I first heard it while breaking a path down to the Pine River from a low hill that holds the bodies of some two-dozen Chippewa, mostly children. Dry snow, brushed into waves by a northwest wind, washed around my knees as I high-stepped toward the site of Shing-wa-kaus-king, the last Pine River village of the people who call themselves Anishnabeg. What I heard then, while slogging toward the curtain of bare trees that traced the river’s path on a powder-blue sky, was the land beginning to speak. It was telling a story.

And it had plenty of tales to tell. But on this crisp February afternoon, I was not listening to the story of ice-mountains written on the low roll of moraines, or to the epic drama of those cone-laden pioneers who followed the soil north so many years ago. Still under the spell of the tiny graveyard that grew smaller with every step, I heard only stories of the Anishnabeg. I could almost make out the faint shrieks of their children at play, scampering and sliding in clouds of powder among the willows. Among the hardwoods that shadow the Pine through the snow-shouldered farms of central Michigan, I thought I glimpsed the backs of bear-robed figures dropping hot stones into birch-bark buckets, thickening maple sap to syrup. I even heard echoes
of the old, old story about how maple syrup once dripped straight from the trunk--till Nanabozho watered it down so the people would not waste these short days beneath their taps, mouths agape.

At last I was beginning to see past the straight-edged fields of corn and beans that made up this quilt called Gratiot County, and to discern something of the land’s original features. Looking back, I suppose that this enhancement of perception was all along the real goal of a course I was teaching at nearby Alma College. But when I designed my Environmental Narratives class, I was addressing an absence; I hadn’t fully envisioned the presence that would replace it.

It was several years ago, while gathering college syllabi for the Association for the Study of Literature and Environment, that I first noticed how few courses ask students to become more familiar with their own bioregion, and then to share this experience with the rest of the community. Among the dozens of excellent syllabi that Peter Blakemore and I collected, the majority that brought nature into the English classroom wished simply to introduce students to writers who see the world through ecologically informed eyes. Of course, such classes perform a valuable service, but I was most excited by those occasional courses that tried to teach students to understand their membership in \textit{specific} ecosystems.

At the University of Nevada’s Reno campus, for example, Professor Cheryll Glotfelty designed her Composition II class so that students would develop their writing skills while collaborating on a book about a species native to the area. As her syllabus noted, along the way students would learn a number of skills essential to their success in college, including time management, research, interpretation, revision, documentation, and effective collaboration. Two day’s drive north, at the University of Montana, Professor Hank Harrington began his Natural History class with a weekend spent on an island in nearby Flathead Lake. He asked each student
to choose a particular species growing on Wild Horse Island, and to observe its characteristics and contexts before returning to campus to compare observations with those of earlier natural historians. Students were then to revise their findings into scripts that would be broadcast on a local radio program called *Field Notes*. Examples like these inspired me to wonder about other ways in which college English classes might serve local communities by helping them better understand their home ecosystems.

I began to imagine a service-learning course in which students would gather and publish the stories of the local watershed, making them accessible to area residents. Because people are less likely to degrade an environment they care for, I hoped that such a publication might help local residents recover the sort of intimacy that Robert Finch had in mind when he explained, “ultimately we can only care for and connect with that which we have come to love. I think that only by storying the earth do we come to love it, does it become the place where imagination chooses to reside.”

Of course, stories have long encouraged an intimacy in people’s relationships with their environments, especially in subsistence cultures where an efficient overlap of oral traditions and specific geographies could mean the difference between want and plenty. But knowing the stories of the places we live takes on a different type of urgency in a post-industrial culture, where the means of our shelter and sustenance seldom appear connected to any specific community. When food is presumed to come from the grocery store rather than from a particular plot of agricultural land, what occurs on those acres--or in the streams that drain them--is of little concern to the consumer.

With both our economy and our popular culture encouraging this delusion of detachment from the ecological communities that sustain us, it was inevitable that the consequences of our
actions would eventually become dire enough to inspire the series of reactions that we refer to as environmentalism. Within this context, recovering the stories of our local bioregions is a most radical act: once we learn again how to love the places we call home, business as usual is no longer acceptable. “Love is where attentiveness to nature starts,” insists Professor John Elder, “and responsibility to one’s home landscape is where it leads.” Indeed, learning the stories of our bioregions, and recognizing our inescapable participation in locally specific ecological systems, has the potential to transform our patterns of behavior, according to Mitch Thomashow, Director of the Doctoral Program of Environmental Studies at Antioch New England Graduate School. Thomashow adopts Richard Borden’s concept of “ecological identity” as the title and theoretical foundation of his important 1995 study. According to Borden, learning to see ourselves as members of ecological communities “leads to changes of identity and psychological perspective, and can provide the foundations for an ‘ecological identity’... which restructures values, reorganizes perceptions, and alters the individual’s self-directed, social, and environmentally directed actions.”

Clearly, deepening our knowledge of local ecosystems--and understanding our membership in them--can bring about profound changes in the way we treat them. Whether or not the human residents of the Pine River watershed were ready to understand themselves as interdependent knots in a web of energy exchange, they at least deserved a glimpse of how their local bioregion functioned before it was forced into the service of industry and agriculture. And so, in the spring of 2000, fifteen students and I pieced together a sixty-page booklet called Recovering Pine River. By the grace of gifts and grants, hundreds of these bioregional biographies have since found their way from diners and general stores, schools and barbershops, into homes throughout the watershed, sharing forgotten stories of the Pine River. The success of
this project leads me to offer an account of that process in the hope that it might inspire similar projects in other communities.

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It was Aldo Leopold, I suppose, who planted the seeds of Recovering Pine River, though it took them years to germinate. Each time I’ve read A Sand County Almanac, I’ve nodded along as Leopold argues the need to change the role of our species from conquerors to plain members of the land community; and as a teacher I’ve echoed his insistence that such a revision mandates “respect for [our] fellow members, and also respect for the community as such.” 7 Attempts to apply Leopold’s revolutionary theory to our daily lives lead quite directly to what the poet Gary Snyder terms watershed consciousness, which encourages “the practice of profound citizenship in both the natural and social worlds.” 8 Such dual citizenship lies at the heart of the bioregionalism--a perspective that encourages us to see ourselves as belonging more fundamentally to specific ecosystems than to artificial geopolitical units. But it seems unlikely that we will ever learn to function as productive citizens of local bioregions if we don’t even know who are neighbors are. The first step, then, toward responsible membership in a land community is learning to recognize it, and this means peeling back the layers of human constructions that conceal our sustaining ecosystems.

Of course, it is easier to recognize the presence of an ecological community in places like the Bob Marshall Wilderness or even the Okefenokee Swamp, where the human role still seems peripheral, than to imagine a functioning ecosystem at work behind the manmade mask of Alma, Michigan. Many local would define this Pine River community in terms of the grid of asphalt that links church to strip mall, refinery to home. If you asked people around Alma about the
ecological community of the Pine River, those who didn’t shrug and shake their heads would likely point you north of town, toward the third-growth pines of Lumberjack Park.

I understood, perhaps better than most, this inclination to look beyond the Alma town line in search of an ecological community, for I have spent my life in wilder places, whether growing up at the foot of Oregon’s Cascade Range or working as a ranger in the resurgent forests of northern New England. When I arrived in central Michigan what I saw, at first, was flat, denuded land, where strips of homogeneous American commerce occasionally broke the monotony of industrial agriculture. But when Leopold spoke of the need to see ourselves as members of a land community, he recognized that we belong to such a community, inescapably, wherever we are.

Of course, some folks in and around Alma might rather not see themselves as part of the Pine River’s particular ecological web, for it is a savagely degraded watershed. It’s not just the industrial pesticides that soak the local farms, then drain through twigs and branches into the main trunk of the river--though low sweeps of crop-dusters frequently rattled my bedroom window and kept me from trusting my shallow well. No, worse pollution comes from the town’s remaining oil refinery, and even worse from the site of a chemical plant that flushed DDT and other toxins into the Pine for half a century. Less than five miles downstream, near the ghost of the old Anishnabe village, the Environmental Protection Agency has established a Superfund site in an attempt to lower concentrations of DDT to a level that is closer to acceptable. The legal limit, however, remains far beyond the reach of current technology.

Because river systems may be considered the hearts of their bioregions, the Pine River watershed is very sick indeed. But if Finch is right--that we only care for what we love--then telling the story of the Pine River is a necessary step toward its recovery.

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The students have grown quiet here, clustered tightly as they look across the dirty snow to where the river pools in a slow, artificial curve. Across the water and behind the retaining wall, a low white mound is all that remains of Velsicol Chemical, which closed its doors in 1978. A crimson sign on the beach blazes a warning against swimming, and it is easy to imagine that the ghostly bather on the sign--arms flung high in panic, mouth and eyes agape--is not drowning, but dissolving in a witch’s brew of chemicals. Students recall their interviews with local residents who described “pike, four feet long, their eyes ate out with pus.” They have heard how water drawn from the Pine River ate a hole through the bottom of a galvanized bucket at the Department of Natural Resources.

These hardly seem the same students who, just an hour before and a dozen miles upriver, thrilled to find the etchings of beaver teeth in sharpened trunks of willows. They had scattered through bare forest there, sketching in their journals and studying the slow release of winter on the river. “The solid, smooth ice gives way to open water,” wrote one, “and the flow of the river is constantly, patiently moving the melting point toward the shadier shore.” Another compared the river’s surface rippling in the breeze to “cellophane that didn’t get stretched perfectly over a bowl.” They pointed, they laughed, they scribbled their impressions along faint blue lines. They asked the names of trees.

Here at the Superfund site, they are silent. It is not only the DDT that scares them, although they have learned that the sediment has contained up to 6,000 times the “acceptable” level of contamination. No, right now most are thinking about PBBs, a carcinogenic flame retardant that was accidentally mixed into cattle feed supplement shortly before the plant closed. The contaminated feed was trucked to farms throughout the state, passing toxins through beef and dairy products into nearly every person on Michigan’s lower peninsula--including the
parents of many of these students. Professor Murray Borrello, our guide for the afternoon, jokes that “any of you raised in Michigan don’t ever have to worry about spontaneous combustion.”

The lessons we learn hit some students harder than others. “When I decided to go to Alma College, I didn’t even know there was a river,” recalls Anne Henningfeld, who soon found herself frequenting a peaceful stretch of the Pine. “I thought the river was beautiful and, having been raised on water, it brought me home.” Now, hearing of the river’s contamination, she feels betrayed, violated: “My body convulsed,” she later explains. “I could feel the little bits of PBB floating in my bloodstream, sticking to the insides of my intestines, mingling with the cranial fluid at the base of my skull. The river I had never heard of was the site of an accident that now lives in my body.”

The differences between the forested river upstream and this toxic pool are dramatic and sobering. The few trees that shade the small park and playground on the riverbank seem a half-hearted attempt to breathe life back into this place. As we glance around the neighborhood, it is difficult not to recall stories of the clouds of caustic dust that frequently hid one neighbor’s home from another’s. The cofferdam that holds back the most toxic stretch of water, the low hill covering the capped-over site, the fences and the warning signs--these images tell the story of a disaster. But what we see here is only a small part of the Pine River’s story. To look at the river and see only tragedy is as wrong as judging someone’s entire life by how they looked during a recent illness.

There’s more to this story than pollution.

* * *

Before the students began to record the stories of the watershed, they studied how other authors convey natural history to readers with little scientific background. If our work was to be
effective, we knew we must make it interesting and accessible to the widest possible audience.

We read Henry Thoreau and David Rains Wallace, John Muir and Annie Dillard, Loren Eiseley and Scott Russell Sanders, comparing styles and discovering what worked for us—and, just as important, what didn’t. Following Thomas Lyon’s lead, we weighed the balance of natural history, philosophy, and personal reflection in each reading. 13 It soon became clear that students preferred pieces that emphasized personal reflection and, to a lesser extent, natural history. We paid special attention to three books devoted to specific bioregions: Thomas Sherman’s *A Place on the Glacial Till*, an eloquent, loving natural history of Oberlin, Ohio, (and the single best example of a bioregional biography I have found); John Hanson Mitchell’s quirky history of his neighborhood near Westford, Massachusetts, entitled *Ceremonial Time: Fifteen Thousand Years on One Square Mile*; and Terry Tempest Williams’ *Refuge*, a deeply personal ode to the Bear River Migratory Bird Refuge on the shore of Utah’s Great Salt Lake. 14 We compared examples of authorial presence and narrative structure, and studied how authors use figurative language to bring to life a landscape’s geology and botany.

In addition to literary analysis, students were sharpening their skills at observing the bioregion and recording their impressions. I had adapted Lawrence Buell’s “Environmental Imagination Project,” which asks students to return to the same outdoor observation post each week and practice different modes of perception. They classified the spot’s inhabitants, used senses other than sight to experience their place, and tried on a variety of nonhuman perspectives. 15 Students were also busy interviewing local residents, adding layers of human memory to the stories we were gathering. Although I was not aware of it at the time, our work embodied the four themes that John Elder claims are fundamental to environmental education:
attentiveness to students’ home landscapes, the convergence of natural sciences and the arts, time spent out of doors, and human connections. 16

Once students determined which strategies bring natural history to life, they began their own work, starting with the region’s geology. After learning the local history of sedimentation and glaciation, each student produced a creative rendition of the watershed’s formation. We wrestled with problems like evoking geologic time, or the massive size of glaciers. It would not be enough, we knew, simply to describe a glacier 10,000 feet thick, for numbers that large tend to remain abstract. We wanted people to see the glacier, and so we chose a trope that would be familiar to residents of central Michigan:

Sometimes we have to dig our way through drifts that gather to four or five feet, and the compacted snow at the bottom is always the heaviest. Imagine, though, that the snow keeps falling until it has covered the land to the height of a two-story house--about twenty-five feet. The weight would be crushing. Still, it keeps falling and freezing, falling and freezing. Eventually it accumulates to the height of four such houses--a hundred feet of snow. It is difficult to imagine so much weight. 17

Once people can imagine what a hundred feet of snow might look like, they can more easily extrapolate from that. “Imagine 400 two-story houses stacked atop one another,” we wrote, “and you will begin to understand the immensity of the glaciers that shaped the state of Michigan.” 18

The more we learned and scribbled, the more naturally our new knowledge began to evolve into awareness. Chasing the back roads north on weekly trips to Mt. Pleasant’s food co-op, I found myself becoming excited by changes in elevation. No longer could I drive up an incline--not even those so subtle that you feel rather than see them--without imagining a
landscape ruled by glaciers. How, I wondered, could I ever have mistaken this landscape for flat?

The same enhancement of perspective occurred as we learned about the slow return of plant life to the scoured landscape. Lichens came to seem utterly heroic, as did the grasses and stunted trees that followed. We learned how boggy the area had been before the land was drained for farming, and soon we were imagining mastodons browsing in tamarack swamps down behind the football field. Dick Roeper, a biologist at the college, pointed us in the direction of Conservation Park, and there we moved silently between the chalky pillars of 300-year-old beech trees, then passed along directions to our readers.

Learning about the original human inhabitants of the watershed was especially revealing, since it showed that it is possible for our species to find a working balance with the rest of the community. While studying Anishnabe oral traditions and hearing archeologist Scott Beld describe local sites, we began to understand native economic cycles and the culture that reinforced them. Not discounting their use of fire, we concluded that humans had achieved a fairly stable relationship with other members of the bioregion for more than 8,000 years. Within this context it became clear that the effects of European economic practices over the last 300 years are a brief but ultimately tragic deviation from the norm of local human history.

Our lessons about the Anishnabeg were made vivid by a visit to the site of Shing-wa-kaus-king, and the cemetery later established there by Lutheran missionaries. As students solemnly threaded the cluster of weathered headstones, most of which simply read “Indian Child,” one stood out: Sara Mirk-i-we, described as “Mother of the Chippewa,” died in 1859 at the age of 110. We imagined the changes she must have seen over that century. The Anishnabeg were at war with one or another European population, off and on, for the first sixty-four years of
her life. Moreover, she was born into a time of loss. When she first opened her eyes to the green world called Michi-gami, all of it still belonged to the native people--in practice, if not on paper. By the time she closed them for the last time, the Anishnabeg held only one piece of land in all of Michigan, twenty miles north on the Chippewa River. Given the changes she must have witnessed--warfare, disease, alcoholism, poverty, and the inestimable loss of land and culture--it was easy to imagine that Sara Mirk-i-we greeted death with at least some small relief.

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As we turned our attention to the last century and a half, it was with an lingering sense of melancholy. The stories of European settlers offered little romance after what we had learned of Anishnabe culture--and because we knew what would follow. We discovered that the Saginaw River drainage basin, which includes the Pine, was the most productive lumbering region of the state until it was cleared in the late nineteenth century. At one time this might have been a source of local pride. To my students, however, understanding the effects of industrial logging within a larger ecological history encouraged a more sober appraisal: “With the trees gone, the banks of the river sank and became mush,” wrote one student, “savagely battered by thousands of logs hammering downstream.” “Floating logs downriver may have made business sense,” recognized another, “but it was an ecological disaster.” 19

If there was anything that lent a sense of hope to those final weeks, it was the interviews that students conducted with local residents, especially with the elders. Of course, many of their recollections vividly confirmed the sustained human abuse of the watershed. Some remember toilets draining directly into the river, while others recall local petroleum refineries discharging so much effluent that the high-water level was marked each spring by a line of oil on the trees.
Despite what their stories revealed about human abuses of the Pine, however, these voices added a necessary perspective. These are real people who have lived their lives as best they know how within a particular cultural and economic context. No one ever intended any harm. Students began to see that our society has conceived of rivers mainly as systems to serve the human population, whether as power for the mills, sources of drinking water and fish, or even sewage disposal. Understanding a watershed as an ecological community is a concept that has not yet occurred to most people, and talking with elders helped students balance the ecological perspective they learned in school with the economic and social realities beyond the classroom walls.

Once students had transcribed their interviews and revised their weekly creative renditions, they turned in anonymous versions of each. We then broke into editorial collectives, which were responsible for identifying passages from student writing that seemed especially vivid or informative. They also reviewed student photographs, determining where each belonged in the narrative. The use of editorial collectives kept the process fundamentally dialogic: that is, students worked together on all aspects of the project instead of dividing tasks between them. This approach, combined with the knowledge that their decisions contributed to a potentially important public document, helped students avoid some of the more common problems of collaborative writing, such as uneven quality and inequitable distribution of work.

Then, suddenly, the term was over.

As the campus emptied out, I found myself left with pages and pages of highlighted passages. It was only then that I realized the amount of work required to stitch these pieces together. Moreover, because I had accepted a new job in Vermont, less than a month remained in which to produce a camera-ready document. The students deserved to play a much larger role in
the final stages of preparing the manuscript, and I am presently encouraging this at Green
Mountain College by stretching a similar class over two semesters. But with the students already
gone for the summer, I found it necessary to impose my own narrative structure on the
manuscript to a greater degree than I would have preferred. There were many passages from
student writing that fit in nicely as they were, and tying those into the rest of the text was not
difficult. However, substantial gaps remained at many points in the narrative, and the original
passages that I composed to fill them made up more than half of the final text. Fortunately, Mary
Rosalez, a local student and gifted writer, remained available to help out during the revision
stages and distribute the finished product.

Once I had what seemed to be a complete narrative, Mary and I began editing with an ear
to stylistic coherence--no easy task when you’re dealing with sixteen authors. I soon discovered
that the personal reflection students had found most engaging in their readings often resisted a
collaborative approach. It might have been possible to preserve more of their individual
impressions and experiences in a collage structure; I felt, however, that narrative coherence
would make the text most accessible to a general audience. In the end, some student writing was
eroded by an overriding narrative voice, but in a number of cases I kept their passages intact and
introduced them within the text, quoting the authors.

The first printing has gone fast, and copies have found their way into the local schools.
Before reading Recovering Pine River, many of the students in Mary Ann Leonard’s sixth-grade
class knew only that the river was polluted, and that they should stay away from it. Granted,
they seemed most impressed to discover that giant beavers once swam the river, or that bromide
clouds from the chemical factory would eat the paint off cars and houses, but a number of them
were amazed to learn that the Pine had ever been a healthy river. They were impressed to learn
that people in their community are working to try to clean up the river. Several students even expressed their intention of helping.

*Recovering Pine River* ends by focusing on specific actions that people can take to help improve the health of the watershed, but the final page makes clear that, first and foremost, helping the river recover demands imagination. “Let us imagine,” wrote one student, “what it would be like one day to bring home that fat trout we catch in the Pine and actually eat it without worrying about the poisons. Let us imagine a river that people look at not with pity, but with pride.” 21 When we can imagine such a river, we will begin to desire such a river, and our actions will follow from that. If the stories in *Recovering Pine River* have led people to imagine—even for only a moment—what it would be like to live in a healthy, vibrant watershed, then it has already been a success.
Notes

   <http://www.asle.umn.edu/pubs/collect/collect.html>

2. Finch’s remarks are taken from a dialogue with Terry Tempest Williams, included in *Writing Natural History: Dialogues with Authors*, edited by Edward Lueders (Salt Lake City: University of Utah Press, 1989), 41.


15. Christensen and Blakemore.


17. Watershed, p. 4

18. Watershed, p. 4.

19. Watershed, p. 34.


Bibliography


