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Executive Summary:
Environmental Education and the Reauthorization of the No Child Left Behind Act

For more than three decades, environmental education has been a growing part of effective instruction in America’s schools. Responding to the need to improve student achievement and prepare students for the 21st century economy, schools throughout the nation now offer some form of environmental education. Thirty million students and 1.2 million teachers annually are involved in programs ranging from environmental science courses to an interdisciplinary approach that uses the environment as an integrating theme throughout the entire curriculum that has been embraced by more than 300 environmental charter and magnet schools nationwide.

The growing use of environmental education as part of regular classroom instruction is due in part to widespread recognition of two facts: 1) Today’s youth must be prepared to understand and devise sustainable solutions to increasingly complex environmental issues, and 2) Environmental education increases student engagement in learning, which leads to a measurable positive impact on student achievement.

Yet, environmental education is facing a national crisis. Many schools are being forced to scale back or eliminate environmental programs. Fewer and fewer students are able to take part in related classroom instruction and field investigations, however effective or popular. State and local administrators and teachers point to two factors behind this recent and disturbing shift: the unintended consequences of the No Child Left Behind Act (NCLB), and a lack of funding for these critical programs.

Conceptually, NCLB has taken a positive step forward by giving schools and teachers greater authority and flexibility in exchange for more accountability regarding student performance. However, the law’s high-stakes emphasis on testing has intensified the focus on reading and mathematics, to the detriment of other important subject areas. As a result, many schools have largely abandoned environmental education programs to invest more time and resources in math and reading instruction. In the classroom, NCLB causes science teachers to bypass environmental science when it does not appear to relate directly to state tests. Beyond the classroom, administrators are directing teachers to forego valuable, hands-on field investigations rather than take time away from test-related instruction.

Such narrowing of the curriculum is a disservice to students at all grade levels. Environmental education connects classroom learning to the real world, which often generates keen student engagement and helps to prepare students for the challenges they will face after leaving school. As expressed by the National Science Teachers Association, “The environment offers a relevant context for the learning and integration of core content knowledge, making it an essential component of a comprehensive science education program.” When integrated into the core curricula or used as an integrating theme across the curriculum, environmental education demonstrably improves student achievement not only in science, but also in reading (sometimes spectacularly), math, and social studies.
The national crisis facing environmental education is compounded by a lack of funding. The National Environmental Education Act, the primary source of federal support for K-12 environmental education, provided only $6.6 million last year, an average of only $132,000 per state.

A New Global Imperative

The reality is that the United States can no longer afford to treat environmental education as optional. Across the globe, problems caused by climate change, pollution, and resource depletion are increasingly acute. These are no longer challenges to be debated by some generation in the distant future; rather, they are issues that will soon confront today's young people. Only those countries far-sighted and innovative enough to find ways to prosper within the constraints of nature will remain sustainable and economically competitive.

The American public recognizes that the environment is already one of the dominant issues of the 21st century. A National Science Foundation panel echoed that conviction, noting in 2003 that “in the coming decades, the public will more frequently be called upon to understand complex environmental issues, assess risk, evaluate proposed environmental plans and understand how individual decisions affect the environment at local and global scales. Creating a scientifically informed citizenry requires a concerted, systemic approach to environmental education…”

In the private sector, business leaders also increasingly believe that an environmentally literate workforce is critical to their long-term success. They recognize that better, more efficient environmental practices improve the bottom line and help position their companies for the future.

The reauthorization of NCLB this year provides Congress with the opportunity to make changes that will strengthen the Act and better prepare students for real-world challenges and careers. NCLB must provide schools and school systems with the incentives, flexibility, and authority to develop and deliver environmental education programs by:

1. Including environmental science as part of the existing NCLB science assessment, Title I (Section 1111);
2. Creating a separate environmental education grant program for teacher training, Title II (new Sections 2501-3);
3. Creating a separate environmental education grant program to help build state and national capacity, Title V (Sections 5621-5627);
4. Including environmental education as an authorized program in the Fund for the Improvement of Education, Title V (Sections 5411); and,
5. Identify environmental education as an eligible activity for the existing pool of teacher training funds, Title II (Sections 2113 and 2123).
Executive Summary: Talking Points

- NCLB's goals for closing the achievement gap are laudable, and including environmental instruction, will only help to close this gap.

- Changes proposed to the reauthorized No Child Left Behind Act (NCLB) would provide teachers and schools systems with greater authority, flexibility, and incentive to incorporate environmental education into core subjects and increase funding for environmental education.

- These changes are necessary because NCLB's emphasis on high-stakes testing in reading and math has compelled teachers to reduce or eliminate time spent on effective, high quality environmental education programs and related instruction.

- Before NCLB, use of classroom and field-based environmental education programs to teach core subject material was on the rise.

- Narrowing the curriculum in such a way has a negative impact on student achievement and threatens the quality of our nation's future workforce, global economic competitiveness, and the protection of our precious natural resources.

- Environmental education provides obvious benefits in preparing our nation's youth as responsible citizens who will value and protect America's resources and landscapes.

- What is less obvious is the profound impact that environmental education has on student achievement. Research shows that environmental education has a measurably positive impact not only on student achievement in science, but also in reading, math, and social studies.

- Business leaders across the country recognize the increasing importance of environmental literacy and innovation to profitability and long-term success. A 21st century workforce needs the knowledge and skill to understand and address complex environmental issues.

- Incorporating environmental content into the NCLB assessment program will ensure that related instruction is given priority. At the same time, providing increased funding for environmental programs will allow schools to pursue instruction that engages students, supports achievement, and addresses the basic goals of NCLB.
Environmental Education and No Child Left Behind
April 2007

Background: What is Environmental Education?

Environmental Education is the study of the relationships and interactions between
dynamic natural and human systems.
Environmental Literacy is the successful outcome of such study.
Environmental Science focuses specifically on the scientific aspects of environmental
education.

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Characteristics of Environmental Education . . .

- Includes learning in the field as well as the classroom
- Incorporates the teaching methods of outdoor education, experiential
  education, and place-based education
- Is inherently interdisciplinary
- Promotes school/community partnerships
- Is hands-on, student-centered, inquiry driven, engages higher level thinking
  skills, and relevant to students everyday lives
- Develops awareness, increases knowledge, builds skills, and creates the
  capacity for stewardship and good citizenship regarding the environment upon
  which we depend for life support.
- Helps address the causes of “nature deficit disorder”
- Boosts student achievement in math, science, reading, writing and social
  studies¹

Characteristics of Environmental Science . . .

- Integrates core concepts and principles of biology, chemistry, earth systems
  science, economics, geography and physics.
- Addresses current issues such as global climate change, sustainable growth,
  human health, biodiversity, air and water pollution, conservation of natural
  resources, waste management, etc.

Background: Why is Environmental Education Important?

Our nation's future relies on a well-educated public to be wise stewards of the very environment that sustains us, our families and communities, and future generations. It is environmental education which can best help us as individuals make the complex, conceptual connections between economic prosperity, benefits to society, environmental health, and our own well being. Ultimately, the collective wisdom of our citizens, gained through education, will be the most compelling and most successful strategy for environmental management.  

Yet studies consistently reveal that the U.S. public suffers from a tremendous environmental literacy gap that appears to be increasing rather than decreasing. For example, two-thirds of the public fail even a basic environmental quiz and a whopping 88 percent of the public fail a basic energy quiz. These same studies found that 45 million Americans think the ocean is a source of fresh water and 130 million believe that hydropower is America's top energy source.

A. Environmental education increases student engagement in science. In our schools, research has shown enormous benefits from environmental education. When integrated into a science curriculum, environmental education demonstrably improves student achievement in science. Such an increase is likely due to the fact that environmental education connects classroom learning to the real world. Students, when given a choice, will gravitate towards environmental science. Science fair administrators note that 40 percent of all science fair projects relate directly to the environment, and the Corporation for National and Community Service reports that more than 50 percent of the service-learning programs they fund are focused on the environment.

The relative lack of environmental education in the U.S. is one leading cause for why our students' performance in science compared to other countries does not meet our expectations (see "The Influence of Environmental Education on U.S. Performance in TIMSS vs. NAEP" included in this book).

B. Environmental education improves student achievement in core subject areas. When integrated into the core curricula or used as an integrating theme across the curriculum, environmental education has a measurably positive impact not only on student achievement in science, but also in reading (sometimes spectacularly), math,

1 National Environmental Education Advisory Council, Report to Congress, September 2000


and social studies. The same study found that schools that taught the core subjects using the environment as an integrating context also demonstrated:

- reduced discipline and classroom management problems;
- increased engagement and enthusiasm for learning; and,
- greater student pride and ownership in accomplishments.

Even more importantly for many, environmental education employs and enhances critical thinking and basic life skills. The National Science Board of the National Science Foundation confirmed the importance of environmental education to student learning in their 2000 report, *Environmental Science and Engineering for the 21st Century*: “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...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.”

Likewise, the 2005 *Report to Congress* submitted by the National Environmental Education Advisory Council on the status of environmental education in the United States finds that “environmental education – with its emphasis on critical thinking, interdisciplinary teaching, and learner achievement – is also helping to meet educational reform goals.”

C. Environmental education provides critical tools for a 21st century workforce. The vast majority of Americans are convinced that the environment will become at least one of the dominant issues and challenges of the 21st century, as the growing needs of the growing global population increasingly presses up against the limits of the earth’s resources and ecosystems. The National Science Foundation’s Advisory Committee for Environmental Research and Education confirmed this in a 2003 report, noting that “in the coming decades, the public will more frequently be called upon to understand complex environmental issues, assess risk, evaluate proposed environmental plans and understand how individual decisions affect the environment at local and global scales. Creating a scientifically informed citizenry requires a concerted, systematic approach to environmental education.”

At the same time, business leaders increasingly believe that an environmentally literate workforce is critical to their long term success and profitability, with better environmental practices and improved efficiencies impacting positively on the bottom line while helping to better position and prepare their companies for the future. Charles O. Holliday, Jr., Chairman and CEO of DuPont, speaks for a growing number of his peers in declaring that: “an environmentally sustainable business is just

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good business, given the growing concern for environmental problems across America. A key component of an environmentally sustainable business is a highly educated work force, particularly involving environmental principles.” As one example on the micro scale, the National Environmental and Training Foundation estimates that environmental education about topics such as energy, water and waste management, improved employee health, cleaner working conditions, and recycling would save small and medium sized businesses alone at least $25 billion/year.

D. Environmental Education helps address “nature deficit disorder”. A recent study found that children today spend an average of 6 hours each day in front of the computer and TV but less than 4 minutes a day in unstructured outdoor play, leading researchers to discover a new condition specific to this current generation that they have called “nature deficit disorder”. This extreme emphasis of indoor time spent in front of screens versus outdoor play and discovery has been correlated with negative psychological and physical effects including obesity, loneliness, depression, attention problems and greater social isolation due to reduced time with friends and family.

What do increased study of science and nature and its increased outdoor time accomplish? Especially in the very young, it has proved in studies extremely beneficial for cognitive functioning, reduced symptoms of attention deficit disorder, increased self-discipline and emotional well-being.
Background: What has NCLB done to Environmental Education?

The No Child Left Behind Act (NCLB) is contributing to an increasing environmental literacy gap by reducing the already modest amount of environmental education taking place in K-12 classrooms. Its emphasis on testing for core subjects is causing many administrators to eliminate environmental education in favor of investing more resources in math and language arts, severely limiting instructional time for science and social studies, the traditional subjects in which EE is taught.¹

Even many science teachers feel compelled to eliminate those aspects of science class that do not appear to relate directly to questions on state science tests. Science curricula are narrowing in response to less time and more stringent assessment, limiting the amount and variety of environmental education as well as the kind of multidisciplinary teaching that it fosters.²

Teachers are actively or passively discouraged from providing valuable field based experiences for their students based on a fear of “loss of instructional time” for tested subjects. Such field experiences provide important opportunities for students to engage in hands-on, real-world problem solving and scientific inquiry. As a result, teacher autonomy to pursue vibrant, student-led, community-supported, environmental investigation and restoration projects is being curtailed.

There is no significant mention of environmental education in NCLB, the dominant policy shaping virtually all short and long term, local, state and federal education decisions. In fact, environmental education is not even organized under the U.S. Department of Education at the federal level. Instead, the office of environmental education is part of the U.S. EPA. While the administration may have a new focus on science and NCLB, that focus is on global economic leadership and homeland security, the crucial environmental issues facing our society are not even mentioned.³

Ironically, future issues relating to resource management and environmental sustainability may be inextricably linked to global economic leadership and security. Yet, if NCLB continues to be implemented in its current form, we will graduate a generation of students who are fundamentally unprepared to deal with the challenges posed to them on an individual, national, and global basis.

¹ See Bartosh, 2003 “Although many states require EE to be taught in all grades and all subjects, EE has not become a part of school curricula [in part because] teachers are required to prepare students for . . . new standardized tests administered at elementary, middle and high school.”

² See Gruenewald, 2006, “Although the current national science standards set forth by the National Academies contain many references to environmental sciences, there is no certainty that these topics will be incorporated into already crowded state curricula, much less make their way into the individual states’ proficiency tests

³ See USDE Website NCLB Science Fact Sheet
Background:
The Influence of Environmental Education on U.S. Performance in TIMSS vs. NAEP

The issuance of a new “Trends in International Mathematics and Science Study” (TIMSS) every four years is received with great anticipation by the K-12 education community, as it is the United States' primary source for international comparative information on mathematics and science education in the primary and middle grades. Unfortunately, the results are often embarrassing for the U.S., as we barely make the top 25% of participating nations in some scores and barely even the top 50% in other cases.

Why does the U.S. fare so poorly in science? A recent study, “Comparing Science Content in the National Assessment of Educational Progress 2000 and Trends in International Mathematics and Science Study 2003 Assessments” compared TIMMSS scores with those of the National Assessment for Educational Progress (NAEP) to find some answers. NAEP is the United States' source for nationally representative and continuing information on what American students know and can do and is commonly known as the Nation’s Report Card. NAEP has periodically collected and reported data on achievement in reading, mathematics, science, and other subjects for students in fourth, eighth, and twelfth grades.

This study found that the relative lack of environmental education in the U.S. compared to other participating countries is a significant factor in the disappointing performance of U.S. students in the TIMSS scores, as described below¹:

“In comparison to NAEP, whose framework was developed in the context of the U.S. system, the TIMSS framework reflects a consensus across many countries. Some of the differences in curricula across these countries are reflected in the frameworks and the differences in content between the two assessments. In particular, the inclusion in TIMSS of separate content areas in chemistry, physics, and environmental science results in broader topic coverage in some areas…”

“There are some similarities and differences between NAEP and TIMSS at the framework level, with NAEP defining science content in three broad fields of science (physical science, life science, and Earth science), and TIMSS including five content domains (physics, chemistry, life science, Earth science, and environmental science). Both NAEP and TIMSS include content areas related to life science and Earth science, which appear to be defined similarly based on the topic areas included in the

¹ Comparing Science Content in the National Assessment of Educational Progress 2000 and Trends in International Mathematics and Science Study 2003 Assessments (U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics. 2006. Page 62 (first paragraph) and Executive Summary, Pages iv - vi
framework. The two frameworks differ, however, in how the physical sciences are organized, with TIMSS having separate content domains for chemistry and physics. TIMSS also includes a separate content domain for environmental science, which includes topics related to environmental and resource issues that go across the fields of science in NAEP. The inclusion in TIMSS of separate content areas in chemistry, physics, and environmental science results in broader topic coverage in some areas. The differences at the framework level are translated into different emphases in the pool of items included in each assessment, even in the content areas of life science and Earth science where there is considerable overlap of the topic areas in the frameworks.”

“Environmental science: While only TIMSS includes this area as a separate content domain, more than 70 percent of TIMSS environmental science items were classified to topics in the NAEP framework across the fields of science, but primarily in Earth science. Still, a number of TIMSS items in this content domain (29 percent at grade 4 and 30 percent at grade 8) were classified at a different grade level in the NAEP framework. Also, several items (29 percent at grade 4 and 22 percent at grade 8) were found not to match any of the NAEP topics; these items cover a range of TIMSS framework objectives related to human use of natural resources as well as global and local environmental issues due to human and natural causes.”
Solution: Summary of Environmental Education Changes Sought in NCLB

1. Title 1 – Incorporate environmental science in the science standards and assessment requirements (Section 1111)

Students cannot meet environmental science standards due to the intense focus of teachers and schools on meeting AYP in math and reading. This effect is greatly magnified in under-performing schools. At the same time, our nation faces unprecedented environmental challenges related to human health, energy use, job development, and the conservation of natural resources.

Incorporating environmental science into state science standards and assessments will give states a clear signal that environmental science is important and should be included in the daily curriculum in our nation’s K-12 schools. As a result, the number of states with environmental science standards should increase from the current number of less than 10 to virtually all the states, which should increase the amount of environmental science taking place. This in turn should also bring national attention to the level of environmental science literacy in K-12 public school students in a measurable way.

At the same time, this approach of incorporating environmental science into the science standards and assessments will not add the burden of an additional assessment on states.

2. Title 11 - Create a separate EE grant program for teacher training (new Secs 2501-3)

The Title 1 change will prompt new classes and programs in environmental science to be created. This in turn will require additional science teachers who can teach environmental science. Creating a separate EE grant program for teacher training which is modeled on the Math/Science Partnerships will insure that a sufficient number of qualified teachers are available to teach these courses and programs while strengthening existing environmental education teacher training programs.

3. Title 11 – Identify EE as an eligible activity for the existing pool of teacher training funds (Sections 2113 and 2123)

(Same rational as the above.)

4. Title V – Create a separate EE grant program to help build national and state capacity (new Sections 5621-5627)

Environmental education as a field is relatively young compared to other fields such as math, history, biology and art. It has yet to develop the national and state level “infrastructure” needed to support teachers and administrators. This program will
provide funds for states to develop, improve and advance EE standards. It will also support the development of new state-level private/public funding sources, dissemination of proven EE models, and studies of national significance.

5. **Title V – Include EE as an Authorized Program in the Fund for the Improvement of Education** (Section 5411)

The Fund for the Improvement of Education is an important source of funding for states and school superintendents, and is only available for specified activities. Including environmental education as an authorized use for these funds will enable more funding to flow to environmental education programs.
A BILL

To Amend the No Child Left Behind Act of 2001, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE, TABLE OF CONTENTS

(a) SHORT TITLE.—This Act may be cited as the “Advancement of Environmental Science and Field-Based Education Act of 2007”

(b) TABLE OF CONTENTS.—The table of contents for this Act is as follows:

Sec. 1. Short title.
Sec. 2. Table of contents.
Sec. 3. Findings and policy.
Sec. 4. Definitions
Sec. 5. References

TITLE I—Inclusion of environmental science standards in the science testing/assessment requirement

Sec. 101. Environmental science within the science testing/assessment requirement.

TITLE II—Establishment of environmental education grant programs

Sec. 201. Environmental Education grant program for teacher training.
Sec. 202. Environmental Education grant program to help build national capacity.

TITLE III—Eligibility of environmental education activities under existing grant and funding programs.

Sec. 301. Environmental Education as an Authorized Program in the Fund for the Improvement of Education.
Sec. 302. Environmental Education as an eligible activity for the existing pool of teacher training funds.

TITLE IV—General Provisions.

SEC. 401. Definitions.
SEC. 3. FINDINGS AND POLICY.

The Congress finds as follows:

(1) Environmental education is essential for:
   (A) enhancing student learning and problem solving skills, especially in science,
   (B) creating responsible and engaged citizens, and
   (C) producing graduates who are prepared to address the challenges, adjustments, and opportunities that will be present in life and the workforce of the 21st century due to threats to human health, economical development, biological diversity, and national security arising from environmental degradation.

(2) Studies documenting the increasing indicators of nature-deficit disorder show that time spent out of the classroom for learning during the school day is critical to the intellectual, emotional, and physical health of children.

(3) Fewer and fewer students are becoming involved in important environmental education courses, class work, and field investigations as an unintended consequence of the No Child Left Behind Act of 2001 (20 U.S.C. 6301 et seq.).

SEC. 4. DEFINITIONS

In this Act

(1) ENVIRONMENTAL SCIENCE—The term ‘Environmental Science’ is the science of the interactions and interrelationships between and within dynamic natural and human activity systems.

SEC. 5. REFERENCES.

Except as otherwise specifically provided, whenever in this Act an amendment or repeal is expressed in terms of an amendment to, or a repeal of, a section or other provision, the reference shall be considered to be made to a section or other provision of the No Child Left Behind Act of 2001 (20 U.S.C. 6301 et seq.).

TITLE I—INCLUSION OF ENVIRONMENTAL SCIENCE STANDARDS IN THE SCIENCE TESTING/ASSESSMENT REQUIREMENT

SEC. 101. INCLUDING ENVIRONMENTAL SCIENCE IN THE SCIENCE STANDARD AND TESTING/ASSESSMENT REQUIREMENTS.

(a) Inclusion of Environmental Science Within Science Standards—Sec. 1111 (20 U.S.C. 6311) is amended by inserting after “science,” in subsection (b) (I) (C) “with an environmental science component beginning school year 2008-2009”.
(b) INCLUSION OF ENVIRONMENTAL SCIENCE IN ACADEMIC ASSESSMENT
REQUIREMENT FOR SCIENCE—Sec. 1111 (20 U.S.C. 6311) is further amended
as follows:

(1) In subsection (b) (3) (A) by inserting after science the first place such
term appears "(including environmental science)".

(2) In subsection (b) (3) (C) (v) (II) by inserting after science "(including
environmental science)".

TITLE II—ESTABLISHMENT OF
ENVIRONMENTAL EDUCATION GRANT
PROGRAMS

SEC. 201. ENVIRONMENTAL EDUCATION GRANT PROGRAM FOR
TEACHER TRAINING.

Title II (20 U.S.C. 6601 et seq.) is amended by adding the following the part after
Part D:

"PART E.—ENVIRONMENTAL EDUCATION GRANTS

"SEC. 2501. PURPOSE..

"(a) PURPOSE.—The purpose of this part is to ensure the
academic achievement of students in environmental learning by
encouraging State educational agencies, institutions of higher
education, local educational agencies, elementary schools, and
secondary schools to participate in programs that—

"(1) improve the environmental content knowledge
and field based pedagogical skill base of all science
teachers including elementary teachers and other
multidisciplinary teachers.

"(2) improve and upgrade the status and stature of
environmental teaching by encouraging institutions of
higher education to assume greater responsibility for
improving environmental education teacher education
through the establishment of a comprehensive, integrated
system of recruiting, training, and advising environmental
education teachers;

"(3) focus on the education of environmental
education teachers as a career-long process that
continuously stimulates teachers' intellectual growth and
upgrades teachers' knowledge and skills;

"(4) develop more rigorous environmental
education teacher training curricula that are aligned with
challenging State and local academic content standards and
with the standards expected for postsecondary study in teaching environmental education.

"SEC. 2502 GRANTS FOR ENHANCING EDUCATION THROUGH ENVIRONMENTAL EDUCATION

"(a) GRANTS AUTHORIZED.—

"(1) GRANTS TO PARTNERSHIPS.— The Secretary is authorized to award grants, on a competitive basis, to eligible partnerships to carry out the authorized activities described in subsection (c).

"(2) DURATION.—The Secretary shall award grants under this part for a period of 3 years.

"(3) SUPPLEMENT, NOT SUPPLANT.—Funds received under this part shall be used to supplement, and not supplant, funds that would otherwise be used for activities authorized under this part.

"(b) APPLICATION REQUIREMENTS.—

"(1) IN GENERAL.—Each eligible partnership desiring a grant or subgrant under this part shall submit an application to the State educational agency, at such time, in such manner, and accompanied by such information as the State educational agency may require.

"(2) CONTENTS.—Each application submitted pursuant to paragraph (1) shall include—

"(A) the results of a comprehensive assessment of the teacher quality and professional development needs of any schools, local educational agencies, and State educational agencies that comprise the eligible partnership with respect to the teaching and learning of environmental content;

"(B) a description of how the activities to be carried out by the eligible partnership will be aligned with challenging State academic content and student academic achievement standards in environmental science and will advance the teaching of interdisciplinary courses that integrate the study of natural, social and economic systems and that include strong field components;

"(C) an explanation of how the activities are expected to improve student academic achievement and strengthen the quality of environmental instruction;
“(D) a description of how the activities to be carried out by the eligible partnership will ensure that teachers are trained in the use of field-based, place-based and service learning to enable them to use the local environment and community to enhance student understanding, the relevance of instruction and academic achievement.”

“(E) a description of—
“(i) how the eligible partnership will carry out the authorized activities described in subsection (c); and
“(ii) the eligible partnership’s evaluation and accountability plan described in subsection (e); and
“(F) a description of how the eligible partnership will continue the activities funded under this part after the original grant or subgrant period has expired.

“(c) AUTHORIZED ACTIVITIES.—An eligible partnership shall use funds provided under this part for one or more of the following activities related to elementary schools or secondary schools:

“(1) Creating opportunities for enhanced and ongoing professional development of environmental education teachers that improves the subject matter knowledge of such teachers.

“(2) Promoting strong teaching skills for environmental education teachers and teacher educators, including integrating reliable scientifically based research teaching methods and technology-based teaching methods into the curriculum.

“(3) Establishing and operating environmental education summer workshops or institutes, including followup training, for elementary school and secondary school environmental education teachers.

“(4) Recruiting environmental studies and science majors to teaching through the use of—

“(A) signing and performance incentives that are linked to activities proven effective in retaining teachers, for individuals with demonstrated professional experience in environmental education;

“(B) stipends provided to environmental teachers for certification through alternative routes;
“(C) scholarships for teachers to pursue advanced course work in environmental studies and science; and
“(D) other programs that the State educational agency determines to be effective in recruiting and retaining individuals with strong environmental studies and science backgrounds.
“(5) Developing or redesigning more rigorous environmental curricula that are aligned with challenging State and local academic content standards and that advance the teaching of interdisciplinary courses that integrate the study of natural, social and economic systems and that include strong field components.
“(6) Establishing distance learning programs for environmental education teachers using curricula that are innovative, content-based, and based on scientifically based research that is current as of the date of the program involved.
“(7) Designing programs to prepare an environmental education teacher at a school to provide professional development to other environmental education teachers at the school and to assist beginning and other teachers at the school, including (if applicable) a mechanism to integrate the teacher’s experiences from a summer workshop or institute into the provision of professional development and assistance.
“(8) Establishing and operating programs to bring environmental education teachers into contact with working professionals in environmental fields to expand such teachers’ subject matter knowledge of and research in environmental issues.
“(9) Designing programs to identify and develop exemplary environmental education teachers in the kindergarten through grade 12 classrooms.
“(10) Training environmental education teachers and developing programs to encourage underrepresented individuals in environmental careers to pursue postsecondary degrees in majors leading to such careers.
“(11) Strengthening and developing new environmental science and education degree programs within higher education teacher training programs.
“(12) Initiatives that seek to incorporate environmental education within teacher training program accreditation standards.
“(d) COORDINATION AND CONSULTATION.—

“(1) PARTNERSHIP GRANTS.—An eligible partnership receiving a grant under section 203 of the Higher Education Act of 1965 shall coordinate the use of such funds with any related activities carried out by such partnership with funds made available under this part.

“(e) EVALUATION AND ACCOUNTABILITY PLAN.—

“(1) IN GENERAL.—Each eligible partnership receiving a grant or subgrant under this part shall develop an evaluation and accountability plan for activities assisted under this part that includes rigorous objectives that measure the impact of activities funded under this part.

“(2) CONTENTS.—The plan developed pursuant to paragraph (1)—

“(A) shall include measurable objectives to increase the number of environmental education teachers who participate in content-based professional development activities;

“(B) shall include measurable objectives for improved student academic achievement on State environmental science assessments; and

“(C) may include objectives and measures for—

“(i) increased participation by students in advanced environmental courses;

“(ii) increased percentages of elementary school teachers with academic majors or minors, or group majors or minors, in environmental studies or science; and

“(iii) increased percentages of secondary school classes in environmental studies and sciences taught respectively by teachers with academic majors in environmental studies and science.

“(f) REPORT.—Each eligible partnership receiving a grant or subgrant under this part shall report annually to the Secretary regarding the eligible partnership’s progress in meeting the objectives described in the accountability plan of the partnership under subsection (c).
"SEC. 2503 AUTHORIZATIONS AND APPROPRIATIONS.
"There are authorized to be appropriated to carry out this part $100,000,000."

SEC. 202. ENVIRONMENTAL EDUCATION GRANT PROGRAM FOR BUILDING AND STRENGTHENING STATE AND NATIONAL CAPACITY.

Title V, Part D (20 U.S.C. 7201 et seq.) is amended by adding the following subpart:

"Subpart 22. — ENVIRONMENTAL EDUCATION GRANT PROGRAM.

"SEC. 5621. PURPOSE AND GOALS.

"(a) The purposes of this subpart are the following:
"(1) To responsibly prepare children to understand and address major challenges facing the United States, such as clean energy, climate change, environmental health risks, and natural disaster resilience"

"(2) To support systemic education reform by strengthening environmental education as an integral part of the elementary school and secondary school curriculum;

"(3) To help ensure that all students meet challenging State academic content and achievement standards in environmental learning;

"(4) To support the national effort to enable all students to demonstrate competence in environmental learning

"(5) To leverage and expand private and public support for environmental education partnerships at national, State, and local levels,

"(6) To award grants and contracts to initiate, expand, and improve environmental education programs for all kindergarten through 12th grade students.

"(7) To reduce the risk of "nature-deficit disorder" in students by restoring and increasing field experiences as part of the regular school curriculum and schedule

"SEC. 5622. GRANT PROGRAM AUTHORIZED.
"The Secretary is authorized to award competitive one to three year grants to nonprofit organizations, state education authorities, local educational authorities, and institutions of higher education that have as their primary purpose the development of the institutional, financial, intellectual and policy resources needed to
help the field of environmental education become more effective and widely practiced.

"SEC. 5623. USE OF FUNDS.

"(a) Assistance made available under this subpart may be used for any of the following:

1) Developing and implementing challenging State environmental education academic content standards, student academic achievement standards, and State curriculum frameworks.

2) Replicating or disseminating information about proven and tested model environmental education programs that

A) use the environment as an integrating theme or content throughout the curriculum, and/or

B) provide integrated, interdisciplinary instruction about natural, social and economic systems along with field experience.

3) Developing and implementing new policy approaches to advancing environmental education at the state and national level.

4) Conducting studies of national significance.

5) Executing projects that advance wide spread state and school district adoption and use of environmental education content standards, including in textbook selection criteria.

6) Planning and initiating new State or national sources of environmental education funding such as environmental education trust funds, permanent funds with dedicated funding sources such as environmental fines, lotteries, state licenses or user fees.

"SEC. 5624. APPLICATIONS.

"(a). SUBMISSION - Each nonprofit organization, state education authority, local educational authority, and institution of higher education desiring a grant or contract under this subpart shall submit to the Secretary an application that contains a plan to initiate, expand, or improve environmental education programs in order to make progress toward meeting State standards for environmental learning.

"(b) PRIVATE SCHOOL AND HOME-SCHOoled STUDENTS – An application for funds under this subpart may
provide for the participation, in the activities funded under this subpart, of -

“(1) Students enrolled in private nonprofit elementary schools or secondary schools, and their parents and teachers; or
“(2) Home-schooled students, and their parents and teachers.

"SEC. 5625. REQUIREMENTS.

“(a) ANNUAL REPORT TO THE SECRETARY – In order to continue receiving funding after the first year of a multiyear grant or contract under this subpart, the administrator of the grant or contract for nonprofit organizations, state education authorities, local educational authorities, and institutions of higher education shall submit to the Secretary an annual report that –
“(1) Describes the activities conducted during the preceding year; and
“(2) Demonstrates that progress has been made in helping schools to meet State standards for environmental education.

“(b) ADMINISTRATIVE EXPENSES – Not more than 15 percent of the grant funds made available to a nonprofit organization, state education authority, local educational authority, and institution of higher education under this subpart for any fiscal year may be used for administrative expenses.

"SEC. 5626. ADMINISTRATIVE PROVISIONS.

“(a) FEDERAL SHARE – The Federal share under this subpart may not exceed –
“(1) 90 percent of the total cost of a program for the first year for which the program receives assistance under this subpart; and
“(2) 75 percent of such cost for the second and each subsequent such year.

“(b) PROPORTIONALITY – To the extent practicable, the Secretary shall ensure that grants awarded under this subpart shall be equitably distributed among nonprofit organizations, state education authorities, local educational authorities, and institutions of higher education serving urban and rural areas.

“(c) REPORT TO CONGRESS – Not later than June 1, 2008, the secretary shall submit a report to Congress that –
“(1) Describes the programs assisted under this subpart;
(2) Documents the success of such programs in improving national and state environmental education capacity; and
(3) Makes such recommendations as the Secretary determines appropriate for the continuation and improvement of the programs assisted under this subpart.

“(d) AVAILABILITY OF FUNDS — Amounts made available to the Secretary to carry out this subpart shall remain available until expended.

“SEC. 5627. SUPPLEMENT, NOT SUPPLANT.
“Funds made available under this subpart shall be used to supplement, and not supplant, any other Federal, State, or local funds available for environmental education activities.”

**Title III—Eligibility of Environmental Education Activities Under Existing Grant and Funding Programs**

**Sec. 301. Ensuring Teachers Participate in Environmental Education Training Programs.**

(a) **Ensuring Environmental Education is Included in Teacher Certification or Licensing Requirements**—Section 2113 (20 U.S.C. 6613) is amended by inserting after “including” in subsection (c) (1) (C) “environmental and”.

(b) **Addition of New Strategies for Professional Development**—Section 2113 (20 U.S.C. 6613) is further amended by inserting after “peer networks,” in subsection (c) (10) “field-based and place-based learning, service learning, experiential learning,…”

(c) **Integration of Environmental Learning into the Curricula**—Section 2113 (20 U.S.C. 6613) is further amended in subsection (c) by adding at the end the following:

“(19) Encouraging and supporting the training of teachers and administrators to effectively integrate environmental education, including training in field-based, place-based, and service learning, outdoor and experiential learning, into the curricula and instruction in order to improve teaching, decision-making, school improvement efforts, and accountability in all subjects.”
(c) Use of Local Funds for Training on Effective Integration of Environmental Education—Section 2123 (20 U.S.C. 6623) is amended in subsection (a) (3) (B) by adding at the end the following:

“(vi) provide training on how to effectively integrate environmental learning, including training in field-based and place-based learning, service learning, and experiential learning, into the curricula and instruction”

SEC. 302. INCLUSION OF ENVIRONMENTAL EDUCATION AS AN AUTHORIZED PROGRAM IN THE FUND FOR THE IMPROVEMENT OF EDUCATION.

Section 5411 (20 U.S.C. 7243) is amended in subsection (b) by adding at the end the following:

“(10) Activities and programs that advance environmental education, including interdisciplinary courses that integrate the study of natural, social and economic systems and the use of the environment as an integrating theme for a school curriculum, as well as field-based, place-based learning, service learning, and outdoor and experiential learning programs.”

TITLE IV—GENERAL PROVISIONS

SEC. 401. DEFINITIONS

Section 9101 (20 USC 7801) is amended by inserting after subsection (18) the following:

“(19) Environmental Science— The term ‘Environmental Science’ is the science of the interactions and interrelationships between and within dynamic natural and human activity systems.
Solution:
Review of States with Environmental Education Assessment

Maryland:
The Maryland State Department of Education’s Voluntary State Curriculum includes pre K-12 grade core learning goals that address environmental education across the curriculum, with a strong emphasis in the social studies and science content areas. Additionally, the state has adopted an environmental education bylaw requiring local school systems to implement multiple comprehensive environmental education units of study throughout a student’s academic career.

Environmental education learning goals may be included in each of the state’s core subject assessments. Beginning in spring 2007, Maryland will field test a state-wide science assessment program in grades 5 and 8.

Pennsylvania:
In Pennsylvania, the Department of Education has established k-12 content standards in Environment and Ecology. These standards may be covered as part of a distinct subject or integrated into another area of the curriculum.

State level assessments for science and technology are being field tested for the first time during the current academic year in grades 4, 8, and 11. Environment and ecology standards are included as part of this new testing program.

New Jersey:
New Jersey’s K-12 Core Curriculum Content Standards include an environmental education standard in both science and social studies at each benchmark grade level. Social studies standards include an environment and society strand at each grade level, and science standards include an environmental studies strand for each grade level. Within multiple science strands, there are numerous cumulative progress indicators related to environmental science.

New Jersey’s state-administered assessments include science in grades 4, 8, and—beginning in 2007—11. Within the science assessment, tested standards include environmental studies for each participating grade level. Social studies is not part of the assessment for any grade at this time.

Ohio:
While Ohio’s Department of Education has not established specific standards for environmental education, related indicators can be found throughout the academic content standards, including science, social studies, technology, English language arts, and mathematics.

In accordance with state guidelines, Ohio Achievement Tests are given to students in grades 3-8 in multiple content areas. Assessment questions in all subject areas—
reading, mathematics, science, social studies, and writing—including those related to multi-disciplinary environmental education.

**Illinois:**
The Illinois State Board of Education has adopted learning standards for environmental education in the content areas of science and social sciences at each benchmark grade level. Within several learning standards in both content areas, there are numerous benchmarks that are relevant to environmental education.

Illinois administers science assessments in grades 4, 7, 11, and 12 using the Illinois Standards Achievement Test for grade 4 and 7, and the Prairie State Achievement Exam in grades 11 and 12. The state has established guidelines for assessment requiring that 30 percent of the exam content related to environmental science subject matter. At this time, the state of Illinois does not assess achievement in social sciences.

**Nevada:**
Nevada's Department of Education has established environmental education benchmarks within content standards for science (life science) and social studies (environment and society.)

Through the Nevada Proficiency Examination Program, students in grades 3, 8, and 10 participate in Criteria Reference Testing for science content, including life science benchmarks. State guidelines allow for testing of certain social studies goals and benchmarks (including many related to environmental education) at the state level, but such testing is not currently required.
Solution:
Differences between the No Child Left Behind Act (NCLB) and the National Environmental Education Act (NEEA)

In 1970, the Congress enacted the first Environmental Education act to authorize the then-U.S. Department of Health, Education, and Welfare to establish programs to support environmental education at the elementary and secondary levels and in communities. In its statement of findings and purposes, the Congress found "that the deterioration of the quality of the Nation's environment and of its ecological balance is in part due to poor understanding by citizens of the Nation's environment and of the need for ecological balance; that presently there do not exist adequate resources for educating citizens in these areas, and that concerted efforts on educating citizens about environmental quality and ecological balance are therefore necessary." Grants for curriculum development, teacher training, and community demonstration projects were made available for several years under this Act, but the program expired and was not reauthorized.

In 1990, the Congress enacted the National Environmental Education Act to renew the federal role in environmental education. The Congress once again found that "current Federal efforts to inform and educate the public concerning the natural and built environment and environmental problems are not adequate."

Including environmental education in NCLB serves a very different purpose than the function of the NEEA in four important ways:

1. First and foremost, NCLB directly influences state/local education policy and directly impacts what takes place in our nation's classrooms on a daily basis. NEEA does not. NEEA is a 37 year-old Act that has no significant role in or influence on national K-12 education policy, as it was primarily intended to directly support both formal (K-12 and higher education) and informal environmental education programs at the local level.

2. While both include a teacher training program and grants to K-12 formal education, the scope of the NEEA goes beyond this to include undergraduate and graduate internships and fellowships, awards, establishment and funding of the National Environmental Education and Training Foundation, and grants to higher education and informal education as well as K-12.

Regarding the two areas of superficial overlap (K-12 grants and teacher training):

3. The focus and purpose of the formal K-12 education grants also differ. The original purpose of NEEA was largely to provide small grants to "seed" nascent activities in the then-new field of environmental education. The Act limits EPA grants to a maximum of $250,000 (and in practice, only 1% of the grants exceed $100,000 and only 6% exceed $25,000). Furthermore, the Act in practice also mandates that
about 2/3rd of all the grants be $5,000 or less. The result is that the average EPA education grant is about $10,000, and the majority are $5,000 or less. About half go to non-profit organizations, one sixth to schools/school districts, and another sixth to colleges and universities. On the other hand, NCLB funds go largely to schools/school districts, and involve much larger sums for much different purposes.

4. The NEEA mandates that funds for the teacher training program be awarded to only one institution of higher education or non-profit, whereas NCLB teacher training funds are much more widely and effectively distributed. Furthermore, the NEEA teacher training program reaches non-formal as well as formal educators (and is thus more accurately called an “educator” training program rather than a teacher training program).

In sum, NEEA is broader than NCLB in that it touches all environmental education sectors and also provides a number of additional functions such as internships and awards – all with a very modest amount of funding ($5.5 million in FY07). NCLB is focused on K-12 only and significantly impacts both school policy and funding in virtually every public school in the country.
Support: NCLB Stakeholder support letter

Dear Members of Congress:

The reauthorization process for the expiring *No Child Left Behind Act* (NCLB) offers a major opportunity to better prepare the next generation of students for the workforce and personal challenges they will face, while simultaneously advancing NCLB’s primary priorities in math, reading, and science.

Two simple changes are needed to NCLB: 1) give schools and school systems more encouragement and flexibility to develop and deliver environmental education programs as part of science, math, and language arts, as well as elsewhere in the curriculum, and 2) authorize enhanced federal environmental education funding for teacher training, development of state standards and assessments, classroom and field education programs, research, and strategic initiatives to help advance the field.

For more than three decades, environmental education has been a steadily growing part of our nation’s elementary and secondary schools. Thousands of public schools (including over 300 environmental charter and magnet schools) throughout every state in the nation now offer some form of environmental education, involving some 30 million K-12 students and 1.2 million teachers each year.

Unfortunately, NCLB’s high-stakes atmosphere has created an intense focus on reading and math, which, in turn, is influencing many schools to abandon their already modest environmental education programs. Science teachers are also eliminating aspects of science such as environmental science that do not appear to relate directly to state tests. Even field trips are being eliminated to save time for more math and reading.

**Our nation can no longer afford to treat environmental education as optional.** Only those countries that find ways in the coming decades to prosper within the constraints of nature – climate change and clean energy being only two of the most pressing constraints – will remain competitive and sustainable in the emerging world economy. Charles Holliday, CEO of Dupont, is not alone in declaring that “an environmentally sustainable business is just good business... A key component of an environmentally sustainable business is a highly educated work force, particularly involving environmental principles.”

The National Science Foundation agrees, noting that “in the coming decades, the public will more frequently be called upon to understand complex environmental issues, assess risk, evaluate proposed environmental plans and understand how individual decisions affect the environment at local and global scales. Creating a scientifically informed citizenry requires a concerted, systematic approach to environmental education...”

Environmental education also connects classroom-learning in exciting and engaging ways to the real world. As a result, when included in the core curricula or used as an integrating theme across the curricula, environmental education demonstrably improves student achievement in science – and in reading, math, and social studies as well.
Yet, nationwide funding available through the National Environmental Education Act (the primary source of federal K-12 funding specified for environmental education) was only $6.6 million in 2006 — an average of $132,000 for each of the 50 States.

We urge you to seize the opportunity offered by NCLB's reauthorization to affirm the value and importance of environmental education in meeting the nation's economic, environmental, social, and security challenges ahead. By restoring environmental education to the classroom and enhancing our nation's environmental literacy, we will not only improve student achievement, but we will also better prepare the coming generation for the new workforce requirements and create more responsible citizens and stewards of the environment.

February 28, 2007

Association for the Advancement of Sustainability in Higher Education (Tom Kimmerer, Executive Director)

Association of Nature Center Administrators (Tim Sandsmark, President)

Association of Zoos and Aquariums (Steve Olson, Director of Government Affairs)

Campaign for Environmental Literacy (James Elder, Director)

Chesapeake Bay Foundation (Don Baugh, Vice President for Education)

Council on Environmental Education (Josetta Hawthorne, Executive Director)

Council of Environmental Deans and Directors (Bruce Coull, President)

DuPont (Charles O. Holliday, Jr., Chairman of the Board and Chief Executive Officer)

Earth Force (Vince Meldrum, President)

Earth Day Network (Kathleen Rogers, President)

Ecological Society of America (Jason Taylor, Director of Education)

National Association for Interpretation (Tim Merriman, Executive Director)

National Audubon Society (Judy Braus, Vice President for Education)

National Council for Science and the Environment (Peter Saundry, Executive Director)

National Marine Sanctuary Foundation (Lori Arguelles, President and CEO)

National Wildlife Federation (Kevin Coyle, Vice President for Education)

North American Association for Environmental Education (Brian Day, Executive Director)

Ocean Project (Bill Mott, Director)

Second Nature (Anthony Cortese, President)
The Honorable Edward M. Kennedy  
Ranking Member  
Committee on Health, Education, Labor, and Pensions  
428 Dirksen Senate Office Building  
Washington, D.C. 20510

Dear Senator Kennedy,

I am writing in support of an initiative of critical importance to the business sector, namely infusing environmental education into the reauthorization of the No Child Left Behind law. While I applaud the current No Child Left Behind law for its focus on creating a more competitive American work force, I do have concerns about the affect that the law inadvertently has had on the environmental literacy of our work force.

DuPont, like many other companies, has a stake in making sure that our employees have a rudimentary understanding of environmental principles. We believe that an environmentally sustainable business is just good business, given the growing concern for environmental problems across America. A key component of an environmentally sustainable business is a highly educated work force, particularly involving environmental principles.

I recently have been made aware of the effort by the Massachusetts based Campaign for Environmental Literacy and the Chesapeake Bay Foundation to infuse environmental education into the reauthorization of the No Child Left Behind law. I strongly support this effort. I believe that this nation will be better served, and our work force better prepared, if we expect that our high school graduates have attained a basic level of environmental understanding. The current NCLB has caused a reduction in environmental programs in the K-12 schools, at a time when this needs to be a requirement at all schools.

I am willing to invest energy in this important initiative and am willing to work closely with your office to build the necessary coalition to achieve success by taking a lead in the corporate community, and meeting personally with Senator’s Biden and Carper.

Thank you for all that you have done for public school education reform. I urge you to support this initiative that will only improve the quality of our graduates.

Sincerely,

Charles O. Holliday, Jr.

bcc Will Baker, Chesapeake Bay Foundation
National Overview: State Program Summary*

- 45 states have organized EE associations.
- 25 states have model EE schools.
- 21 states offer a state EE grant program.
- 20 states have an EE master plan.
- 19 states have a state EE Board (one-third of those are within the Department of Education; two-thirds within Department of Natural Resources or Environmental Protection).
- 17 states have an EE office within state government.
- 15 states have adopted formal EE learning objectives/outcomes.
- 12 states conduct student assessments that include EE.
- 9 states offer an EE teacher certification program.
- 7 states have a statute or bylaw encouraging EE.
- 6 states mandate EE in their K-12 public schools.
- 6 states conduct a state-wide public environmental literacy assessment.
- 4 states have created a functioning permanent EE Trust Fund (Maryland, Minnesota, Massachusetts, Ohio).

*Source for much of the above information: The National Environmental Education Advancement Project 50 State Survey.
National Overview: State Program Descriptions

Alabama
- Environmental Education Association of Alabama – A state-wide organization of classroom teachers, non-formal educators from Museums, Zoos, and Nature Centers, state agency personnel, educational institutions, industry representatives, and anyone else interested in promoting teaching about the environment in the state of Alabama.
  Website: http://www.aces.edu/eeaa/
- Statutory Requirement: Al. St. Sec. 16-6B-2

Alaska
- Alaska Natural Resource and Outdoor Education Association (ANROE) – ANROE collaborates with organizations, agencies, & school districts to provide education resources, training, and networking opportunities about Alaska natural resources. Thru its newsletter, mailing list & forums, ANROE members share information about environmental education tools, techniques, employment and professional development opportunities. ANROE is funded by memberships and sponsors.
  Website: http://www.anroe.org/
- Statute or Bylaw:
  http://touchngo.com/lglntr/akstats/Statutes/Title14/Chapter30/Section380.htm

Arizona
- Arizona Association for Environmental Education (AAEE) – AAEE is a nonprofit organization working to enhance the scope, quality, and effectiveness of EE in Arizona and to advance professionalism among all who are involved with EE. AAEE fosters strength and diversity in the Arizona EE community.
  Website: http://www.arizonaee.org/

Arkansas
- Arkansas Environmental Education Association
  Website: http://www.aeeea.us/
- Statute or Bylaw: Department of Education Standards for accreditation

California
- Association for Environmental and Outdoor Education (AEOE) – California based AEOE is dedicated to the education of children and to helping them increase their awareness and understanding of their natural environment.
  Website: http://www.AEOE.org/
- Statute or Bylaw: Assembly Bill 1548, Chapter 665, Statutes of 2003
- State Standards: Education and the Environment state plan document (www.cde.ca.gov)
Colorado
- Colorado Alliance for Environmental Education (CAEE) – CAEE serves all sectors of the Colorado community by increasing the effectiveness of environmental education (EE). CAEE is dedicated to supporting and promoting quality environmental education opportunities by facilitating communication, coordination and professional development among the varied environmental education programs in the state. During the last 15 years, the Alliance has grown to include more than 600 members, 100 active volunteers, and several well established projects.
  Website: http://www.caee.org/

Connecticut
- Connecticut Outdoor and Environmental Education Association – COEEA supports naturalists, classroom teachers, youth group leaders, and other educators as they promote responsible environmental stewardship. It offers a newsletter, workshops, and conferences and collaborates with the New England EE Alliance and NAAEE.
  Website: www.coeea.org
- Assessments that include EE: Yes

Delaware
- The University of Delaware coordinates teacher professional development in environmental sciences through The Centers for Ocean Sciences Education Excellence, a NSF funded program.
  Website: http://www.doe.k12.de.us
  http://www.doe.k12.de.us/programs/pcs/science.shtml

Florida
- League of Environmental Educators in Florida (LEEF) – LEEF is an organization designed to inform and educate teachers and the general public about environmental issues in Florida. Web site features include a calendar of events, grant and job listings and LEEF conference information.
  Website: http://leeflet.brinkster.net/

Georgia
- Environmental Education Alliance of Georgia – As an affiliate of the North American Association for Environmental Education, EEA works to promote environmental education by providing opportunities for member organizations, schools, and the general public to interact and learn through the annual EEA conference, the member newsletter and its initiatives.
  Website: http://www.eealliance.org/
Idaho

- Idaho Environmental Education Association (IdEEA) – IdEEA supports and promotes learning about the world around us through a network of model schools, an annual conference, recognizing exemplary teaching and an on-line database.
  Website: http://idahoeo.org/cgi-bin/risee/i debris/

Illinois

- Environmental Education Association of Illinois – A group of concerned citizens who are interested in educating people of all ages about the importance of understanding and protecting the environment.
  Website: http://www.eeai.net/
- State Standards: Illinois State Board of Education Illinois Learning Standards and Green Standards (www.isbe.net/ils/)
- Assessments that include EE: 1/3rd of the science questions of the state assessment are related to EE.

Indiana

- Environmental Education Association of Indiana (EEAI) – The mission of EEAI is to work cooperatively to promote opportunities that will educate, motivate, and inspire citizens of Indiana to conserve natural resources and meet the needs of our society while maintaining a healthy environment now and in the future.
  Website: www.eeai.org

Iowa

- Iowa Conservation Education Council
  Website: http://www.iowaeo.org
- Statutory Requirements: IAC 11/19/97 12.5(3)d, 12.5(4)d, and 12.5(5)d. (required under “Science”)
- State Standards: Each district must have its own standards showing how the Iowa Admin Code is met.

Kansas

- Kansas Association for Conservation and Environmental Education – A non-profit promoting quality, non-biased and science-based environmental education for all Kansans. The materials sponsored by KACEE can assist schools in meeting the Quality Performance Accreditation (QPA) and state standards requirements mandated by the Kansas State Board of Education. Hosts annual EE conference.
  Website: http://www.kacee.org/
- Statute or Bylaws: House Resolution
- State Standards: DoE has non-tested EE standards/objectives/outcomes (www.kacee.org)
Kentucky
- Kentucky Association for Environmental Education (KAEE) – KAEE represents teachers, government, industry, parents, students -- people who understand that each citizen should be able to make wise decisions concerning the environment, and to do that, they must be environmentally educated. Website: http://www.kaee.org/

Maine
- Maine Environmental Education Association – MEEA helps organizations, schools, groups, educational programs, and individuals promote and expand environmental education in Maine. Website: http://www.meeassociation.org/

Maryland
- Maryland Association for Environmental & Outdoor Education (MAEOE) – The mission of MAEOE is to encourage, train, and support Maryland educators to build a citizenry that understands and is responsibly engaged in promoting sustainability, addressing human needs and conserving the Earth's natural resources. Website: http://www.maeoe.org
- Statutory Requirements: www.marylandpublicschools.org/MSDE/programs/environment/info/
- State Standards: Yes

Massachusetts
- Massachusetts Environmental Education Society – The Massachusetts Environmental Education Society is dedicated to the promotion, preservation and improvement of environmental education in the state and region. Website: http://www.massmees.org

Michigan
- Michigan Alliance for Environmental & Outdoor Education – MAEOE is a professional association supporting and advancing environmental education in a variety of settings, including (but not limited to): K-12 classrooms, nature centers, camps, youth programs, government agencies, as well as for-profit and non-profit organizations. Website: http://www.michiganenvironmentaled.org/

Minnesota
- Minnesota Association for Environmental Education (MAEE) – The mission of MAEE is to support and advance environmental education throughout the state of Minnesota. Website: http://www.naee.org/maee/
- Statute or Bylaws: http://www.seek.state.mn.us/eemn_g.cfm
Mississippi
- Mississippi Environmental Education Alliance (MEEA)
  Website: http://www.eeinmississippi.org
- Statutory Requirements: Waste Minimization Act of 1990 or 1991

Missouri
- Missouri Environmental Education Association – A broad-based membership organization made up of teachers, students, youth group leaders, volunteers, interpreters, and others engaged in environmental education.
  Website: http://www.meea.org/

Montana
- Montana Environmental Education Association – The Montana Environmental Education Association promotes and celebrates an environmentally responsible citizenry through education and the support of a statewide network of professionals, students & volunteers.
  Website: http://www.montanaeea.org

Nebraska
- Nebraska Alliance for Conservation and Environmental Education (NACEE) – NACEE is a coalition of Nebraska organizations and individuals with an interest in conservation and environment education.
  Website: http://www.nacee.org

Nevada
- Nevada Natural Resource Education Council (NNREC) – The goal of NNREC is "to develop and promote natural resource education in Nevada." NNREC offers PLT, PWild and Project WET workshops and links to other EE resources in Nevada.
  Website: http://nnrec.org/
- Assessments that includes EE: Science Criteria Reference Test includes significant reference to Environmental Science (www.doe.nv.gov/sca/testing/crt/)

New Hampshire
- New Hampshire Environmental Educators (NHEE) – As the state professional EE organization, NHEE’s mission is to advocate for high quality environmental education in New Hampshire, and to provide environmental educators with a forum for networking and professional development.
  Website: http://www.neeea.org/nh/
- Statute or Bylaws: NH Frameworks for Science Literacy (http://www.ed.state.nh.us/education/doe/organization/curriculum/science/documents/ScienceFramework.pdf)
- Assessment that included EE: Yes, included in Science Frameworks
New Jersey
- Alliance for New Jersey Environmental Education (ANJEE) – ANJEE was established in 1985 to provide a networking forum for New Jersey's environmental educators. Site includes upcoming events, information about ANJEE, and membership information. Website: http://www.anjee.net/
- State Standards: NJ's science and social studies core K-12 curriculum content standards include an environmental studies standard in science and a geography/environmental standard in social studies (www.nj.gov/njded/aps/)
- Assessments that include EE: Environmental science questions included in DoE state tests for 4th, 8th and 11th grades.

New Mexico
- Environmental Education Association of New Mexico (EEANM) – EEANM is a non-profit organization which provides, promotes, and enhances quality environmental education by offering New Mexicans opportunities for professional development, communication, and partnership. Website: http://www.eeanm.org/
- State Standards: Science Content Standards include Environmental Science, not other aspects (www.cesdp.nmhu.edu/standards_pdf/k-8/10_science_K-8.pdf)

New York
- New York State Outdoor Education Association – Established in 1968, the New York State Outdoor Education Association is the leading professional group supporting outdoor education, environmental education, and interpretive services in New York State. Website: http://www.nysoea.org/

North Carolina
- Environmental Educators of North Carolina – The premier non-profit professional organization for Environmental Education Professionals in North Carolina. Since October 1990, EENC has been enhancing the work of individuals by establishing a powerful network of environmental educators across the state. Website: http://www.eenc.org/
- Statutory Requirements: Earth/Environmental Science HS requirement (www.dpi.state.nc.us/curriculum/science/standard/114earth.html)
- State Standards: NC Standard Course of Study (http://www.ncpublicschools.org/curriculum/)
- Assessments that include EE: Only within the standards

North Dakota
- Coalition for Conservation and Environmental Education (C2E2) – The C2E2 facilitates communication, cooperation, collaboration and coordination among the varied environmental education programs in the state. Participants share a common and compelling vision of "developing a public that is knowledgeable, committed and motivated to take a balanced, active approach for a quality environment. Website: http://www.c2e2.gscience.org
Ohio
- Environmental Education Council of Ohio (EECO) – EECO is a non-profit organization for educators and others who are concerned about the environment. EECO sponsors meetings and workshops, and has a series of EE related publications. NAAEE Affiliate liaison: Brenda Metcalfe. EECO regional system provides professional throughout the state and annual and regional conferences, and the Projects and the state organizations such as ODNR Soil and Water, Div. of Wildlife, Water, Forestry and Recycling and Litter Prevention, Ohio Energy Project, Environmental Education Fund office and other local programs such as parks and nature centers; a number of Universities are willing to provide college credits for these EE trainings and workshops.
Website: http://www.eeco-online.org/
- State Standards: No specific EE standards - EE related indicators embedded in Science, Social Studies, Technology, English, language arts, and math academic standards. (www.okcel.org)
- Assessments that include EE: New state standards have EE related questions that are included in state proficiency tests and the new state achievement tests.

Oklahoma
- Oklahoma Association for Environmental Education (OKAEE) – The mission of OKAEE is to support Oklahoma educators and promote, in formal and non-formal settings, environmental literacy through communication, resource sharing, skill building, and recognition of excellence.
Website: http://www.okaee.org/

Oregon
- Environmental Education Association of Oregon (EEAO) – EEAO is a professional organization dedicated to creating a more environmentally literate citizenry composed of people who have the skills and knowledge necessary to make informed decisions regarding natural resources, and to solve the complex environmental problems facing our society.
Website: http://www.eea.org/

Pennsylvania
- Pennsylvania Association of Environmental Educators (PAEE) – PAEE unites, supports, and inspires individuals to be stewards of the environment.
Website: http://www.paee.net/
- Statutory Requirements: State-wide standards for environment and ecology K-12. It may be taught as a separate subject or integrated into existing curriculum.
- State Standards: www.state.pa.us - keywords: academic standards
- Assessments that include EE: PDE has developed an EE student assessment in conjunction with science and technology for implementation in 2007.
Rhode Island
• Rhode Island Environmental Education Association (RIEEA) – RIEEA is an affiliation of RI EE groups that offers networking opportunities for teachers, and informal educators. We also sponsor an annual conference and teacher workshops. We are an organizational member of NEEEA.
  Website: www.rieea.org/
• Statute or Bylaws: Just passed new science mandate that encourages or requires teachers to teach hands-on education: The Rhode Island State-wide Curriculum; The NECAP Science Assessment GSE’s in Science: www.ride.ri.gov
• Assessments that include EE: Not specific to EE

South Carolina
• Environmental Education Association of South Carolina (EEASC) – EEASC provides a forum for educators, administrators, researchers, agency, industry personnel, and concerned citizens to exchange and share information, ideas and resources pertaining to SC natural resources and EE initiatives.
  Website: www.eeinsula.org
• Statute or Bylaws: No but efforts are in place

South Dakota
• Environmental Education Connections of South Dakota

Tennessee
• Tennessee Environmental Education Association (TEEA) – TEEA assists in the development and coordination of EE programs and activities; assists in the development of leadership in the public schools of Tenn. to implement EE throughout the curriculum; ...and represents its membership in matters of mutual concern which involve EE programs and activities.
  Website: http://www.teea.info/

Texas
• Texas Association for Environmental Education (TAAE) – TAAE is an organization of teachers, administrators, college and university faculty, natural resource managers, public agency employees, and private citizens who share a common interest in promoting EE in Texas. TAAE holds two conferences per year and is affiliated with the Science Teachers Assoc of Texas.
  Website: http://www.statweb.org/TAAE/

Utah
• Utah Society for Environmental Education (USEE) – USEE serves Utah as an umbrella organization that guides, informs, & represents state EE providers. To achieve this, USEE strives to foster environmental knowledge, skills, attitudes & actions through statewide leadership that serves to expand the quality, scope, & effectiveness of EE in Utah.
  Website: http://www.uese.org/
Vermont

- Vermont Statewide Environmental Education Programs (SWEEP) – SWEEP is Vermont State-Wide Environmental Education Programs, a coalition of dozens of individuals and more than 50 organizations promoting environmental education in Vermont. SWEEP’s purpose is to foster environmental appreciation and understanding in order to enable Vermonter’s to make responsible decisions affecting the environment. Website: [http://www.vermontsweep.org/](http://www.vermontsweep.org/)

- Statutory Requirements: Vermont Frameworks of Standards includes natural resources, agriculture, sustainability, and understanding place.

- State Standards: Two education standards on sustainability.

- Assessments that include EE: Yes—science assessments includes sustainability.

Virginia

- Virginia Naturally, the Commonwealth's official environmental education initiative, is a "virtual" association of public and private agencies, schools, and individuals working together to deliver environmental education programs to Virginians of all ages. Virginia Naturally is a gateway to a myriad of resources and information about Virginia's environment. The Virginia Department of Environmental Quality (VA DEQ) coordinates environmental education programs state wide, including Chesapeake Bay Foundation teacher professional development and student meaningful field experiences. Website: [http://www.deq.virginia.gov/education/](http://www.deq.virginia.gov/education/)

- Statutory Requirements: Virginia State Department of Education's Standards of Learning include standards that specifically relate to the environment. [http://www.pen.k12.va.us/VDOE/Superintendent/Sols/home.shtml](http://www.pen.k12.va.us/VDOE/Superintendent/Sols/home.shtml)

- The Sixth Grade Science Standards Institutes are multi-day explorations of the new 6th Grade Science Standards and supporting curricula and resources.

Washington

- Environmental Education Association of Washington (EEAW) – EEAW is the professional association serving all environmental education providers and stakeholders and ultimately the citizens in all sectors of Washington State. EEAW is comprised of community educators, pre-K–university educators and administrators, communications specialists, public agency and private business representatives and others dedicated to providing and promoting quality environmental education programs and materials. Website: [http://www.eeaw.org/](http://www.eeaw.org/)


- State Standards: Pacific Education Institute Technical Report 1 and 2

- Assessments that include EE: Pacific Education Institute; Office of Superintendent of Public Instruction: Washington State EE Needs Assessment (2001)
West Virginia
- West Virginia Environmental Education Association (Note: This is a new organization and is just getting off the ground.)
  Website: http://www.oionline.com/home.htm
- State Standards: WV DoE Science Content Standards (http://wvde.state.wv.us - look under CSOs ex. SC.3.4.3)

Wisconsin
- Wisconsin Association for Environmental Education (WAEE) – WAEE is the direct connection to Environmental Education (EE) in Wisconsin. Join teachers, naturalists, youth leaders, natural resource professionals and others dedicated to learning more and educating all persons about the natural and built environment.
  Website: http://www.uwsp.edu/cnr/waee/
- Statutory Requirements: Statutes 121.02(1)(k)1,2, 3

Wyoming
- Wyoming Association for Environmental Education – Established in the summer of 1998 to provide educators with a consolidated resource of information related to EE. The site contains the master plan for the WAEE, a calendar of events, and EE links.
  Website: http://wind.cc.whecn.edu/~waee
National Overview:
Involvement of Federal Agencies in Environmental Education

Environmentally-related education (such as conservation education, ocean education, earth education, energy education, and environmental education) is supported and undertaken by at least 14 different federal agencies. Each agency employs its own approach to advancing environmentally-related education, and each has its own reasons for supporting it.

Agencies with the Departments of Agriculture, Commerce, Energy, Interior, and Transportation, as well as NASA, EPA and NSF all have legislative authority for activities that relate, if only peripherally, to environmental literacy. These agencies are prolific producers of environmental information and educational materials designed to inform the public on a wide range of environmental problems, issues and solutions. While most of these programs are more oriented towards outreach and communications than education and others have been developed primarily with public relations in mind, some helpful educational programs have also been produced.

The combined budget of federal agencies for environmental research and development approached $8 billion in 2003. The combined federal agency budget total for environmental education is optimistically estimated at about 1.5 percent of these funds, or $120 million. Probably about $60 million of these funds is distributed in the form of competitive grants to the field itself rather than being spent in-house by agencies – and the majority ($30+ million) of these grant funds comes from the National Science Foundation.

It appears that the majority of federal money invested in environmental education is spent on the following activities in descending order of investment:

- development and delivery of agency materials, curricula, and in-house training programs
- underwriting agency environmental scholarships, fellowships, and internships, which helps to address the issue of federal environmental/science workforce needs but is of lesser value in advancing environmental literacy on a broad public scale
- For all agencies other than NSF, the smallest amount of money goes into competitive grants, which often are not specified for environmental education but instead include EE as an eligible activity within science education or other grant programs (making it impossible to compile precise EE funding figures).

The following are many of the federal agency (primarily funding) programs relevant to environmental education, in approximate descending order of size and impact.