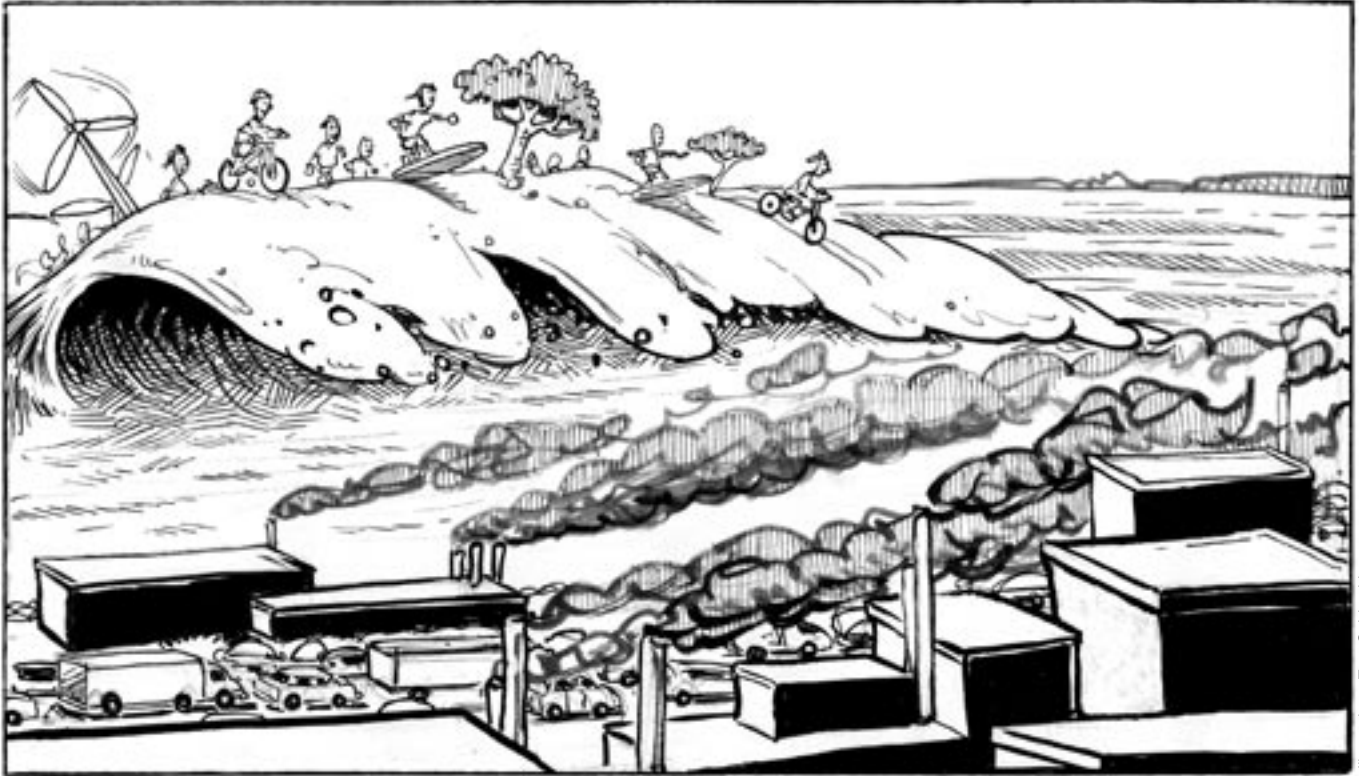


Green Tsunami Rising: Environmental Education's Third Wave



Illustrations: Tom Goldsmith

by **Mike Weilbacher**

WE INHABIT A CURIOUS TIME, a time of great crisis and yet extraordinary opportunity, a time of ecological yin and yang.

The yin you know all too well: the climate is changing, species are vanishing at record rates, glaciers melting, sea levels rising, rainforests burning, coral reefs bleaching and dying, deserts spreading, population rising. Clearly, the world is approaching a day of environmental reckoning.

And yet if you place your finger on the pulse of popular culture, the flip side of the environmental coin is utterly palpable. The word green is suddenly everywhere: green roofs on green buildings, green products on websites, U.S. presidential candidates debating “green collar jobs,” a new phrase that entered the lexicon only this year. Madonna graces *Vanity Fair's* annual “Green Issue”, while crooning with Justin Timberlake “only got four minutes to save the world”. Meanwhile, Al Gore, fresh off his Nobel Prize, has launched a \$300 million “We can do it” ad campaign about climate change.

Science fiction pioneer H.G. Wells wrote in 1920: “Human history becomes more and more a race between education and catastrophe.” Most environmental educators

tend to assume that catastrophe is coming; but if we pay close attention, we will see numerous streams of activity that are quietly and quickly converging into a tsunami of unparalleled environmental activity. Hold on tight, keep your head up: we are about to enter a golden age of environmental education.

Which raises two critical questions: Will we be ready? And will we be able to make changes fast enough to save ourselves and the world that we know and love?

The first two waves

Environmental education is at a crossroads — on the threshold of either a new era or oblivion. But then environmental education has always been at a crossroads, has never really grabbed its place in either the educational or the cultural firmament. Its roots stretch back into the nature study movement of Victorian times (a movement paralleled by the birth of the Sierra Club and Theodore Roosevelt’s startlingly environmental presidency), then into mid-century’s conservation education, with outdoor education weaving in and out of the story. But the beast we now call environmental education really began as a response to a wave of environmental concerns that captured public and media attention in a magical decade extending from the mid-Sixties through the mid-Seventies.

Like many veteran environmental educators, my career began as a response to events surrounding the first Earth Day in 1970. Rachel Carson's *Silent Spring*, Paul Ehrlich's *Population Bomb*, the Santa Barbara oil spill, Cleveland's Cuyahoga River catching fire, phosphates in detergents, lead in smog — all this grabbed my attention and never let go. The phrase "environmental education" entered the lexicon at that time, for the first wave of concern for the environment was also the first wave of environmental education, halcyon days that many of us remember with misty eyes.

The second wave of environmental concern erupted around 1988 when medical waste began washing up on shorelines, hot summers shattered temperature records, severe drought gripped huge sections of North America, Yellowstone burned, and NASA scientist Jim Hansen told a U.S. Senate committee that the Earth was warming from the burning of fossil fuels. In 1988, instead of its usual Person of the Year, *Time* magazine named Earth the Planet of the Year. Al Gore penned *Earth in the Balance*, and the biggest selling environmental book of all time — *50 Simple Things You Can Do to Save the Earth* — was published, along with dozens of spinoffs and knock-offs. Riding that wave, I found myself, a naturalist by training, hosting a Philadelphia public radio environmental newsmagazine, where my guests were senators, Environmental Protection Agency chiefs, book authors like Gore, even an Amazon chieftain.

But all good things must end, and this wave crested only a couple of years later. My radio show was cancelled after a five-year run, replaced by a call-in show on money matters, and the dot-com bubble and Monica Lewinsky were much more interesting than any environmental issue of the moment. With the end of the second wave, there was little hope for an international accord on the Kyoto Protocol on climate change: major carbon emitters such as the United States and Canada were either opposed to signing the agreement or they signed and ratified it but did nothing to implement it.

The third wave

The first wave of public concern for the environment gave rise to environmental education, numerous nonprofit organizations to deliver that education, and a raft of environmental legislation. The second wave created an outpouring of books, magazines like *E* in the United States and *Earth-keeper* in Canada, television specials, the Earth Summit, and a renewal of Earth Day. The third wave, gathering steam at this very moment, will be a tsunami — a popular outpouring for environmental issues that will be much larger than the first two waves, because the issues are larger. As the four horsemen of the coming global apocalypse bear down upon us in the coming decade, the environmental landscape will be radically transformed. Climate change, species extinction, water scarcity and that long overdue but inexorably ticking population bomb will at some point converge — and all hell will break loose.

Just as the 1970 wave needed endangered eagles and an industrial fire on the Cuyahoga River,

just as the 1990 wave needed beached dolphins washing up with used needles, there will at some point be a large, mediagenic event that will trigger the third wave: the calving of a huge iceberg off Antarctica, perhaps, or the poaching of the last mountain gorilla or black rhino or orangutan, or a new Exxon Valdez, or a massive Amazonian wildfire aiming its plume at both global warming and species loss. And there will be a resurgent interest in not only environmentalism, but environmental education.

When that third wave hits, as green teachers, where will we be? Will we bob along and let it pass us by, or will we surf the coming green wave to a whole new place? If you're a classroom teacher, how can you exploit the resurgence in environmental interest to cultivate environmental literacy while teaching better science, civics, math and social studies? If you're an NGO executive, how can your staff and board use the resurging interest in green issues to communicate better information to larger numbers of people, even growing your membership base? If you manage a park or learning center, how can you and your center capitalize on public awareness to lure people to your site? And perhaps a more interesting question: preemptively, how can your environmental education work lay the foundation for the green wave to come even sooner?

If you agree with the premise that a green tsunami is rising, and you'd like to surf the wave, here is the beginning of a list of actions you might consider taking to prepare yourself.

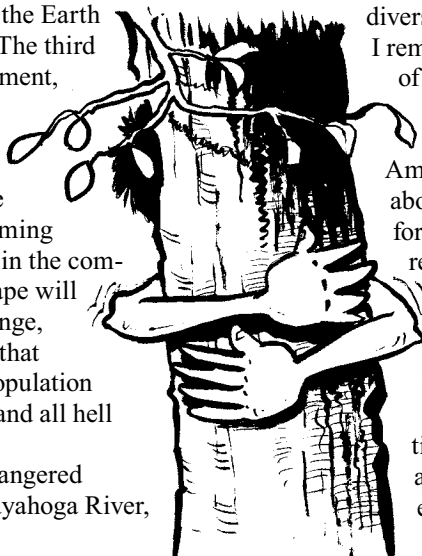
Seven habits of highly effective surfers

1. Embrace issues

Because environmental education deals with large-scale issues on which adults often disagree violently, EE has often been caught in political crossfire. When Ronald Reagan came to the White House in 1981, his very first act as U.S. president was removing Jimmy Carter's solar panels; funding for environmental education vanished immediately thereafter. When Pennsylvania began revising its standards for science education, environmental standards were mocked by right-wing demagogues who accused environmental educators of teaching "pantheism" and "tree-hugging." In Canada, the Fraser Institute launched similar tirades.

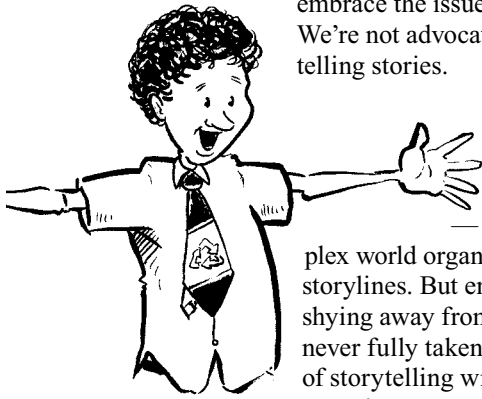
Fearing politics, environmental educators often tiptoe around issues like climate change and loss of biological diversity. During the second wave in the early 1990s, I remember being startled by the sudden popularity of teaching about the destruction of rainforests in the Amazon (sometimes to kids as young as five). Then it hit me: teaching about the Amazon was politically safe. If the teacher taught about the forest down the street being bulldozed for a new housing development, the school would receive complaints from parents, school board members, the developer, the local city council. The Amazon — several thousand miles away — was simply a safer place about which to teach.

The cutting edge of environmental education today is in communicating solid information about big, breaking issues that are in the news every day. Yes, we may be exposing ourselves to



controversy and complaint, but students simply must graduate from our schools as adults capable of making smart decisions based on a high level of environmental literacy. Schools must become hotbeds of environmental activity; and when the third wave hits, they will be required to be.

The trick for environmental educators is to embrace the issues while not taking sides. We're not advocating for the issue: we're telling stories.



2. Tell bigger, better stories

People are storytellers — we like to have the complex world organized into comprehensible storylines. But environmental educators, shying away from political overtones, have never fully taken advantage of the power of storytelling with big issues. Take global warming as an example. Without expressing

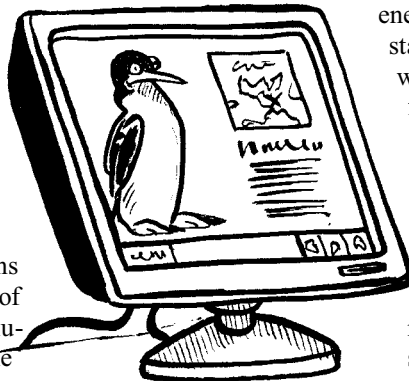
an opinion about global warming, you can become a storyteller, walking your students through the issue as if you were interpreting a forest, offering some of the measurable data that's been gathered, presenting the likely effects, noting solutions, describing which stakeholders have lined up for and against the issue — and for what reasons. You're simply telling the story of global warming, without having to advocate for a particular point of view.

Take any issue, and make it a story. Interpret it. Society needs someone to hold its hand and walk it through large, complex issues, and this is naturally the job of educators. We not only need better stories, we need bigger stories.

3. Make community connections

Environmental issues are happening out there in the big, wild world. To teach these issues effectively, we must take the classroom out there — and bring the world into our classrooms. To stay with our example of global warming, say you have taught the students the basics of the issue and assigned them to read one of the many excellent books on the subject that have come out recently, maybe Elizabeth Kolbert's *Field Notes from a Catastrophe*. You then invite into the school a panel of adults — a university professor, a TV meteorologist, a utility executive, an activist — to be interviewed by your students, who have prepared a series of questions based on their reading and studies. Maybe you even hold the event at school in the evening, the students bring their parents, and it is covered by local newspapers (for which students have written press releases) and taped by the school's audio-visual group for broadcast on public access television.

Soon after the event, the students themselves might debate the school's proper response to global warming — aggressive recycling, solar panels, compact fluorescents — their discussions now informed by a deep understanding of the issues and the variety of possible solutions. Imagine them actually creating the



action plan. You haven't told them what to think, but exposed them to knowledge, and they have deduced what they need from the issue: they have been educated in the highest sense of the word.

The environment is the big world outside and it should be the single most exciting part of the school curriculum. To teach EE, you've got to strengthen community connections.

4. Exploit technology

According to the Kaiser Family Foundation, the average American child spends almost 40 hours each week consuming technology: watching TV, playing computer games, listening to CD players and iPods, and IMing and Facebooking friends. Technology is a powerful force, its own tidal wave that has already altered the cultural landscape — and it is here to stay.

Yet environmental educators share a neo-Luddite bent, interested in getting kids away from computers and into nature, away from the virtual world and into the real one, off the web and into the web of life. These are worthy aims. But the public is technologically sophisticated, expects to find technology everywhere, and not only knows how to use technology to understand the world, but *wants* to use technology for that purpose. We need to practice a very delicate balancing act between failure to use technology, which renders us quaint and obsolete, and overuse of technology, which renders us shallow. The middle ground — wielding technology as a tool to educate, illuminate and perhaps entice — is hard to find, but increasingly necessary.

In environmental education, as elsewhere, technology connects the global village and makes it a small world after all. Project GREEN and Project GLOBE, for example, have students measuring environmental parameters, entering the data on spreadsheets and sharing that data with students around the world. Classes participating in Cornell University's FeederWatch program put bird feeders outside the classroom windows, monitor the birds that visit, send in their data to the project's website, and watch the northern migration of, say, Baltimore orioles on the site's map. Through such applications, we're exploiting technology for science, connecting our students to the real world, and turning them into citizen-scientists.

Technology is here to stay, and it is not the enemy. As environmental educators, we need to stand with our feet firmly planted in the real world while embracing cutting-edge technology for our own purposes.

5. Become culturally fluent

People who do environmental work tend to have a bias against popular culture. After all, popular culture is a relentless juggernaut dedicated specifically and solely to the marketing of products and promotion of consumerism. Since the juggernaut is anti-environ-



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ment, we reject it, or try to. But environmental education exists within the culture, and culture is as much a part of us as the air we breathe and water we drink. We cannot surgically remove ourselves from it.

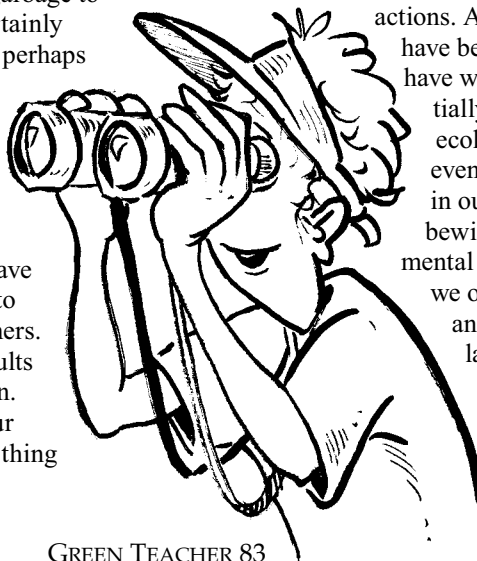
During the first wave of environmentalism, several environmentalists became embedded in mainstream culture. Paul Ehrlich made innumerable appearances on late night talk shows — he was fluent, passionate, urbane, interesting and had a distinct point of view. Rachel Carson, too, embedded herself deeply in American culture, even though her career was startlingly short, as she died of cancer soon after *Silent Spring* was published.

When the tsunami hits, establish yourself as a spokesperson for the environment. Speak for the trees, the Lorax implored. When the wave hits, local media will be seeking angles and stories, and you want them to find you. You must have a compelling message that you can state in direct, digestible elements, and you have to be able to use the shared language of culture to talk to the mainstream. If you are unable or unwilling to embrace — and even exploit — the culture in which you live, the wave will pass you by. Read popular magazines. Watch TV. See movies. Know who's hot, and for what. Listen to popular radio. Talk to teens. As you become culturally fluent, you will gain access to new language and new metaphors that allow you to establish an intimacy with a wider audience.

6. Know one big thing

One of Aesop's fables tells about a very sly fox that runs into a very dull hedgehog and winds up with a face full of quills. The fox knows many things, sums the fable, but the hedgehog knows one big thing. I think often of that story and of the importance of knowing one big thing.

As a green teacher, it is essential to be knowledgeable, but it is difficult to master the complexities of all environmental issues, from climate change to water to garbage to energy to deforestation to diversity. And you certainly don't have the time to teach all those issues. But perhaps you can pick one of them, an issue that you think will capture not only the attention of your students, but your own attention and imagination as well, and specialize in teaching it. My daughters both enjoyed their fifth grade teacher, who is famous within the school for her addiction to birdwatching. Students who don't have this teacher don't get it, but those lucky enough to be assigned to her class come out avid birdwatchers. They catch her passion. Children want to see adults committed to something; they respond to passion. If you are passionate about the environment, your students will catch on. And if you know one big thing and know it well, students will flock to you.



7. Get out!

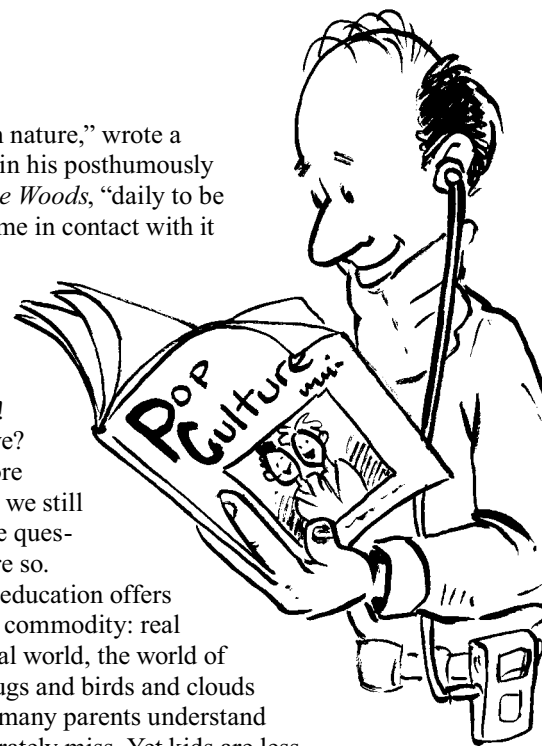
"Think of our life in nature," wrote a passionate Thoreau in his posthumously published *The Maine Woods*, "daily to be shown matter, to come in contact with it — rocks, trees, wind on our cheeks! The solid earth! The actual world! The common sense! Contact! Contact! Who are we? Where are we?" More than a century later, we still need to answer these questions, now even more so.

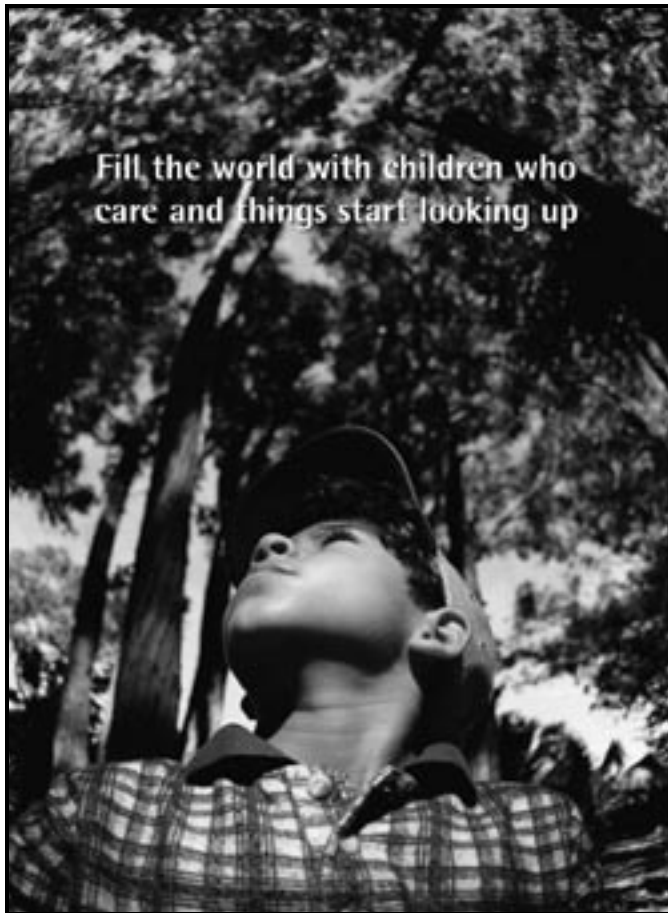
Environmental education offers an increasingly rare commodity: real connection to the real world, the world of dirt and trees and bugs and birds and clouds and flowers, things many parents understand their children desperately miss. Yet kids are less and less exposed to that world every day. Given that children spend hours consuming technology, they increasingly spend less time outdoors. In his intriguing book *Last Child in the Woods* (a must-read for green teachers), Richard Louv coined the phrase "nature deficit disorder" to explain what he sees as the impact of the extinction of exposure to nature on children's psychological, emotional and physical health. "I like being inside," he quotes one youngster as saying, "because that's where all the plugs are!" Unplug your students (after, of course, you've exploited technology); get them to where the bugs are.

These seven action items are offered as only the beginning of a list of things that we can do as green teachers to surf the coming wave of environmentalism. You probably have more ideas, maybe even some rebuttals. That's good: this is a big messy complicated subject. Dive into the conversation, and continue finessing the list.

The race is on

In 1970, the stated goal of the newly emergent field of environmental education was to create an enlightened citizenry who understood the environmental implications of their actions. Almost 40 years later, while there have been notable successes, while we have won a few battles, we have essentially lost the war: our citizenry is as ecologically illiterate as ever, maybe even more so, given the decline in our relationship to land and the bewildering complexity of environmental issues facing us. In EE circles, we often talk about access to schools and students, forgetting that the larger, perhaps more important, more difficult issue is access to culture: how can we get environmental concerns into mainstream popular culture?





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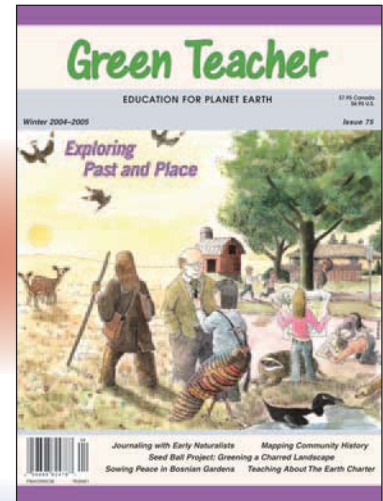
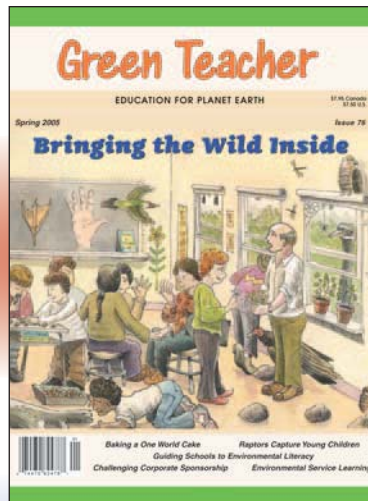
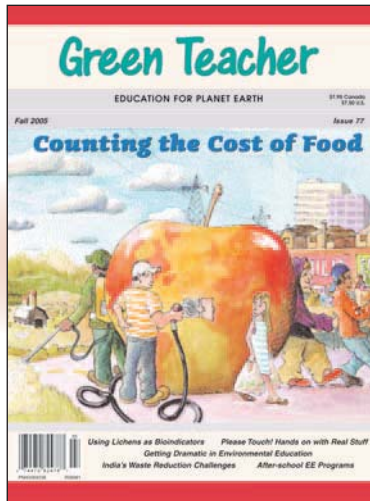
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What we need is a sustained period of interest in the environment — a plateau, a permanent paradigm shift. And it's coming. When the third wave hits, this one will last, because the issues are not going to go away, the science is only going to tell us harder realities, political leaders will be forced into action, and concern about the environment will embed itself in popular culture. As environmental educators, will we be ready?

H.G. Wells' statement that "Human history becomes more and more a race between education and catastrophe" is widely quoted, but we rarely hear the next sentence: "Yet, clumsily or smoothly, the world, it seems, progresses and will progress." The world progresses, perhaps clumsily, and environmental education should be an integral part of that progress. The race is on — the race to save a planet in crisis as well as the race for environmental education to become a player in our culture. The great green tsunami is coming, and we have a choice: to sink or swim, to rise to the challenge or let the wave pass us by.

Mike Weilbacher has been teaching and writing about environmental concerns since the 1970s, presenting keynote addresses and participatory theater performances in schools, museums, nature centers and conferences across North America. He writes a weekly column for his hometown newspaper and directs the Lower Merion Conservancy, a neighborhood land trust based in Gladwyne, Pennsylvania. His website is <www.mikeweilbacher.com> and his blog, Natural Selections, can be found at <www.mikeweilbacher.blogspot.com>.

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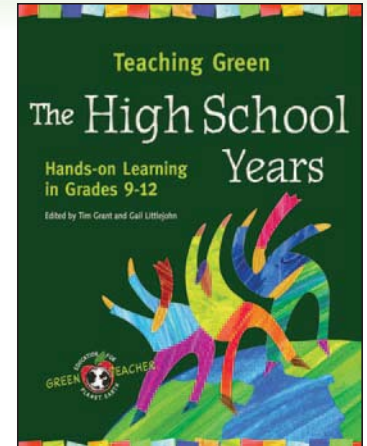
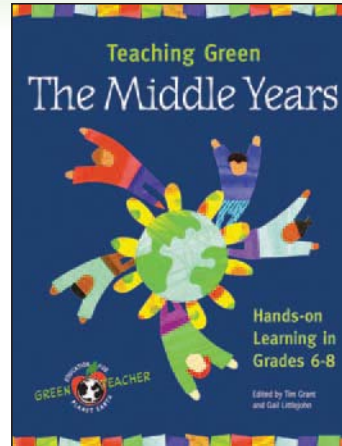
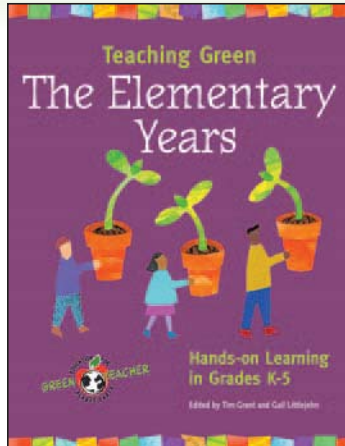
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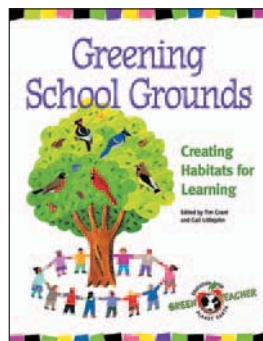
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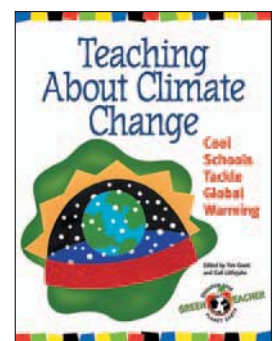
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