



Reflective Practitioners: Environmental Educators Share Their Professional Development Needs for the Next Five Years

by Michele L. Archie

How do we
move teachers
from interest to
implementation?
James J. 2/5, Melissa, Diane, Anne, Kelly, Barb, Eco Lab

What is the best way
to reach the masses?
Communication
Media
James J. 2/5, Deb, Anne, Eco lab, Lisa, Amanda King, Donna, Dasha

How do we influence
change within a
large established
organization (without losing
our job)?
Nelson, GR, Dining Hall, James, Lisa, Dasha, Guss

In 2009, more than 400 environmental educators from across the United States contributed to a study of professional development needs and priorities. Dr. Lynette Fleming hopes that the field will listen to what they have to say.

Fleming, whose decades of experience with evaluation, program development, and training uniquely qualified her to spearhead the study, said, “It was heartening to see that a lot of things we’ve said are important for 30 years are at the top of the priority list. But as we continue to analyze the data, it’s clear that much more needs to be done to compile what we know as a field and make that knowledge more broadly accessible. This assessment gives us an opportunity to reshape professional development to respond to current needs.”

The Environmental Education Professional Development Needs and Priorities Study was funded by the U.S. Environmental Protection Agency and the U.S. Fish and Wildlife Service through the Environmental Education and Training Partnership.¹ EETAP’s Dr. Gus Medina noted that this kind of careful, rigorous needs assessment is unprecedented in the field. “Since EETAP started in 1995, we’ve been offering training based on our understanding of what’s important and feedback from participants. No study has taken a broad, scientific look.”

Fleming, who started conducting teacher workshops in the early 1970s, agreed. “The typical approach to professional development has been mostly someone saying, ‘This is what you need.’ The dialogue about what is really needed and how to provide it is often missing.”

Her hope? That the study’s findings stimulate this dialogue between providers and participants, offering starting points for educators to develop their own professional development scenarios, and for providers to refine what they do and how they do it.

“It’s clear that much more needs to be done to compile what we know as a field and make that knowledge more broadly accessible.”

- Dr. Lynette Fleming

About the Study—Methods

Three components lend credibility to the study's findings and the interpretations and recommendations offered in its report.

Evaluation Team

Despite, or perhaps because of, her long experience with evaluation, Dr. Lyn Fleming knew she needed the participation of other EE professionals: "The project was guided by a well-rounded team of colleagues who knew the literature and had experience with a wide array of EE and professional development formats." Evaluation team members included Dr. Annelise Carlton-Hug, Dr. Janice Easton, Dr. William Hug, Dr. Tom Marcinkowski, and Dr. Marcella Wells.

Study Design

The study used individual and focus group interviews with 66 environmental and conservation education leaders and practitioners. Analysis of these interviews yielded 89 topics related to professional development needs, which were grouped into six themes and used to develop an online questionnaire.

After two rounds of testing and revision, the questionnaire was administered to a random sample of nearly 1,000 educators drawn from the databases of 12 professional development, environmental education, and environmental organizations. Participants were distributed among seven groups (such as government agencies, nongovernmental organizations, schools and universities, and business) to promote a range of responses reflective of the field as a whole

Thorough Analysis

The questionnaire elicited a 37 percent response rate. Analysis of the 325 responses used content analysis, as well as descriptive and inferential statistical analysis. The analysis is ongoing and will result in additional reports that will look in-depth at professional development needs in formal, informal, and nonformal settings, and compare responses of professionals from different types of organizations and educational programs, regions of the country, and length of service in the profession.

The study (available by clicking [here](#)) offers plenty of grist for the mill. More than one-third of its 108 pages is devoted to discussing the key findings and their implications, and offering recommendations to organizations that lead and fund environmental education professional development. These sections offer suggestions—based on literature review, study results, and consultation with a broad-based evaluation team—about how to build on existing knowledge and programs to respond to the field's stated needs.

¹ EETAP is a national leader in delivering environmental education training for education professionals. EETAP is funded by the U.S. Environmental Protection Agency's Environmental Education Division through a cooperative agreement with the University of Wisconsin-Stevens Point. The U.S. Fish and Wild Service's National Conservation Training Center, which provided additional funding to support this study, is a partner in the EETAP program. For more information about EETAP visit www.eetap.org.

Study Design Illustrated



Planning and literature review

Individual interviews with 24 environmental and conservation education leaders representing:

1. Federal natural resource agencies
2. State/municipal natural resource agencies
3. NGOs working with youth under 25
4. NGOs working with adults and communities
5. Formal educators
6. Nonformal educators
7. University educators of formal educators
8. University educators of nonformal educators



Focus group interviews with 42 practitioners, based on themes emerging from literature review and individual interviews.

Identification of 89 professional development topics

Develop, test, revise, and finalize online questionnaire

Distribution of questionnaire to a random sample of nearly 1,000 drawn from 12 organizations' databases. Participants were drawn equally from seven strata:

1. Federal government agencies
2. State or county government agencies
3. Local or municipal government agencies
4. Nongovernmental or nonprofit organizations
5. Pre-K to 12th grade school systems
6. University/college
7. Business

325 respondents
(37% response rate)



Data analysis using content analysis, descriptive and inferential statistics

Draw conclusions, report on findings



EE's Top 30

Study participants were asked to select the top three priorities for their own professional development, and the top three for increasing the credibility of the EE field in next five years. These rankings were then combined to provide overall priorities. The top 30 overall priorities sorted into the same six themes used in the study report are shown below.

Audiences and Partners Theme

1. Community EE— involving everyone in local communities in EE (i.e., preschoolers through retirees, university professors, businesses, health care workers, etc.)
11. Communication skills for delivering EE to diverse audiences and partners
30. Planning, implementing and evaluating EE programs or services for decision makers

EE Profession Theme

2. Renewal opportunities for EE leaders to share models of what works
13. Renewal opportunities for EE leaders to work together for a common cause
14. Networking with others for support
18. Guidelines for Excellence trainings about environmental education standards

Process of EE Theme

3. What research tells us about cognition—how people interact and connect with nature
5. Basic environmental education training for natural resource professionals, scientists, conservation, youth activity leaders, and classroom teachers
6. Strategies and facilitation techniques for teaching thinking skills—systems thinking, critical thinking, analytic thinking, problem solving
7. Integrating EE into K-12 curricula
9. Integrating EE into STEM (science, technology, engineering, and math projects) in formal education settings
10. What research tells us about motivation—what leads people to take action.
16. Strategies and facilitation techniques for inquiry methods of teaching
19. What research tells us about instruction—how to engage diverse audiences
20. Use of technological resources to improve teaching practice and participant learning
23. What research tells us about learning—how EE can help students learn in other areas
25. What research tells us about motivation—transforming attitudes
26. Working with No Child Left Behind and state standards in formal education settings
27. What research tells us about motivation—behavior change

EE's Top 30 (continued)

Content Knowledge Theme

- 4. Environmental sustainability—communities, culture, human health
- 15. Core concepts, basic understanding of the environment and environmental issues that are the foundation of EE
- 17. Key concepts and how to teach about stewardship
- 24. Key concepts and how to teach about sustainability
- 28. Key concepts and how to teach about climate change

Business of EE Theme

- 8. Promoting action, citizen participation, social marketing, and behavior change appropriate to your audience(s)
- 21. Reducing Nature Deficit Disorder
- 29. Fund raising, grant writing

Evaluation Theme

- 12. Needs assessment, using evaluation to design or develop EE programs/services to meet audience needs
- 22. Building capacity for program evaluation: How to build evaluation into planning and programs

*Professional
Development
Priorities*

Key Finding

EE in a Community Context

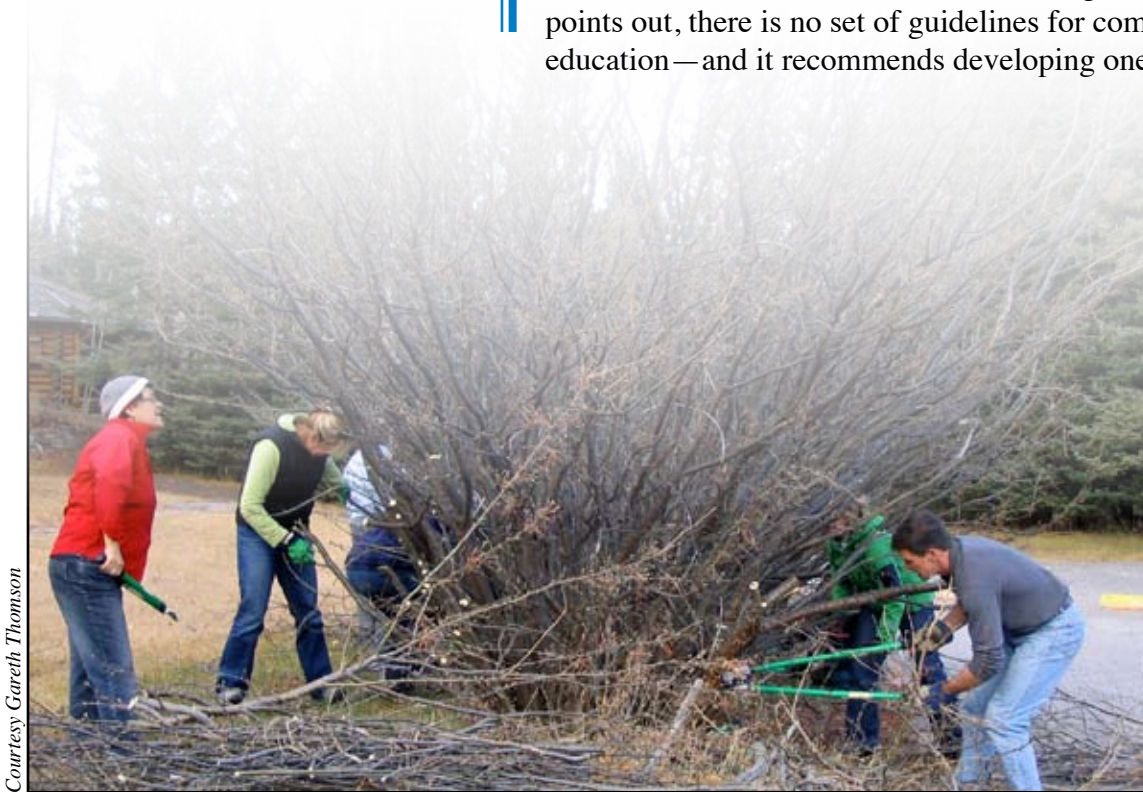
“For a long time, the EE field seemed satisfied working with children and adults in nature centers and schools, but now there is a burgeoning interest in, and a growing body of experience with, reaching different audiences with education that is culturally and practically relevant to them.

- Dr. Gus Medina

Ask Fleming if there were surprises among the study’s findings, and she is quick to point to the top-ranked professional development need: Knowledge and skills for involving whole communities in environmental education. “When we looked at the importance of that topic in the context of some of the other highly ranked priorities, this jumped out as a critical finding. To me, this is the field saying, “We’re reaching beyond our traditional audiences, and we need help.”

From his vantage point at EETAP, Gus Medina has seen this movement unfolding for some time: “For a long time, the EE field seemed satisfied working with children and adults in nature centers and schools, but now there is a burgeoning interest in, and a growing body of experience with, reaching different audiences with education that is culturally and practically relevant to them.” As one of EETAP’s project partners working in an urban area observed, working within a community can challenge educators to reconsider not only *how* they teach, but more fundamentally, *what* they do (Robert Petty, National Audubon Society, page 9, *Still Developing the Toolbox*, 2009).

When developing programs, many environmental educators reach for the EE Guidelines for Excellence as a guide. But, as the study points out, there is no set of guidelines for community environmental education—and it recommends developing one.



Courtesy: Gareth Thomson

A top priority for study participants is to provide renewal opportunities where EE leaders can work together for common causes, share models of what works and build support networks. These EE professional development workshop participants put problem-solving and collaborative skills into practice as they attack a large, non-native shrub.

Dr. Bora Simmons, who spearheads the development and dissemination of EE guidelines through the National Project for Excellence in Environmental Education, has seen growing interest in guidelines for working with a variety of audiences, including adults, in a community context. “There is absolutely a need for guidelines that address both how to work with adult learners and how to deliver environmental education that works in communities, where the challenges are often about how to engage different segments of the community, including adults working in various professions, culturally diverse groups, and different age ranges.”

Among the other recommendations for enhancing professional development to support EE in a community context:

- Compiling and making accessible what is known through research and practice about topics such as adult education and differences between adult and youth education, communication and organizing skills that work in local communities and with diverse groups, and reaching decision makers.
- Continued support for existing EETAP initiatives for decision makers and diverse audiences, such as the Conservation Education Toolkit, diversity workshops for environmental educators, early childhood EE guidelines, the online “Making EE Relevant” course, the North American Association for Environmental Education’s cultural diversity website, and engaging tribes and other culturally competent organizations to deliver culturally relevant education.



The study recommends adding a set of guidelines for environmental education programs in a community context to the existing Environmental Education Guidelines for Excellence publications. Dr. Bora Simmons (at left) says there is “absolutely a need” for these guidelines. Shown here are Dr. Bora Simmons and Diane Silver at the Guidelines for Excellence booth at a recent NAAEE conference.

Key Finding

Renewal Opportunities for EE Professionals

Solidly near the top of the priority list for the next five years are opportunities for professional renewal and networking that focus on sharing models of what works, working together for common causes, and mutual support.

Gus Medina noted that the questionnaire results affirmed a common characteristic of adult learners: “They know what they need and how they like to learn. The importance that EE professionals place on renewal and networking opportunities affirms a theme that occurs over and over in educational literature, and that’s the importance of

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- Dr. Bora Simmons

teachers meeting with other teachers, learning together, and sharing strategies.”

The study points out that providing substantial opportunities for this kind of networking and renewal may require rethinking and reformatting professional development and education venues—from conferences to websites to online and in-person courses.

The EE Leadership Clinics developed with EETAP support offer one model tailor-made to meet these professional development needs. These multi-day events bring together teams of individuals from different organizations to work on specific projects, advance knowledge and skills in areas that respond to their needs, and share with others. Clinics are participant-driven and team-focused. They offer varied formats for interaction and expression, and aim to build a long-term learning community among EE leaders.

Gareth Thomson, Executive Director of the Alberta Council for Environmental Education (ACEE) attributes much of the success of ACEE to one such Leadership Clinic: A multi-stakeholder team from Alberta that attended a 2005 clinic launched the initiative that spawned ACEE. ACEE has since sponsored two provincial Leadership Clinics.

Courtesy Gareth Thomson



Leadership Clinics offer one model tailor-made to meet the field’s need for professional renewal and networking opportunities that focus on sharing models of what works, working together for common causes, and support. Collaboration, creative expression, and project development all come into play as teams work together during the 2009 Alberta Leadership Clinic.

Participants have given these clinics rave reviews, and Thomson attributed their success to several factors: “Each organization brings a team, which helps ensure sustainability and longevity. Teams and participants have to get their act together before they attend, identifying a project or task, and a goal, as well as what they and their organizations most need in terms of professional development. Up to 40 percent of the clinic is dedicated to teams working on their projects, so it’s very hands-on and practical.”

Finally, Thomson noted, “The desire for networking and sharing among peers is a real human need, and the multi-day format encourages that connection.”

Between 1996 and 2005 EETAP sponsored nine national Leadership Clinics. Since then the model has been applied in a handful of regional clinics, and more than a dozen state, provincial, and local clinics. (To learn more about Leadership Clinics, [click here](#).) The professional development study recommends re-establishing the clinics as a way of providing the kind of renewal opportunities questionnaire respondents deemed critical.

Other recommendations include:

- Expanding trainings using the EE Guidelines for Excellence, and evaluating the use of the guidelines and outcomes of trainings over the past 15 years to inform future efforts; and
- Compiling literature reviews, annotated bibliographies, and educator-friendly summaries of models, ideas, programs, exhibits, and educational approaches known to work.

Key Finding

[Link Research and Practice](#)

Study participants prioritized several topics on which better understanding of social science research findings related to environmental education goals is needed. From the study: “Findings from this study imply that environmental educators do not feel conversant in what we know about the effectiveness of EE programs and initiatives (evaluation research), theory and models related to promoting EE goals and objectives (education theory, advertising theory, consumer science theory) as well as research related to EE process and outcomes (e.g., brain research, marketing and advertising research, education research).”

Lyn Fleming distilled this into a simple formulation: “We need more ways for people to access information on how people connect with nature, what motivates action, how attitudes change, and so forth.”

Again, the study recommends a focused effort to compile

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- Dr. Trudi Volk

comprehensive literature reviews and bibliographies on these priority topics. These should reach deep into environmental education literature as well as literature from related fields.

Key Finding

Fill Gaps in Skills and Knowledge

The more things change, the more they stay the same, right? Professional development in any field is an ongoing process, with new people entering the field and old hands who missed or need to brush up on content. As Gus Medina said, “That means you always have to teach the basic concepts and skills.”

So it is probably not surprising that basic environmental education training ranked fifth on the study’s priority list, seen by respondents as especially important to the credibility of the field. Classroom teachers are an obvious audience for this training, but the study also identified natural resource professionals, scientists, conservation professionals, and youth activity leaders as important to reach.

Courtesy Dr. Trudi Volk



Skills for critical thinking and inquiry instruction ranked high on the priority list. For many teachers, in-depth, hands-on professional development experiences with plenty of support and follow-up are key to developing the confidence to apply these skills with their students. Teacher Darleen Ah Loy (at left) rolls up her pant legs to join students in a hands-on investigation.

In February 2010, when Kentucky's fifth class completed its training, the state had graduated more than 140 individuals from its nonformal environmental educator certification program. The yearlong program involves four, three-day workshops held in different parts of the state, an independent study, and as course director Jane Eller put it, "constant modeling, learning by doing, and evaluation. It's more like being involved in, and less like studying, environmental education."

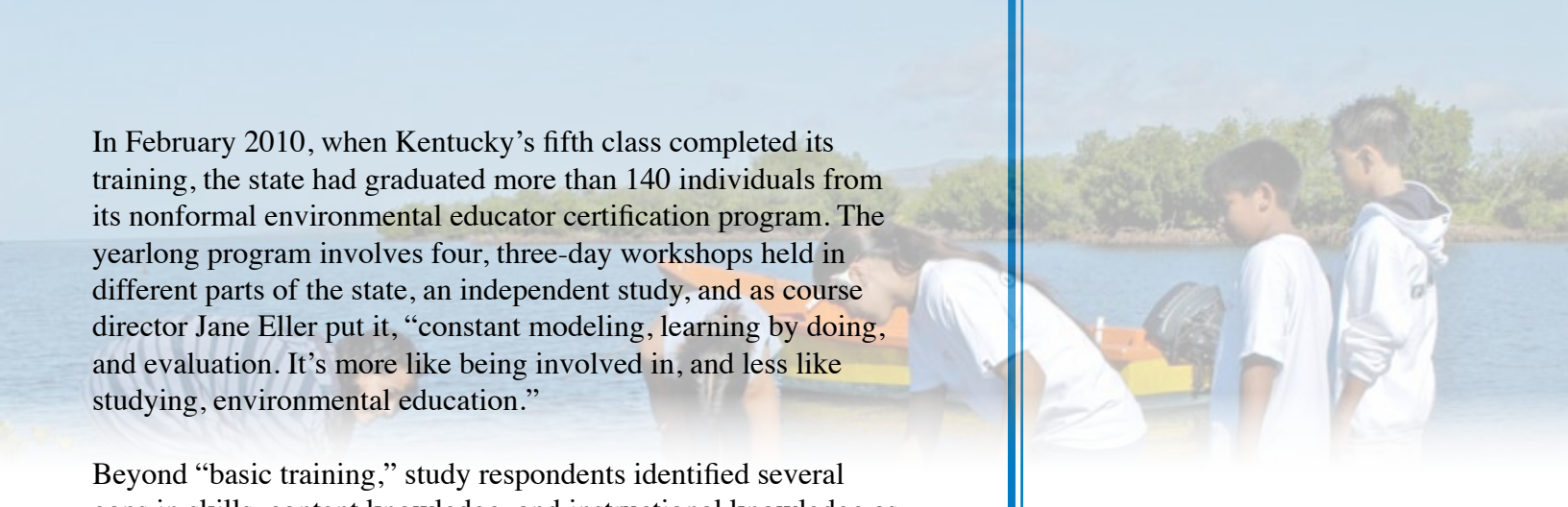
Beyond "basic training," study respondents identified several gaps in skills, content knowledge, and instructional knowledge as professional development priorities for the next five years. Among the gaps: Strategies and facilitation methods for teaching critical thinking skills and using inquiry methods of instruction; knowledge and skills for promoting citizen participation and action; and evaluation knowledge, skills, and capacity.

The kind of hands-on, immersion approach that Kentucky uses in its nonformal certification also works well for these skill sets, noted Dr. Trudi Volk of the Center for Instruction, Staff Development and Evaluation in Carbondale, Illinois. "Any topic with depth, or that's unfamiliar territory, requires dedicated time and sequencing. You can't really learn to think critically by being taught about critical thinking. You have to experience it—and for environmental educators, that experience has to be in the context of environmental problems, issues, and solutions."

Only once educators have that skill set, Volk explained, can they approach learning the strategies and methods for teaching others how to think critically in those same contexts: "It takes time for professionals to make it their own, and see the big picture of what they're trying to accomplish, before they can integrate it into their teaching."

In Hawaii, critical thinking is taught using an integrated model that includes elements of reasoning, as well as intellectual traits, standards, processes, and skills—which certainly qualifies it as a topic worthy of dedicated professional development time and sequencing. Colleen Murakami, longtime facilitator of critical thinking and inquiry instruction at the Hawaii Department of Education, observed that, for these kinds of complex learning, "continuous support is critical for success."

In one Hawaii program that used local watersheds as a context for teaching critical thinking and inquiry, teachers committed twelve staff development days in their first year, eight days in the second, and six in the third. Murakami noted, "We worked with teams of teachers from each school, and established a cadre to provide



“Continuous support is critical for success.”

- Colleen Murakami

“We worked with teams of teachers from each school, and established a cadre to provide support and offer local workshops on each island. We built in many opportunities for project teachers to interact and collaborate with community members and government agency staff. In the end, many of the teachers felt like part of a cohesive ‘family’ of critical thinkers, which helped them teach more substantively and effectively, and challenge their students to be critical thinkers.”

- Colleen Murakami

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Recommendations for filling the gaps in skills, content knowledge, and instructional knowledge include:

- Compile research reviews and summaries from EE and other professions to synthesize how theories and research about cognition, motivation, instruction, and learning relate to inspiring people to take responsible action, connecting people with nature, building critical thinking skills, and other priorities;
- Develop a concentrated and multi-faceted effort to teach environmental educators how to teach critical thinking skills;
- Help educators integrate environmental education into K-12 curricula, develop or adapt materials and programs to correlate with state and national education standards and EE Guidelines, and work with No Child Left Behind and other federal legislation; and
- Reach outside the profession to inform best practices in environmental education. For example, the fields of marketing and consumer science have honed skills for needs assessment, evaluation, demand analysis, and future forecasting. EE could benefit from cross-pollinating with these disciplines.

In the Alberta Council for Environmental Education’s 2009 needs assessment, 96 percent of the 70 organizations responding supported weaving the theme of “moving learners to action” throughout our professional development offerings.

Gareth Thomson
Executive Director
Alberta Council for Environmental Education

96%

Key Finding

Deliver with a Personal Touch

Jane Eller said Kentucky's approach to training and certifying nonformal educators is "labor-intensive and can be expensive, but it's worth the investment." Participants learn from each other, teach each other, watch and critique each other's teaching. And said Eller, "instructors can provide individual attention to help participants work through trouble spots."

That kind of professional development with a personal touch resonates with study respondents, who indicated a strong preference for in-person local or regional workshops over other delivery formats. While the most popular way for these participants to receive EE professional development would be a full-day, hands-on, local or regional seminar focused on a single topic or theme, some questionnaire respondents and several of the educators interviewed for this article cautioned that professional development must be delivered in a format that matches its content, and emphasized the importance of follow-up.

The priorities identified in the study point to the following process as a general template for delivering professional development:

- Compile what is known through research, theory, evaluation and practice about the content or skills to be covered;
- Facilitate live, local or regional forums where participants share knowledge and skills validated by evidence and experience, and have opportunities to work together on common aims; and
- Provide multiple opportunities for continued sharing, networking, and support from participants, facilitators, and others.

Also of interest to questionnaire respondents:

- Professional development offerings that involve field work with natural or social scientists; and
- An interactive website where they could assess their needs, create individual professional development plans, and access resources for meeting their needs.

Courtesy Dr. Trudi Volk



Environmental educators appreciate face-to-face instruction, and value working together with, and the support of, other educators. Dr. Trudi Volk offers some one-on-one advice to teachers in an issue investigation workshop.

“It’s a safe bet that the study results will shape grant programs and other initiatives, starting almost immediately.”

- Dr. Bora Simmons

Into the Future: Putting the Study to Work



Gus Medina hopes the publication of the Environmental Education Professional Development Needs and Priorities Study will “stir the pot a little bit. It’s good to question how we do professional development, what it should look like for adult learners, so we can provide training that is meaningful and accessible to professionals.”

The report concludes with several pages of recommendations aimed at specific organizations that are leaders in EE professional development. Bora Simmons noted, “It’s a safe bet that the study results will shape grant programs and other initiatives, starting almost immediately.” If the field takes seriously the study’s suggested template for professional development offerings—beginning with compiling information about, and summaries of, key research findings—Gus Medina said, “There is a huge amount of work that needs to be done to make existing information more accessible.”

But, as monumental as the task ahead might be, Lyn Fleming says change can start as easily as “looking at the findings and asking how existing programs, websites, and courses can be changed even slightly to address these priorities.”

About the Author

Michele Archie is a principal of The Harbinger Consulting Group (www.harbingerconsult.com). She authored several publications produced by the National Project for Excellence in Environmental Education (a project of the North American Association for Environmental Education) including *Environmental Education Materials: Guidelines for Excellence*, *Excellence in Environmental Education: Guidelines for Learning (K-12)*, and *Guidelines for the Preparation and Professional Development of Environmental Educators*. Michele has collaborated on the production of community discussion guides on environmental issues, curriculum materials, and educator training programs.