

**NORTH AMERICAN ASSOCIATION FOR ENVIRONMENTAL EDUCATION
(NAAEE)**

**DEVELOPMENT OF THE
STANDARDS FOR THE INITIAL PREPARATION OF
ENVIRONMENTAL EDUCATORS**

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A full copy of the standards and associated materials are available at www.naaee.org

The North American Association for Environmental Education (NAAEE) submitted its *Standards for the Initial Preparation of Environmental Educators* to the Specialty Areas Studies Board of NCATE for approval in October 2007. These are new, research-based standards that have been developed through a rigorous, multi-year process of critique and consensus. These standards apply to the *initial* level of teacher preparation only.

Overview of the Standards [For a full copy of the standards visit www.naaee.org]

Successful teachers of environmental education possess the competencies necessary to help all P-12 students become environmentally literate citizens. The NAAEE *Standards for the Initial Preparation of Environmental Educators* articulate seven, performance-based standards by describing essential knowledge, skills and dispositions for the following areas:

Standard 1 – Nature of Environmental Education and Environmental Literacy emphasizes *content knowledge* of the historical, theoretical, and research-based foundations of environmental education.

Standard 2 – Environmental Literacy of Candidates focuses on the knowledge, skills and dispositions of environmental literacy, the *content knowledge* necessary to successfully teach environmental education.

Standard 3 – Learning Theories and Knowledge of Learners stresses knowledge of theories of human development and learning, learning processes, and *individual differences*.

Standard 4 – Curriculum: Standards and Integration and ***Standard 5 – Instructional Planning and Practice*** emphasize the knowledge, skills and dispositions of *pedagogy* and *instructional planning* needed to design and deliver instruction that creates stimulating and motivating climates for learning and promotes environmental literacy.

Standard 6 – Assessment centers on the knowledge, skills and commitment necessary to make assessment integral to curriculum and instruction in environmental education, thereby fostering continuous intellectual, social, emotional, and physical development of each student.

Standard 7 – Professional Growth in Environmental Education emphasizes *professional and ethical practice*, the importance and benefits of belonging to a professional community, and professional development as a life-long endeavor and an indispensable asset to becoming a contributing member of the environmental education profession.

Developing Consensus for NAAEE's NCATE Standards

In order to make certain that the NAAEE *Standards for the Initial Preparation of Environmental Educators* reflect a widely shared understanding of environmental education teacher preparation, these standards were developed through a nation-wide process of review and comment modeled after the processes used in the development of the *Guidelines for Learning (Pre K-12)* and the *Guidelines for the Preparation and Professional Development of Environmental Educators*.

A 10-person writing team comprised of environmental education professionals from diverse backgrounds and organizational affiliations was formed by NAAEE in 2003. The writing team took on the challenge of synthesizing expectations from the previous standards development projects (NAAEE, 2004a and NAAEE, 2004b) and current environmental education research. Based on this research, the team produced an initial framework in the spring of 2004. The writing team identified a list of “key influentials” in environmental education (i.e., researchers, higher education faculty, leaders) and asked them to provide feedback on this framework. Based on these comments, the writing team produced a second full draft of the standards and submitted them to the environmental education community for wide review in the fall of 2004. Copies of the draft were distributed at the NAAEE conference. In addition, the draft, along with review instructions and criteria, was posted on the NAAEE Web site and an invitation to comment was distributed through state and national list serves. Following this same process, third (August 2005) and fourth (April 2006) review drafts were developed by the writing team. At each key stage in the process, verbatim comments from the previous review draft have been analyzed and considered individually by the writing team when drafting the new version.

Writing Team Members

Bora Simmons (Chair)	National Project for Excellence in Environmental Education, University of Oregon, Eugene, OR
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Brenda Weiser	Environmental Institute of Houston, University of Houston – Clear Lake, Houston, TX
Terry Wilson	Department of Curriculum and Instruction, Western Kentucky University, Bowling Green, KY

In addition to posting review drafts on the NAAEE Web site, presentations were made at state, regional, and national conferences (e.g., NAAEE, National Association for Interpretation, Project Learning Tree, Council for Environmental Education, NSTA, ASCD, NMSA, ACEI, ASTE, NCSS) to publicize the effort and to encourage participation. In each of these cases, the presentation provided background information, an overview of the draft standards framework, and an invitation to comment. Hard copies of the most current draft were made available to conference attendees. Whenever possible, time was allotted during the presentation to review the document individually or in small groups and to provide written as well as oral comments.

Any individual or organization wishing to participate in the process has been encouraged to do so (that is, participation has not been restricted in any way). Efforts to publicize the process and the availability of review drafts have been made continuously. Approximately 190 individuals and organizations have participated in the development of these standards. Comments have been received from classroom teachers, school administrators, state natural resource agency personnel, nonformal environmental educators, and higher education faculty.

In addition, members of the writing team presented draft versions of the NAAEE *Standards for the Initial Preparation of Environmental Educators* at the SASB meetings in October 2006 and 2007. Feedback received from the SASB and NCATE staff was also incorporated into the document.

Environmental Education Standards Development Time Line

EVENT/TASK	DATE
NAAEE forms NCATE task force	Fall 2002
NCATE task force organizational meeting in DeKalb, IL	May 2003
Presentation of NCATE process to NAAEE membership (e.g., membership newsletter, , www.naaee.org , electronic newsletter)	October 2003
Standards writing team formed	November 2003
Standards writing team meets in Washington, D.C.	January 2004
First draft distributed to key influentials (e.g., researchers, EE leaders)	May 2004
Second draft posted for comment on NAAEE website	October 2004
Presentations made at NAAEE conference in Anchorage, AK	October 2004
Standards writing team meets in Washington, D.C.	January 2005
Presentation made at ASCD conference in Orlando, FL	March 2005
Presentation made at National Association of Interpreters regional conference	March 2005
Presentation made at Project Learning Tree conference in Portland, OR	June 2005
Third draft posted for comment on NAAEE website	August 2005
Presentation made at Utah Society for Environmental Education conference	September 2005
Presentation made at NAAEE conference in Albuquerque, NM	October 2005
Writing team meets in Albuquerque, NM	October 2005

EVENT/TASK	DATE
Presentations made at NSTA regional conferences (IL and TN)	November/December 2005
Writing team meets in Houston, TX	February 2006
Fourth draft posted for comment on NAAEE website	April 2006
Presentation made at Council for Environmental Education conference in New Orleans, LA	June 2006
Presentation at NCATE meeting in Washington, D.C.	October 2006
Presentation at NAAEE conference in Minneapolis, MN	October 2006
Presentation at NCSS conference in Washington, DC	December 2006
Discussion held at ASTE conference in Tampa, FL	January 2007
Writing Team meeting in Washington, D.C.	March 2007
Presentation at ACEI meeting in Tampa, FL	May 2007
Submit standards at NCATE meeting in Washington, DC for final approval	October 2007

Building from previous NAAEE standards development efforts

The environmental education profession has developed expectations for what P-12 students should know and be able to do as a result of environmental education instruction (NAAEE, 2004a) and what knowledge, skills, and dispositions environmental educators should demonstrate at the onset of their careers (NAAEE, 2004b). Both of these foundational documents for environmental education were developed through rigorous, highly participatory national efforts and used extensively in the development of the *Standards for the Initial Preparation of Environmental Educators*.

P-12 Student Standards for Environmental Education

Excellence in Environmental Education – Guidelines for Learning (Pre K-12), first published in 1999 by NAAEE, provides explicit links between the standards-based core curriculum and environmental education. The *Guidelines for Learning (Pre K-12)* (NAAEE, 2004a) was written to provide students, parents, educators, policy makers, and the public with a set of common, voluntary standards for environmental education. The standards support state and local environmental education efforts by:

- Setting expectations for performance and achievement in fourth, eighth, and twelfth grades;
- Suggesting a framework for effective and comprehensive environmental education programs and curricula;
- Demonstrating how environmental education can be used to meet standards set by the traditional disciplines and to give students opportunities to synthesize knowledge and experience across disciplines; and
- Defining the aims of environmental education.

They set a standard for high-quality environmental education in schools across the country, based on what an environmentally literate person should know and be able to do (Simmons, 1995). They draw on the best thinking in the field to outline the core ingredients for environmental education.

The *Guidelines for Learning* were developed using a national process of comment and review (Simmons, 2005). By the time they were published, over 2500 teachers, school administrators, environmental educators, scientists, and parents, as well as representatives from a variety of professional organizations and government agencies had provided input. Existing environmental education frameworks, definitions, models and research literature were used as a foundation for this document (Simmons, 1995).

The standards are organized around the following four strands:

Strand 1 – Questioning, Analysis and Interpretation Skills

Environmental literacy depends on learners' ability to ask questions, speculate, and hypothesize about the world around them, seek information, and develop answers to their questions. Learners must be familiar with inquiry, mastering fundamental skills needed to gather and organize information, interpret and synthesize information, and develop and communicate explanations.

Strand 2 - Knowledge of Environmental Processes and Systems

An important component of environmental literacy is knowledge of the processes and systems that comprise the environment, including human systems and influences. This understanding is based on knowledge synthesized from across traditional disciplines. The understandings in this section are grouped in four sub-categories:

- 2.1 - The Earth as a physical system;
- 2.2 - The living environment;
- 2.3 - Humans and their societies; and
- 2.4 - Environment and Society.

Strand 3 - Skills for Understanding and Addressing Environmental Issues

Skills and knowledge are refined and applied in the context of environmental issues. These environmental issues are real-life dramas where differing viewpoints about environmental problems and their potential solutions are played out. Environmental literacy includes the abilities to define, learn about, evaluate, and act on environmental issues. In this section, the skills are grouped in two sub-categories:

- 3.1 - Skills for analyzing and investigating environmental issues; and
- 3.2 - Decision-making and citizenship skills.

Strand 4 - Personal and Civic Responsibility

Environmentally literate citizens are willing and able to act on their own conclusions about what should be done to ensure environmental quality. As learners develop and apply concept-based

learning and skills for inquiry, analysis, and actions, they also understand that what they do individually and in groups can make a difference.

Competency Expectations for Environmental Educators

First published in 2000, *Guidelines for the Preparation and Professional Development of Environmental Educators* (NAAEE, 2004b) represents a set of recommendations about the basic knowledge and abilities educators need to provide high-quality environmental education. The guidelines are designed to apply:

- Within the context of pre-service teacher education programs and environmental education courses offered to students with varied backgrounds such as environmental studies, geography, liberal studies, or natural resources;
- To the professional development of educators who will work in both formal and nonformal educational settings, offering programs at the pre-kindergarten through 12th grade levels; and
- To full-time environmental educators.

Guidelines for the Preparation and Professional Development of Environmental Educators outlines the experiences and learning that will help educators deliver instruction that effectively fosters environmental literacy. The guidelines were designed to provide a mechanism for gauging the quality of pre-service and in-service preparation programs as well as the capabilities of environmental educators. As with the *Guidelines for Learning (Pre K-12)* (NAAEE, 2004a), these guidelines were developed through a process of review and comment (Simmons, 2005). Substantial research related to the preparation of environmental educators was conducted. In addition, the education literature was reviewed with particular attention paid to pre-service teacher preparation. This research was used by the writing team as a springboard for developing the first full outline of the guidelines. That outline, along with subsequent drafts, was sent out for national review. Over the span of two years, over 750 individuals and organizations commented on the draft guidelines. Comments were received from environmental educators representing a wide variety of settings, including nonformal institutions, colleges and universities, government agencies, and P-12 schools. Faculty with expertise in environmental studies, natural resources, and teacher preparation from colleges and universities were particularly active in the review process. The Professional Development Guidelines are organized around six themes:

Theme 1 - Environmental Literacy

Educators must be competent in the skills and understandings outlined in *Excellence in Environmental Education - Guidelines for Learning (Pre K-12)*.

- Questioning, analysis and interpretation skills
- Knowledge of environmental processes and systems
- Skills for understanding and addressing environmental issues
- Personal and civic responsibility

Theme 2 - Foundations of Environmental Education

Educators must have a basic understanding of the goals, theory, practice, and history of the field of environmental education.

- Fundamental characteristics and goals of environmental education
- How environmental education is implemented
- The evolution of the field.

Theme 3 - Professional Responsibilities of the Environmental Educator

Educators must understand and accept the responsibilities associated with practicing environmental education.

- Exemplary environmental education practice
- Emphasis on education, not advocacy
- Ongoing learning and professional development

Theme 4 - Planning and Implementing Environmental Education Programs

Educators must combine the fundamental of high-quality education with the unique features of environmental education to design and implement effective instruction.

- Knowledge of learners
- Knowledge of instructional methodologies
- Planning for instruction
- Knowledge of environmental education materials and resources
- Technologies that assist learning
- Settings for instruction
- Curriculum planning

Theme 5 - Fostering Learning

Educators must enable learners to engage in open inquiry and investigation, especially when considering environmental issues that are controversial and require students to seriously reflect on their own and others' perspectives.

- A climate for learning about and exploring the environment
- An inclusive and collaborative learning environment
- Flexible and responsive instruction

Theme 6 - Assessment and Evaluation

Environmental educators must possess the knowledge and commitment to make assessment and evaluation integral to instruction and programs.

- Learner outcomes
- Assessment that is part of instruction
- Improving instruction

Comparison of the NCATE Environmental Education Standards & Previously Developed Environmental Education P-12 and Educator Standards

NAAEE Program Standards for the Initial Preparation of Environmental Educators	Guidelines for Learning (Pre K-12) (NAAEE, 2004a)	Guidelines for Preparation and Professional Development (NAAEE, 2004b)
Standard 1: Nature of Environmental Education & Environmental Literacy		Theme 2: Foundations of Environmental Education
Standard 2: Environmental Literacy of Candidates	Strand 1: Questioning, Analysis and Interpretation Strand 2: Knowledge of Environmental Processes and Systems Strand 3: Skills for Understanding and Addressing Environmental Issues Strand 4: Personal and Civic Responsibility	Theme 1: Environmental Literacy
Standard 3: Learning Theories & Knowledge of Learners		Theme 4: Planning and Implementing Environmental Education Programs
Standard 4: Curriculum: Standards & Integration		Theme 3: Professional Responsibilities of the Environmental Educator Theme 4: Planning and Implementing Environmental Education Programs
Standard 5: Instructional Planning & Practice		Theme 4: Planning and Implementing Environmental Education Programs Theme 5: Fostering Learning
Standard 6: Assessment		Theme 6: Assessment and Evaluation
Standard 7: Professional Growth in Environmental Education		Theme 3: Professional Responsibilities of the Environmental Educator

Relationship of Environmental Education Standards to INTASC

There are no INTASC model environmental education standards. The only existing national standards for teacher preparation in environmental education are *Guidelines for the Preparation and Professional Development of Environmental Educators* (NAAEE, 2004b). Given the importance of INTASC, however, the writing team conducted a detailed analysis comparing the INTASC's *Model Standards for Beginning Teacher Licensing, Assessment and Development: A Resource for State Dialogue* (1992) and the *Guidelines for the Preparation and Professional Development of Environmental Educators* (NAAEE, 2004b). This analysis was integral to development of the core set of competencies reflected in the *NAAEE Standards for the Initial Preparation of Environmental Educators*.

Comparison of Preparation Guidelines (NAAEE 2004b) and INTASC Model Standards						
NAAEE Guidelines vs. INTASC	Environmental Literacy	Foundations of Environmental Education	Professional Responsibilities of the Environmental Educator	Planning and Implementing Environmental Education Programs	Fostering Learning	Assessment & Evaluation
<p>Principle #1: The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches and can create learning experiences that make these aspects of subject matter meaningful for students.</p>	<p>1.1 Questioning, analysis, & interpretation skills</p> <p>1.2 Knowledge of env. processes & systems</p> <p>1.3 Skills for understanding & addressing environmental issues</p> <p>1.4 Personal & civic responsibility</p>					
<p>Principle #2: The teacher understands how children learn & develop, & can provide learning opportunities that support their intellectual, social & personal development.</p>			<p>3.1 Exemplary environmental education practice</p>	<p>4.1 Knowledge of learners</p>		

Comparison of <i>Preparation Guidelines (NAEEE 2004b)</i> and INTASC Model Standards						
NAEEE Guidelines vs. INTASC	Environmental Literacy	Foundations of Environmental Education	Professional Responsibilities of the Environmental Educator	Planning and Implementing Environmental Education Programs	Fostering Learning	Assessment & Evaluation
Principle #3: The teacher understands how students differ in their approaches to learning & creates instructional opportunities that are adapted to diverse learners.			3.2 Emphasis on education, not advocacy	4.1 Knowledge of learners 4.2 Knowledge of instructional methodologies 4.4 Knowledge of environmental education materials & resources 4.6 Settings for instruction	5.2 An inclusive & collaborative learning environment	
Principle #4: The teacher understands and uses a variety of instructional strategies to encourage students' development of critical thinking, problem solving, and performance skills.				4.2 Knowledge of instructional methodologies 4.5 Technologies that assist learning 4.6 Settings for instruction	5.3 Flexible and responsive instruction	
Principle #5: The teacher uses an understanding of individual & group motivation & behavior to create a learning environment that encourages positive social interaction, active					5.1 A climate for learning about & exploring the environment 5.2 An inclusive & collaborative learning environment	

Comparison of <i>Preparation Guidelines</i> (NAAEE 2004b) and INTASC Model Standards						
NAAEE Guidelines vs. INTASC	Environmental Literacy	Foundations of Environmental Education	Professional Responsibilities of the Environmental Educator	Planning and Implementing Environmental Education Programs	Fostering Learning	Assessment & Evaluation
engagement in learning, & self-motivation.						
Principle #6: The teacher uses knowledge of effective verbal, nonverbal, & media communication techniques to foster active inquiry, collaboration, and supportive interaction in the classroom.				4.2 Knowledge of instructional methodologies 4.5 Technologies that assist learning		
Principle #7: The teacher plans instruction based upon knowledge of subject matter, students, the community, & curriculum goals.				4.3 Planning instruction 4.7 Curriculum planning	5.3 Flexible & responsive instruction	
Principle #8: The teacher understands and uses formal and informal assessment strategies to evaluate and ensure the continuous intellectual, social and physical development of the learner.						6.1 Learner outcomes 6.2 Assessment that is part of instruction 6.3 Improving instruction
Principle #9: The teacher is a reflective			3.3 Ongoing learning & professional			6.3 Improving instruction

Comparison of <i>Preparation Guidelines</i> (NAAEE 2004b) and INTASC Model Standards						
NAAEE Guidelines vs. INTASC	Environmental Literacy	Foundations of Environmental Education	Professional Responsibilities of the Environmental Educator	Planning and Implementing Environmental Education Programs	Fostering Learning	Assessment & Evaluation
practitioner who continually evaluates the effects of his/her choices and actions on others (students, parents, & other professionals in the learning community) and who actively seeks out opportunities to grow professionally.			development			
Principle #10: The teacher fosters relationships with school colleagues, parents, and agencies in the larger community to support students' learning and well-being.		2.2 How environmental education is implemented		4.4 Knowledge of environmental education materials and resources 4.6 Settings for instruction		

Example Invitation to Participate in the Review Process

REVIEW DRAFT NAAEE Program Standards for the Initial Preparation of Environmental Educators April 2006

An Invitation to Participate

The North American Association for Environmental Education (NAAEE) has embarked on an exciting venture and we would like to ask for your assistance. NAAEE is developing *NCATE Program Standards for the Initial Preparation of Environmental Educators*. These standards, when approved, will be used by NCATE in their accreditation process of college/university teacher education programs across the country. Consequently, the approved standards could serve as a catalyst and encourage further development of environmental education programs for pre-service teachers.

This, and all future drafts, will be submitted to the environmental education community for review and comment. The process will be iterative. We anticipate that the standards writing process will take a minimum of two more years.

As part of the standards writing process, I would like to invite you to review this draft (and future drafts as they are developed). The writing team will compile all of the comments and revise the document accordingly.

In order to assist you in your assessment of this draft, we have developed a series of *review criteria*. As you will see, we are interested in your views of the overall framework (the seven standards) as well as your views of each rubric.

Thank you in advance for your work. Your participation is essential to the process. Feel free to let others know about the opportunity to comment. If you have any questions about the standards or the process, please do not hesitate to contact me directly.

Please return your comments by May 22, 2006.

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Review Criteria

Please consider the following criteria as a guide as you review the proposed standards.

Criteria for Individual Standards and their Rubrics

- ❖ Does the standard find a home in the history, traditions, and definition of the field of environmental education (literature base)?
- ❖ Are there credible and sufficient sources of evidence that we can cite to guide and support each standard (research, evaluation, and assessment base) and its rubric?
- ❖ Is the standard conceptually clear, coherent, and cohesive? Is the rubric conceptually clear, coherent, and cohesive?
- ❖ Is the standard and its rubric reasonably discrete (clear and distinct) from the other standards and their rubrics?
- ❖ Within each standard and its rubric, are the practices included significant for the field of environmental education, including, but not limited to practices reflected in the NAAEE Guidelines (see www.naaee.org/npeee for more information)?
- ❖ Are the practices reflected within each standard and its rubric appropriate for the initial preparation of teacher education candidates?
- ❖ Do the practices reflected within each standard and its rubric allow higher education institutions reasonable flexibility in the design of experiences to address/meet that standard?

Criteria for the Full Set of Standards

- ❖ Are the standards and their rubrics, as a whole, reasonably comprehensive in scope (i.e., do they avoid any glaring omissions, particularly in comparison to other sets of program standards offered by NCATE)?
- ❖ Are the standards and their rubrics, as a whole, comparable to those offered by NCATE (e.g., number, terminology, format)?
- ❖ Will the standards and their rubrics, as a whole, be economical, usable, and useful in helping higher education institutions develop, implement, and improve environmental education program offerings?