacy



Prepared by the

No Child Left Inside® Coalition
www.nclcoalition.org



Executive Summary

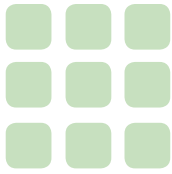
Federal support for environmental education in both policy and funding is woefully inadequate and reaches only a relatively small portion of the nation's population. The U.S. Department of Education, the agency responsible for coordinating federal education programs, promoting student achievement, and ensuring our global competitiveness, has been “mostly absent”¹ from environmental education. The United States ranks near the bottom of other developed nations with respect to the environmental literacy of our students. The consequence is an American public fundamentally unprepared for the environmental and energy challenges and economic opportunities of our times. In his 2011 State of the Union message, President Barack Obama noted: “...if we want to win the future—if we want innovation to produce jobs in America and not overseas—then we also have to win the race to educate our kids.” Environmental literacy is an important part of winning that race. An environmental literacy executive order would help to:

- **Advance the environmental literacy and job skills of the American public by making them priorities in the Administration's policy agenda;**
- **Advance the Administration's STEM (science, technology, engineering, and math) education, student achievement, and environmental stewardship goals;**
- **Ensure that environmental literacy is incorporated as a priority part of Federal agencies' missions, including the U.S. Department of Education; and**
- **Ensure that existing environmental, natural resource, conservation, outdoor, and energy education programs at the Federal level function efficiently in a systematic and coordinated manner to reach the greatest number of citizens and support the efforts of states to develop and implement environmental literacy plans at the pre-K–12 levels.**

Since field-based learning experiences are a critical component of environmental education, an executive order could also help to achieve the Administration's goals of reconnecting Americans to the great outdoors and raising a healthier generation of citizens. In addition, it would help advance the goals of the sustainability education summit authorized in the Higher Education Opportunity Act of 2008.

Either Earth Day 2011 or the National Environmental Education Week (the week before Earth Day) would be an ideal opportunity for the Administration to announce an executive order to advance environmental literacy.

1. U.S. Secretary of Education Arne Duncan, Sept. 21, 2010 speech before the National Sustainability Education Summit, Washington, D.C.



Introduction

In an August 1970 report to Congress on the state of the nation's environment, President Richard Nixon noted:

It is also vital that our entire society develop a new understanding and a new awareness of man's relation to his environment—what might be called “environmental literacy.” This will require the development and teaching of environmental concepts at every point in the education process.

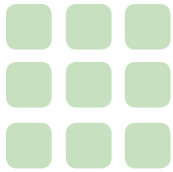
To begin implementing this vision, Nixon signed the Environmental Education Act into law in October 1970, establishing an Office of Environmental Education within the then-Department of Health, Education, and Welfare and authorizing funding to support the efforts of state and local educational agencies, universities, and other public and private non-profit institutions to carry out environmental education programs, train teachers, and develop curricula.

Today, more than four decades later, the vision of environmental literacy has yet to be realized. Despite strong public, bipartisan support, and repeated recommendations by the National Academy of Sciences and other science and education organizations, the Federal government lacks a coherent, coordinated policy to make environmental literacy a priority across relevant Federal agencies. Environmental education is still considered an additional or elective subject in much of pre-K–12 curriculum. It is approached primarily as a means to encourage citizen stewardship and environmentally sustainable behaviors and decisions, not to achieve or support other important education, “world-class” workforce training, or health goals. Moreover, many Federal programs focus on environmental education in informal learning environments when, in fact, both formal and informal environmental education are desperately needed to advance environmental literacy and expand the academic pipeline for STEM (science, technology, engineering, and math) courses in high school and college.

Education and Job Skills for the 21st Century

THE NEED FOR A CONCERTED AND SYSTEMATIC APPROACH TO ENVIRONMENTAL EDUCATION

The national need for environmental education is well established but is perhaps more important today than ever before. In the face of a global economic downturn, a new economy is emerging that offers tremendous opportunities to create new jobs in manufacturing, transportation, construction, services, energy, and other sectors and to help transform the U.S. economy and gear it toward a sustainable future. The global market for environmental products and services alone—renewable energy generation and energy efficiency, recycling and waste management, water supply, and other resource management—is projected to double by 2020. In the July 2009 report *Preparing Workers of Today for the Jobs of Tomorrow*, the President's Council of Economic Advisers (CEA) noted that environmental-related occupations are expected to experience tremendous growth over the next decade.



Critical to the success of this new economy with its job opportunities is a highly educated workforce with the requisite skills and knowledge of environmental and energy issues in virtually every field from administration to science and technology. Indeed, Charles W. Moorman, chairman and chief executive officer of the Fortune 500 company Norfolk Southern stated:

Having an environmentally literate workforce is critical to our bottom line and the ongoing strength of our company. To be ready for the 21st century workforce and for the transition to a green economy, we believe that every student must be prepared with basic environmental knowledge and skills and environmental education must begin in our nation's elementary and secondary schools.²

Unfortunately, by many indicators, the United States is falling behind other nations in preparing students and other citizens with the educational tools necessary to compete in this arena.

International comparisons of student performance, as measured by the Trends in International Mathematics and Science Study (TIMSS) and Programme for International Student Assessment

(PISA), indicate that students in many other developed countries not only perform better than American students in science and other subjects, but are more environmentally literate. In a 2003 report, the National Science Foundation's Advisory Committee for Environmental Research and Education concluded "creating a scientifically informed citizenry requires a concerted, systematic approach to environmental education ..."



If we want to have a green jobs economy we need to give our young people the skills they need to get these good paying jobs that will become more and more available and attractive in the coming decade. Indeed, environmental literacy and education are at the very foundation of a green job economy. We cannot have one without the other."

FORMER U.S. SECRETARY OF EDUCATION RICHARD RILEY (1993-2001)

There are other reasons for such an approach to environmental education:

Environmental education has been demonstrated to increase student achievement and engagement in STEM and other core curricula.

A growing body of educational research and increasing examples of high-performing schools demonstrate the strong connections between student achievement in science, reading, math and other subjects when environmental education is integrated into the curriculum.

The Crossroads Charter School in Baltimore, Maryland, for example, is showing notably strong academic results with its focus on hands-on, project-based environmental learning experiences.

Eighty-nine percent of this middle school's students come from poverty stricken neighborhoods and more than 80 percent of entering sixth graders perform below grade level in reading and math. Yet the school continues to excel on the annual state assessment. It is Baltimore's only public middle school to make adequate yearly progress (AYP) every year since 2004. Crossroads is part of a growing network of more than 150 public charter schools that focus on environmental literacy.

2. Letter to U.S. Secretary of Education Arne Duncan, March 3, 2010.



Minnesota's Prior Lake-Savage Area Schools have integrated environmental education content into their K-12 core curricular areas. The results, according to the schools' superintendent, have "... not only been the development of critical-thinking students, more environmentally literate students and staff, but also top state scores on the Science Minnesota Comprehensive Assessment."



Enhancing students' environmental literacy is a proven way to expand the academic pipeline for STEM subjects and is increasingly seen as an innovative way to give students the sense of wonder and excitement so essential to encouraging scientific inquiry."

DANIEL BISACCIO,
DIRECTOR OF SCIENCE
EDUCATION,
BROWN UNIVERSITY

Environmental education has been found to enhance critical thinking and problem solving skills while engaging students and bringing enthusiasm to learning.

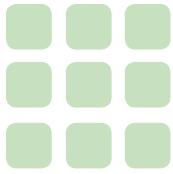
Ten years ago, Oil City Elementary School, a Title I school in rural northwest Louisiana, was performing poorly on state school performance scores and facing declining enrollment. To turn the school around, teachers and school administrators worked together to create a magnet school which uses the environment—with an emphasis on hands-on, outdoor learning—to teach math, language arts, and other subjects. Oil City Elementary is now one of the most improved schools in the state with significant increases in enrollment, fewer student absences, and scores that surpass the state average. Quoted in a recent article, the school's environmental science facilitator said, "having these kids outdoors and actively engaged in programs gives them a real world experience. Now they look forward to school and to each new lesson."

The National Science Board of the National Science Foundation noted in its report *Environmental Science and Engineering for the 21st Century* that "the twin goals of learning are to acquire knowledge and gain skills such as problem solving, consensus building, information management, communication, and critical and creative thinking. Environmental issues offer excellent vehicles for developing and exercising many of these skills using a systems approach." The study concluded that "changes should be made in the formal educational system to help all students, educators, and educational administrators learn about the environment, the economy, and social equity as they relate to all academic disciplines and their daily lives."

Hands-on environmental education is an engaging way to encourage scientific inquiry and innovation and to prepare students for college and the job market.

At Ponaganset High School in Rhode Island, the school's teachers, principal, and superintendent have energized their science courses and community support for their school by combining text book knowledge with hands-on practical skills in the area of renewable energy technologies. Students created a fuel-cell-powered band, developed and drove a biodiesel-powered vehicle across the country, and converted a replica 1923 Ford Model T into an electric vehicle.

At Environmental Charter High School in southern Los Angeles, hands-on environmental science, ecology, and field research is incorporated into the curricula. Among other things, students make biodiesel, compost, and harvest rain water and in the process are achieving extraordinary results. Some 80 percent of students come from low-income households and from families who have never attended college. Today more than 90 percent of graduates are accepted to four-year colleges.



These are but two examples of K–12 schools that underscore the many benefits of environmental education in preparing students for college, for addressing real-world issues, and providing the interdisciplinary skills necessary to contribute to a 21st century economy.



[We] strongly support environmental education as a way to instill environmental literacy in our nation’s pre-K–16 students. It should be a part of the school curriculum because student knowledge of environmental concepts establishes a foundation for their future understandings and actions as citizens. Central to environmental literacy is the ability of students to master critical-thinking skills that will prepare them to evaluate issues and make informed decisions regarding stewardship of the planet. The environment also offers a relevant context for the learning and integration of core content knowledge, making it an essential component of a comprehensive science education program.”

POLICY POSITION OF THE
NATIONAL SCIENCE TEACHERS
ASSOCIATION

Community colleges and universities across the country are also responding to demands from students and the changing economy and job market by offering new courses and degree programs in renewable energy, sustainability, environmental engineering, and related environmental fields of study.

President Obama, in his 2011 State of the Union message, noted, “...if we want to win the future—if we want innovation to produce jobs in America and not overseas—then we also have to win the race to educate our kids.”

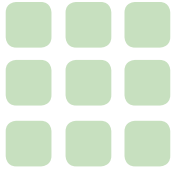
Environmental education is a vital part of the solution to winning that race.

Environmental education can serve as an important stimulus to increase physical activity and promote healthy lifestyles.

Getting students outdoors to experience their natural world, exercise and play can help to prevent obesity, alleviate attention deficit disorders and address other related health problems. According to Dr. Robert Lawrence, professor of environmental health sciences at the Johns Hopkins University’s Bloomberg School of Public Health:

[N]ature is important to healthy development in children in every major area of growth: intellectual, social, spiritual, and physical. Play and learning in nature is especially important for developing capacities for creativity, problem-solving, and intellectual development. Integrating environmental education linked to subject matter in the classroom to exploration of the natural environment can serve as an important stimulus to increase physical activity.

Studies have found that children today spend half as much time outside as kids did just 20 years ago and, on average, spend six and a half hours every day plugged into electronic media. These early experiences, through formal and informal systems, influence a lifetime of behavior.



Federal Leadership Is Needed and Crucial

FEDERAL SUPPORT FOR ENVIRONMENTAL EDUCATION IN BOTH POLICY AND FUNDING IS WOEFULLY INADEQUATE

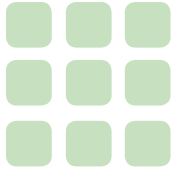
Today some 14 Federal agencies administer a wide range of formal and informal environmental or environmentally-related (energy, conservation, natural resource, or outdoor) education programs or activities aligned to each agency’s separate missions. There is large variation in the kinds of environmental education initiatives offered and in the goals, amounts of funding assistance provided, and the audiences served by the programs.

The Environmental Protection Agency (EPA) and National Oceanic and Atmospheric Administration (NOAA) manage the primary federal grant programs supporting both formal and informal environmental education. These programs, authorized under the National Environmental Education Act of 1990 and the America Competes Act, respectively, work to improve understanding and stewardship of the environment. The programs provide important assistance to a broad array of audiences, including K–12 students, teachers, post-secondary and graduate students, and the general public. Additionally, a dozen other federal agencies, including the U.S. Departments of Agriculture, Interior, and Energy, NASA, and the National Science Foundation, support research fellowships, web-based and other educational tools, curriculum development, internships, awards, studies, or other programs that are directly or indirectly related to environmental, sustainability, or energy education. Many of these programs are focused at higher education audiences.

Federal support for all these programs is limited and serves only a relatively small portion of the population. In Fiscal 2010, EPA awarded \$3.4 million and NOAA awarded approximately \$17 million in competitive grants through each respective agency’s environmental education programs. EPA estimates that each year, the agency’s environmental education grants reach 50,000 students, 6,000 teachers, and 100,000 in the general public. NOAA estimates that grants awarded under the agency’s Fiscal 2010 Bay Watershed Education and Training Program reached 57,000 students and more than 2,400 teachers nationally. NOAA grants to aquariums awarded under the agency’s Fiscal 2009 Environmental Literacy Grants Program reach more than 11 million visitors annually.

While these grants are only a snapshot and do not represent the total reach of the agencies’ environmental education programs and activities, they do provide a sense of the relative scale. With the U.S. population now exceeding 300 million, including approximately 77 million pre-K–20 students and more than 3.6 million K–12 teachers, clearly much more needs to be done to achieve environmental literacy goals.

Moreover, these programs and initiatives are not well integrated into federal education or other goals nor are part of a comprehensive, coordinated education policy that supports state and local education systems. To date, the U.S. Department of Education—the agency that “establishes policy for, administers and coordinates most federal assistance to education” —has been “mostly absent” from efforts to educate students about the environment and prepare them to participate

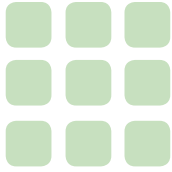


in a sustainable economy, according to U.S. Secretary of Education Arne Duncan. Indeed, the Department of Education's policies under the No Child Left Behind Act have had the unintended consequences of actually discouraging state and local environmental education programs and valuable hands-on field experiences previously carried out in many schools and school districts throughout the nation.

To his credit, the Secretary Duncan has recognized this deficiency and, as part of the Blueprint for Reform of the Elementary and Secondary Education Act, has included environmental education in a new competitive grant program to promote a "well-rounded education." The new program proposes approximately \$250 million in grants to states, high-need districts, and non-profit partners to strengthen the teaching and learning of a variety of subjects, including American history, civics, foreign languages, the arts, financial literacy, and—for the first time—environmental education. It is an important step forward in increasing the support, participation, and cooperation by the U.S. Department of Education to help enhance environmental literacy—but only a step.

Leadership by the Secretary of Education, the Secretary of Interior, and other Administration cabinet and sub-cabinet agencies is also needed to ensure a cohesive, coordinated environmental literacy policy across the Federal government that supports not only stewardship goals, but national education, workforce development, outdoor education, healthy kids/healthy adults, energy, and economic sustainability goals. Strategies must be developed to leverage the unique capabilities of each Federal agency carrying out environmental education programs and activities and to encourage and support state efforts to develop and implement environmental literacy plans. Such a coordinated environmental literacy policy would:

- Help ensure that federal funding is spent efficiently to support the education, environmental, economic sustainability and workforce-develop goals listed above;
- Ensure that environmental education is effectively and fully integrated into the curriculum and with other efforts to improve student performance across disciplines;
- Ensure that environmental education programs reach all students regardless of their income, race, ethnic or language background, or disability status;
- Help to expand the academic pipeline for STEM-related subjects;
- Ensure that educators have the required skills and training to teach environmental education content; and
- Preserve states' authority to determine their environmental education curriculum.



Support for Environmental Education Is Strong

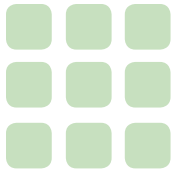
ENVIRONMENTAL EDUCATION—AND ITS ENVIRONMENTAL LITERACY OUTCOME— HAS BIPARTISAN SUPPORT AND THE BACKING OF A 50-MILLION-STRONG COALITION

In 2008, Maryland Governor Martin O'Malley issued the nation's first gubernatorial executive order creating the Maryland Partnership for Children in Nature. The partnership was charged with developing and implementing an environmental literacy plan and a plan to provide youth with structured and unstructured opportunities for play, outdoor recreation, exercise, learning, and scientific study.

The plan, which outlines a comprehensive strategy to ensure environmental literacy and connect children to nature, has been heralded as a national model. Today 46 other states, through gubernatorial executive orders, state laws or other means, are in the process of developing similar environmental literacy and outdoor plans and strategies. These states are looking to the Federal government for assistance in developing and carrying out these environmental literacy plans.

In the 110th Congress, the U.S. House of Representatives, with a strong bipartisan vote of 293 to 109, approved the No Child Left Inside Act to advance environmental literacy at the elementary and secondary levels. Membership in the national No Child Left Inside Coalition, with its mission to ensure that every student graduates from high school environmentally literate, today exceeds 50 million people. The coalition is comprised of 2,000 environmental, educational, business, health, faith-based, recreational, and other organizations from all 50 states.

As part of the Higher Education Opportunity Act of 2008, "University Sustainability Programs" were enacted to promote the development and implementation of sustainability curricula, best practices, and academic programs at colleges and universities. More than 220 colleges and universities, higher education associations, non-governmental organizations, and corporations supported these programs.



A Proposed Executive Order

The proposed Environmental Literacy Executive Order will accomplish five goals:

1

Establish as Administration policy support for environmental, outdoor, and sustainability education as—

- an integral part of a complete educational experience for students at the elementary, secondary and higher education levels,
- a pathway to college and careers in the emerging global economy, and
- part of a learning process to reengage our citizens—and particularly our youth—in outdoor activities and learning experiences that involve both formal and informal education.

2

Direct each Federal agency identified in the Executive Order to make environmental literacy part of its mission (to the greatest extent practicable and permitted by law) and to develop and implement appropriate policies, activities, and programs to advance formal and informal environmental, outdoor, and sustainability education in a systemic and coordinated manner.

3

Create a President's Council on Environmental Literacy, chaired by the Secretary of Education and comprised of nine additional departments and agencies, to advise and recommend to the President opportunities and strategies to promote the education, job skill training, health, and well-being of America's youth and adults through formal and informal environmental and sustainability education and outdoor activities. Modeled on Executive Order 13530 (President's Advisory Council on Financial Capability), Executive Order 13508 (Chesapeake Bay Protection and Restoration), and similar presidential and gubernatorial executive orders, the council would:

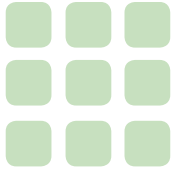
- Assess current formal and informal environmental literacy programs and activities carried out by the Federal government;
- Develop a comprehensive and coordinated plan for enhancing and coordinating environmental educational opportunities both in the classroom and outdoors for pre-K–20 students to foster improved environmental literacy, education, health, and workforce training goals; and
- Report to the President on strategies and recommendations to carry the executive order.

4

Establish an Advisory Committee on Environmental Literacy comprised of 21 individuals representing a broad diversity of stakeholders experienced in environmental, outdoor and sustainability education to review, provide advice, and make recommendations to the council in the development of the assessments, plans, and strategies and the report to the President.

5

Engage state education agencies, administrators, educators, students, and other stakeholders in the development of a systematic approach to environmental education as recommended by the National Academy of Sciences.



Conclusion

An Executive Order on Environmental Literacy offers a tremendous opportunity for the President to demonstrate leadership on an issue that is critical to ensuring America's competitiveness in the emerging global economy; the stewardship of our environment; the educational achievements of our students in STEM and other core subjects; and the health and well-being of our citizens. An environmental literacy executive order would help to—

- Advance the environmental literacy and job skills of the American public by making them priorities in the Administration's policy agenda;
- Advance the Administration's STEM education, student achievement and environmental stewardship goals;
- Ensure that existing environmental, natural resource, conservation, outdoor, and energy education programs at the Federal level function in a systematic and coordinated manner to reach the greatest number of citizens; and
- Support the efforts of states to develop and implement environmental literacy plans. It would also help to achieve the Administration's goals of reconnecting Americans to the great outdoors and raising a healthier generation of citizens; advance the goals of the sustainability education summit, and advance the President's energy agenda.

Charles A. Stek

Policy Director

No Child Left Inside Coalition



The No Child Left Inside® Coalition is comprised of 2,000 educational, business, environmental, health, faith-based, outdoor recreation, and other organizations from all 50 states and representing more than 50 million people. Our policy goal is to advance the environmental literacy of our youth. We seek to ensure that every student is prepared with the knowledge and skills necessary for college and career readiness and to be competitive in the 21st century economy, through formal and informal environmental education and outdoor learning experiences.

This white paper was made possible through a generous grant from the Keith Campbell Foundation for the Environment.