The Renaissance of the Naturalist

MIKE WEILBACHER

Circles have always been important in our work as environmental educators. We teach about the circles of water, air, and soil; about life cycles and the cycle of seasons; about the spherical planet upon which we elliptically orbit the sun. We love circles.

It is time now for a new cycle, a new circle. It is time for environmental educators to circle back upon our history and embrace the single most important aspect of our work: We must train a new generation of naturalists. That’s right, naturalists. As ozone holes widen and greenhouse gases rise, as habitats vanish and wetlands disappear, it is time to make that near-extinct endeavor — nature study — once again a core mission of environmental education. In a world where diversity dwindles daily, we must remember the names of the natural neighbors that share our communities.

It is time for a renaissance of the naturalist. There is no higher mission; only a nation of naturalists can confront and solve the overwhelming ecological problems that loom in our near future. I should add that I am surprised that I feel as I do.

History of Environmental Education

Though the history of environmental education (Swan 1975) can be traced down several paths, I believe it begins with Liberty Hyde Bailey, Cornell University’s creator of a program in 1896 that was designed to “encourage nature-study in rural schools.” The path continues with the founding in 1908 of the American Nature Study Society, an organization dedicated to nurturing the burgeoning nature study movement, and culminates with Anna Botsford Comstock, Cornell professor of nature study and author of the groundbreaking Handbook of Nature Study (1911) — a book amazingly still in print. Her opening chapter, “The Teaching of Nature Study,” is still relevant, some 80 years later: “Nature-study gives the child a sense of companionship with life out-of-doors and an abiding love of nature. . . . The object of the nature-study teacher should be to cultivate in the children powers of observation and to build up within them understanding (p. 2).

Environmental education was born in nature study, reached adolescence during conservation education, and achieved adulthood with Earth Day and the emerging environmental movement. But from the 1970s on, nature study fell rapidly into disfavor, perhaps rightfully so. It was perceived as a quaintly Victorian endeavor ready for the ash heap of educational history, for, in the modern era, environmental literacy had to be more than knowing that white pine sports needles in bundles of five, that ovenbirds say “teacher, teacher, teacher,” that male monarch butterflies have a thickened spot in their hind wings, or that male box turtles have redder eyes than their mates. As educators, we agreed that environmental literacy must include information about pollution, energy, solid and hazardous waste, climate change, extinction, and on and on. We realized that environmental education was not the dissemination of nature trivia but focused instruction in big-picture concepts.

The philosophical center of environmental education abandoned nature study. College degree programs lessened their requirements for science courses of almost any kind, and students enrolled in EE degree programs were eager to take courses less rigorous than entomology, botany, and zoology. Nature centers became EE centers, and naturalists became environmental educa-

Mike Weilbacher is a freelance environmental educator who travels to the nation’s schools, museums, parks, and centers presenting environmental theater programs. He is Pennsylvania’s Outstanding Environmental Educator for 1991 and Conservation Educator of the Year for 1992 and hosts “Earth Talk,” a radio newsmagazine of environmental issues on WHYY-FM in Philadelphia.
tors. Membership in the American Nature Study Society dwindled, whereas that of the National (now North American) Alliance for Environmental Education grew.

In the 1990s, the classically trained naturalist is an endangered species and becoming more rare by the day. Although the issues that we wrestle with as educators have become increasingly complex, the body of knowledge that environmental educators must know has shrunk—markedly.

The decline in content in the environmental education curriculum at the college level parallels the lessening of the information that we pass along to students. Today, it is less important that elementary and secondary students know anything about the environment; all that matters is that they do things—even simple-minded things—to “save the Earth.” For in the 1990s, EE shifted gears again, from big concepts to lists of ecologically correct behaviors. Now, environmental literacy means that kids know how to separate coded plastics for recycling, to send leaves in letters to presidents demanding their presence at summits, and to harass parents into buying toilet dams and compact fluorescents.

A New Era

Since 1990, unprecedented numbers of elementary and secondary students have become more environmentally aware than ever before. Earth Day programs dominate the April calendars of schools everywhere, more states than ever mandate environmental education, and the United States Environmental Protection Agency has once again opened an Office of Environmental Education. In my home state of Pennsylvania, there is a state EE coordinator; there is a statewide scope and sequence of EE concepts, kindergarten through graduation; and there is a new, state-mandated curriculum that elevates environmental literacy to 1 of 10 goals of “quality education.”

And something amazing has occurred: In recent years, the number of students enrolled in high school environmental science has eclipsed the number taking physics. Our ship has come in; kids demand environmental education, and the interest of young people in environmental issues is strong and genuine. Suddenly, environmental education is mainstream.

Although students are more environmentally aware, more interested, and more willing to take action, they have never been more ecologically illiterate than they are today. Our programs have given the big picture, but no details. We have given them Spaceship Earth, but no instruction manual. We teach “community,” without filling that community with its members—scarlet tanager, locust borer, peacock fly. We teach “adaptation,” without naming the organisms that possess the adaptations—great horned owl, bald-faced hornet, Eastern striped skunk. We teach “seasons,” without sharing the names of creatures who signal the shift in seasons. Spring, for example, is an elegantly orchestrated series of events: the blooming of skunk cabbage, the singing of cardinals and tufted titmice, the swelling of red maple buds, the return of robins, grackles, cowbirds, the disappearance north of juncos. In school, that rich orchestration is reduced to “April showers bring May flowers” and “birds fly north.”

I guarantee that not one of the almost 1 million kids in Philadelphia-area schools can show me a grackle. Not one. And not one would recognize the song of the titmouse—never mind their giggles over such a racy name. Yet both titmouse and grackle are common in all Philadelphia-area habitats—city, suburb, farm, and field. We cannot name the common inhabitants of our natural communities, and we know nothing about their habits, histories, and life cycles. The loss is unforgivable.

When we teach reading, we intuitively understand that students must recognize—yes, memorize—the letters A, B, and C, and then combine them into words. To learn math, they must recognize and memorize the numbers 1, 2, and 3, and then solve equations using them. Letters and numbers are the building blocks of reading and math, so we teach the building blocks first. And no one argues.

Our teaching has building blocks, too, but environmental educators do not agree on what they are. Some say concepts such as cycles, energy flow, and change are our programmatic building blocks. I think there's a better choice: species. Environmental literacy is impossible without a grounding in ecology, and species are the building blocks of ecology. Species combine into populations, populations into communities, communities into ecosystems, and ecosystems into the biosphere. To achieve environmental literacy, we must memorize and recognize the building blocks of our work: sugar maple, dragonfly, little brown bat, Canada goldenrod.

Earth Education

Veteran environmental educators know that we have been down this road before, and know that there is a network of educators who will not be happy that I am advocating our traveling it again. Our field's movement away from nature study has been wholeheartedly advocated by the Earth Education movement, led by Steve Van Matre, a gifted but enigmatic educator who is easily the single most creative force in our field's history. His "Mission Gone Astray" speech has keynoted many an EE conference, and his cogent analysis of all the wrong turns that EE has taken over the years (see Van Matre, 1990) simply must be read by every professional environmental educator.

Van Matre is absolutely correct in his dismissal of the "gather-'round-me-look-at-this" style of nature-study field trip, the one in which the instructor presents a nonlinear, disjointed discourse on whatever birds and blossoms cross the trail that day. He adamantly asserts that environmental education is not an encyclopedia of eco-
logical esoterica, and he is right. Van Matre is also correct in complaining of the "definition dementia" that is rampant in our field, that creates school environmental education programs that are a scattershot collection of outdoor education activities with a flavor of environmental instruction: a pond field trip, a maple-sugaring experience, a cemetery activity, a litter clean-up, and an Earth Day assembly. Van Matre is dead-on; these jerry-rigged "programs" simply will not create an environmentally literate society. We need, he argues, focused, sequential, comprehensive curricula that span the years from kindergarten to 12th grade.

Van Matre's assertions are mostly correct, but he overreacts, throwing out the baby with the bathwater. That we taught the names of plants and animals was fine; how we taught was not. Didactic, heavy-handed lecturing does not work for any subject matter, not just nature study. But by design and intention, Van Matre's programs dismiss naming as irrelevant and tangential to the teaching of core concepts. During earth education programs, for example, all feathered creatures, whether heron or hummingbird, must be called *bird*. Bat and baboon become *animal*, and trillium and trout lily are equally *flower*. Species are simply not to be named.

I am not advocating a return to poorly taught field-trip experiences. I am not even asking that students memorize Latin names and their meanings. No. I am saying that Van Matre is wrong in assuming that focused instruction in environmental education has no room for names. I think it does. In fact, I think it must. For how can you teach food chains without naming the steps of the chain? How can you teach adaptations without teaching the names of the creatures that possess them? How can you teach interdependence without naming the partners in the relationship: squirrel and oak, swallowtail and spicebush, hummingbird and cardinal flower? And how can you ever teach diversity without naming the things that we are diverse in?

Knowing Our Neighbors

Our cultural inability to either name or know our neighbors has had a tragic effect. Edward O. Wilson, Harvard's brilliant namer of ant species and author of *The Diversity of Life* (1992), uses "cautious parameters" to estimate that our planet's diversity is declining at the rate of 3 species hourly. That is 74 species per day; 27,000 annually. We are living in the midst of the biggest extinction crisis since the day the dinosaurs disappeared, and each disappearing species is a creature with adaptations, a life history, curious behaviors, mating rituals, and more. In recent weeks, newspapers and magazines have published long accounts of the worldwide, mysterious disappearance of frogs and toads, the addition of the California gnatcatcher to the threatened species list, the global decline of shrikes such as the loggerhead, and the vanishing of top predator fish from ocean food chains.

Van Matre's work cannot address this problem, for it is akin to teaching creative writing using only verbs and adjectives—an amusing exercise, but not a complete English curriculum. Earth education is clever, but it is not a complete environmental education curriculum. To teach English, one needs nouns. To teach environmental education, we must circle back, reach into our history, and reclaim nouns. Our nouns happen to be names: goldfinch, grebe, harvestman.

Many environmental educators adhere to a philosophy of instruction akin to the model presented by Stapp and Cox (1974). We view EE as a continuum that starts with awareness, moves through knowledge and skills, and ends with action. Some EE programs move from awareness to action in one overnight residential experience; others move from awareness in kindergarten to action in high school. But let us agree there are knowledge and skills that students must own to achieve environmental literacy. For me, knowing native plants and animals must be a core knowledge; knowing how to identify creatures and discover their life histories seems a critical skill.

The road to environmental literacy begins with nature study. Once students know the names and habits of their natural neighbors, educators can overlay the big-picture concepts of cycles and communities, diversity and change. The concepts will then make so much more sense. And after the big pictures are fully painted, we can add the third layer—environmental problems and their solutions. Students will better understand, and better want to understand, ozone holes and spotted owls if they are intimately acquainted with sapsucker holes and screech owls.

The daily disappearance of those 74 species has made it clear that all environmental issues—global warming, rain forest loss, the solid waste crisis, ozone depletion—are facets of one overriding question: How do 5 billion humans learn to live with the 50 million species with which we share a shrinking planet? Our search to find a meaningful relationship with the fellow passengers on our planet requires us to begin by learning just who they are.

Earlier, I mentioned that I was surprised that I feel as I do. I was trained as a classical naturalist at the same university at which Anna Comstock taught and was one of the last taught in that way. I later rejected that method of instruction and turned to teaching big concepts. It is only in the last year that I have realized that nobody anywhere can name anything they live alongside. And I realized that that loss of ecological wisdom makes me terribly sad.

As I sat to write this essay, I was, coincidentally, wearing a T-shirt that commemorates the massive and moving AIDS quilt that passed through Philadelphia a few years back. The T-shirt's message reads: "Remember their names." The living must remember the dead. It is true of AIDS. It is also true of the fellow passengers on our planet: It is time to remember their names.
Species are vanishing. We should know who they are. If we did, we might miss them and find ourselves motivated to salvage a relationship with them. Imagine a world where everyone knew that cardinals should begin singing in February, that the feared tomato hornworm becomes the stunning, hummingbird-like sphinx moth, that the job of a flower is to produce fruit and seed. In such a world, people will understand ecological systems and will be attuned to the effects of climate change and development on native flora and fauna. We might not now have the “silent springs” that Rachel Carson warned of, but there are assuredly many less Blackburnian warblers and spring peepers singing in these parts—and we should know that and miss them.

To think globally, we must teach locally. Teach names. Teach life cycles. Teach life habits and histories. Restore nature study to the special place of prominence it deserves in the profession of environmental education, for nature study is far from a quaint, irrelevant, Victorian pastime.

Nature study is the foundation—and the key—to our success.

REFERENCES