# TEACHING SYSTEMS THINKING AND PRACTICE THROUGH ENVIRONMENTAL ART

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In a recent article bemoaning the declining state of education, psychology professor Judith Schlesinger laments, "I've had a front seat for the slide in student skills and motivation and—worst of all—curiosity. For too many, grades are more important than learning" (Schlesinger (2002). Confronted with worldwide social and environmental crises that appear insurmountable, many students have succumbed to instant gratification, whether that is bargaining for grades or the American dream. Many do not recognize how issues and disciplines are related, nor how an understanding of history, art, or ecology might be relevant to their lives. In this context, teaching environmental art provides a venue for integrating the disciplines and promoting systems thinking. It can translate insights from the humanities and the sciences into functional and elegant responses to our environment. This paper discusses my pedagogical approach to teaching environmental art at the college level and its potential for fostering systems thinking and practice.

### VISUALIZING SYSTEMS THINKING

Defining "systems thinking" in ecology and education, physicist Fritjof Capra states, "To understand the lessons of ecosystems and apply them to

our human communities, we need to learn the principles of ecology, the 'language of nature' . . . The principles of ecology are, if you wish, the patterns of life" (Capra 1994, 1). Capra contends that the patterns of life are networks that are regulated by feedback loops. Feedback allows a system to engage certain functions, to learn from mistakes, and thus to sustain itself. If we can use this model to understand and visualize the patterns that have undermined our human and non-human networks, perhaps we can repair and build systems to be more resilient and sustainable. As examples of systems thinking, we might describe visual art as the study and creation of relationships, patterns, and possibilities, including the formal relationships of line, form, and color; exchanges between people and within societies; and the interdependencies of human and non-human nature. Contemporary environmental artists are investigating new forms and contexts for visualizing, mapping, and modeling "the language of nature." Artist Ruth Wallen defines the growing field of eco-art:

> Today's environmental artists focus on the interrelationships between physical and biological pathways and the cultural, political or historical aspects of ecosystems and work to extend environmental principles and practices directly into the community. Ecological art can challenge perceptions, elucidate the complex structure of an ecosystem, examine a particular issue, i.e., a type of ecological relationship, or work directly to physically restore the biophysical environment. (Wallen 2000)[1]

By its very nature, eco-art is multidisciplinary and pedagogical. Eco-artists draw from diverse disciplines, including art, ecology, landscape architecture, urban planning, and history, to restore damaged ecosystems, interpret environmental and cultural histories, and reveal systems problems and solutions (such as the water systems within a city or bioregion). The intent of such projects is to foster sensitivity to our place within human and non-human nature, and to encourage more informed pubic discourse and action. Given these concerns, it is not surprising that teaching is integral to the practices of many eco-artists. Eco-art offers a vehicle to cultivate systems thinking, interdisciplinary problem solving, collaboration, and social and environmental responsibility. Thus, eco-art pedagogy is useful not only for art students, but for all students who will enter a world that demands creative and far-reaching responses to the damage we have wrought upon human and non-human systems. The toxic landscapes within and around us know no disciplinary boundaries. Promoting their

health requires collaboration across diverse fields to rectify destructive practices and design alternative materials and processes. Given these challenges, environmental educators and artists have a potent opportunity to encourage students "to think clearly, to imagine what could be and is not, and to act faithfully" (Orr 1996, 9).

I have had the opportunity to teach eco-art theory and practice in diverse institutions, from small private colleges to state universities, within Fine Arts, Digital Arts, and Communications Media programs, and through Women's and Interdisciplinary Studies. I have found students to be savvy consumers who locate their source of power in their earning and buying potential. Many dismiss efforts toward social and environmental change as naive, and they are suspicious of calls for collective action. As social ecologist Chaia Heller has observed, the social desire for connection and community has been diverted into the marketplace (Heller 1999). Despite their cynicism, however, students are hungry for methods that yield concrete and visible results. When introduced to eco-art, they quickly recognize the possibilities to apply their imagination and skills to real-world problems.

## TEACHING ECO-ART THEORY AND PRACTICE

Education has become increasingly specialized and fragmented. As Vartan Gregorian, President and Professor of History at Brown University notes:

> One of the greatest challenges facing our society and contemporary civilization is how to cope with and how to transform information into knowledge . . . The university, which was to embody the unity of knowledge, has become an intellectual multiversity. . . . Today's university consists of a tangle of specialties and subspecialties, disciplines and subdisciplines, within which specialization continues apace. The unity of knowledge has collapsed. (Gregorian 1993, 605)

As an antidote, Gregorian calls for "integrating and resynthesizing the compartmentalized knowledge of disparate fields: the ability to make connections among seemingly disparate disciplines, discoveries, events, and trends and to integrate them in ways that benefit the commonwealth of learning" (609).

Teaching eco-art provides a highly effective framework to integrate and resynthesize knowledge, through discussion of critical texts drawn from diverse fields, and production of collaborative, multidisciplinary projects—

balancing theory and practice. The following are integration-building skills that can be imparted through an eco-art course:

- Systems Thinking: Recognizing patterns and relationships across disparate information and knowledge systems.
- Systems Practice: Developing imaginative forms, processes, and solutions that communicate or create new relationships and patterns across disciplines.
- Team Building: Working in cross-disciplinary collaborations, respecting what each perspective brings to problem solving.
- Team Process: Facilitating democratic and just decision making, sharing power and responsibility, and applying conflict resolution when needed.
- Project Assessment: Building feedback loops into processes to constructively evaluate individual and team efforts so that methodologies and outcomes can be more effective and resilient.

### Preparing the Ground

Critical to the success of any interdisciplinary course is fostering a mix of students within the classroom. In such a setting, each student brings her disciplinary skills to the group and offers unique insights and solutions. Developing inter-departmental alliances can greatly aid in encouraging students to take an eco-art course, and the resulting contacts provide a rich resource for guest lecturers. I have found environmental faculty to be very interested in networking across disciplines, and they are often intrigued by the possibility of using art to communicate environmental perspectives.

I begin my eco-art courses with personal and professional introductions, asking students to submit a professional resume and short biography, as well as any examples of their visual or written work. I also provide students with a questionnaire that includes an assessment of their personal and disciplinary skills. These materials are discussed and then compiled in a notebook for reference during the semester. In preparation for a community-building exercise, I ask students to bring to class an object they have collected from nature—a shell or rock, for example—that holds special significance for them. If they have no such object, I suggest that they go for a walk and find something that attracts them. These collected objects form the basis of the exercise: Students sit in a circle, preferably outside. I explain the concept of the talking stick, adapted from Native American council processes, in which the person holding the stick is allowed to speak without interruption. Using the talking stick, each student describes the object

s/he has brought and its significance—what stories does this object hold, what memories or experiences? I emphasize active listening and privacy: what occurs in the circle is confidential and is not to be repeated or discussed outside the circle, even among those present.

The found object leads into the second part of the exercise: I ask students to describe a childhood experience of nature. Stories shared can be both frightening and wondrous; our complex relationships with human and non-human nature begin to emerge. For example, in one class a student described a magical orange pool that her friends and she would visit—until she told her mother who forbid her from going there again (presumably because the pool was polluted). The talking circle bonds the students to one another and builds a learning community.[2] Students begin to listen to and respect one another as *people*, beyond differences of opinion. Providing visceral, multi-sensory experiences throughout the course helps to ground environmental concepts in lived experience.

### Systems Thinking

Students' understanding of environmental problems—their causes and solutions—is often limited and inaccurate. Developing eco-art projects that are both insightful and effective requires a deeper understanding—a "deep eco-art." Theory is therefore an essential component in my courses. Given the limitations of a single semester, my intent is to introduce students to a broad range of environmental analyses, including environmental history (Merchant 1989; Cronon 1996); environmental philosophy, including deep ecology (Leopold 1949; Devall 1995; Macy 1998), social ecology (Bookchin 1995; Heller 1999), and ecofeminism (Plumwood 1993; Warren 2002); postmodern science and critiques of biotechnology (Capra 1994, 1996; Bohm 1994; Shiva 1997), and environmental justice (La Duke 1994; Di Chiro 1996). Readings must be tailored to the students' backgrounds and abilities. Selecting one or two key texts from these categories may be sufficient to challenge students.

Class discussions and written responses to the readings are essential. Writing can take the form of informal journals or more formal essays. I require students to keep a journal with assigned entries during the course, so we may both observe the development of their "systems thinking." Unlike the writing of formal papers, in which students may be more concerned with their grade than the content, journals reveal heartfelt inquiries and struggles. In class discussions, students learn that our social constructions

of nature have produced a hierarchy of good and bad natures, compromising the health of human and non-human species and systems (Cronon 1996). In class, we probe the historical and social causes of western dualistic thinking and the impact of splitting nature and culture, body and mind. Students begin to see that sexism, racism, classism, and naturism are symptoms of the same disease, not isolated social problems competing for scarce resources (Plumwood 1993; Warren 2002). Through journaling and discussion, students apply these theoretical perspectives to their lived experiences, and come to see how theory operates in everyday life.

By approaching eco-art practice with a more complex understanding of human and non-human natures, students are prompted to reject nostalgic, essentialist analyses of environmental problems. An environmental ethic can then be built on an understanding of the interdependent web of life—not as an idealization of nature, but as sound science based on systems thinking (Capra 1996). This is not to discount the spiritual, intuitive, and poetic dimensions of our relationship to nature. Rather, the creative challenge is to craft emotion and reason into compelling visual statements that appeal to both heart and mind. By the end of the semester, students redefine nature to encompass both human and non-human: "My perceptions of 'nature' have changed from a dichotomy to an all inclusive definition . . . where nature is actually inclusive of the man made. This changes our relationship with the environment in that we must work in harmony with it. As I go into my professional life, I believe I will maintain this idea of collaboration with the earth" (Margaret Tarampi, architecture student, Carnegie Mellon University).

### Systems Practice

If the intent of eco-art is to "challenge perceptions, elucidate the complex structure of an ecosystem, examine a particular issue, . . . or work directly to physically restore the biophysical environment," then theory must translate into action (Wallen 2000). Theory can be synthesized into eco-art forms that communicate deeper understandings of the relationships between human and non-human others. If students are exposed to diverse nature discourses, their projects will be more effective in educating and inspiring others.

The "practice" section of the course is focused on producing a collaborative project. To assist students in developing the content and form

for a project, I introduce diverse eco-art approaches and their rich historical legacy. Barbara Matilsky's excellent catalogue, *Fragile Ecologies*, provides a concise historical overview (Matilsky 1992).[3] Many working eco-artists maintain web sites, and there are now some excellent, comprehensive web resources on eco-art, including greenmuseum.org and The Green Arts Web (greenarts.org). I also expose students to diverse eco-art forms, including installation and electronic media, performance, ecosystem and habitat restoration, site-specific works and interpretations, and community and urban renewal. We discuss historical representations of the environment, such as Thomas Cole's *The Course of Empire* (1834–36), in contrast to contemporary eco-art strategies focusing on problem solving through site-specific interventions (or "ecoventions"), such as Betsy Damon's *The Living Water Garden* in Chengdu, Sichuan Province, China (1995–98). By considering the wide range of responses to the environment, students can determine the best vehicle for communicating their own concerns.

Identifying a topic for a collaborative project is the most difficult aspect of the course. I encourage students to address local issues, and I invite a faculty member or a representative of a local environmental organization to present an overview of the state of the local environment. A guided tour of a local ecosystem can also inspire and assist students in brainstorming. I may suggest possible projects or a focus, such as assigning the category of "water" as the subject for all class projects. However, I encourage students to develop their own topics based on their interests. Students should decide on a project, or at least narrow the possibilities, early on in the semester, since research and execution often take longer than anticipated.

In selecting the content and form for a project, the artist's relationship to "the public" is carefully considered: What responsibility, if any, does the artist have to his/her audience? This is a hotly contested question within the art community and in the larger sphere of public art, and it is of particular concern to eco-artists, whose work is intended to effect social and environmental change. Through discussing the role of the artist in society, encouraging the identification of target audiences in project proposals, and requiring final projects to be presented to the public, we can invite students to grapple with these difficult and timely issues. They confront their own ethics and accountability to the community of which they are a part—whether that is their own neighborhood or the global village.

### Team Building and Process

Developing an eco-art project includes creating a team, project conception and proposal writing, compiling resources and materials, research and content editing, production, and publicity and presentation to the public. By identifying a clear process for project conception and execution, a schedule can be implemented and tracked. In introducing team building and processes to students, we discuss collaborative models and strategies in developing projects: How will decisions be made among group members? How will the work be delegated? How will the group evaluate and refine its production? If difficulties arise, how will they be addressed? It is instructive for students to evaluate their prior collaborative and team experiences, and what assumptions they have drawn.

Depending on class size, students can work as one team or break into several. If a team is too small (under four), a problem student can block productivity. If the team is too large, coordinating schedules and tasks may prove too difficult. Groups comprised of four to six students generally work best. When it is possible to achieve, a balance of skills, cultures, genders, and disciplines within each group can provide a rich multidisciplinary experience.

I find it helpful to choose a student from each team to be the team facilitator. In making selections, I look for students who are dependable and demonstrate potential for leadership, and I attempt to balance diversity in backgrounds and perspectives. The facilitator guides the team in making decisions, setting meetings, and scheduling tasks. Facilitators are encouraged to share ideas and problem-solve with one another, and they are my primary contact for monitoring project progress and problems. If difficulties arise within a team, it is the responsibility of the facilitator to inform me. However, facilitators are often reluctant to single out a problem student within a group. Thus, I support the efforts of the facilitators by assuming the role of "project manager." For example, I provide tools for equitable decision making and strategies for conflict resolution. I may bring in a guest lecturer trained in the techniques of group dynamics and mediation.

One of the greatest challenges for students is time management. I develop a master schedule for each stage of the project and monitor progress carefully. Since scheduling common meeting times is often difficult for students, I provide significant in-class work time, and require regular progress reports. In addition to scheduling difficulties, students often conceive of

grandiose projects that cannot possibly be realized in the time given. I encourage students to think big while brainstorming, but then scale down to accommodate time constraints. I also emphasize the importance of developing a backup plan—if time runs out, a project can be realized in stages; perhaps only the first stage will be executed during the course (as in the Chatham College CD-R discussed below).

### Project Assessment

Fritjof Capra describes feedback as a basic principle of ecology that can be used to build sustainable human communities: " . . . a community that maintains an active network of communication will learn from its mistakes, because the consequences of a mistake will spread through the network and return to the source along feedback loops. Thus the community can correct its mistakes, regulate itself, and organize itself" (Capra 1996, 82). Developing effective systems solutions requires appropriate feedback, or assessment, methodologies. Within the context of visual art, assessment usually takes the form of critiques. Unfortunately, class critiques are often vague and unproductive. Since eco-art is a relatively young field that bridges many disciplines, comprehensive methodologies for evaluating the effectiveness of eco-art projects have not been developed and may not be desirable.

An intriguing model to consider is presented by Ian H. Thompson in his book, *Ecology, Community, and Delight,* in which he identifies three sources of value in landscape architecture: ecology/environment, community/social, and delight/aesthetics (Thompson 1999). We might be guided by similar concerns, asking questions such as the following when assessing the effectiveness of eco-art:

- Do the aesthetics draw me into the project, awaken my senses, and stir my emotions or curiosity?
- Is there integration between the design, materials, and content?
- Am I prompted to reconsider my assumptions about human/non-human nature?
- Are patterns and relationships elucidated across disciplines, communicating new insights for myself or others?
- Is the intent and content accessible to the general public; does the project provide entry points and/or interpretive materials to facilitate this? Are these materials effective?
- Does the project instigate dialog and/or action? Are feedback mechanisms and/or opportunities for action provided?

In an introductory course on eco-art, I focus assessment of projects on the process more than the end result. Students fill out a "Feedback Questionnaire" prior to class discussion, allowing time for reflection. General discussion centers around what worked well, what was difficult, what students learned, and what they would do differently next time. Students often identify publicity or product distribution as a weak point in meeting their project objectives. Completing projects can be so demanding that students fail to develop publicity strategies. Depending on the type of project, publicity might include announcing a public reception or demonstration, or distributing a CD-ROM. Assigning a student from each working group to a publicity team might provide a solution.

If the collaboration was successful, students usually indicate that they learned the value of working across disciplines, sharing resources and skills. Eric Egenolf, an architecture student at Carnegie Mellon commented, "Collaboration was key, and everyone brought different skills and abilities to the projects. There were always problems to be solved along the way, and group members did what was necessary to keep the projects going. In the end, every group member felt that he/she owned a piece of the installations as a result of his/her time and hard work." The majority of my students have found collaboration to be highly rewarding and say they would do it again, despite the frustrations of scheduling and working together. Lisa Diodotti, an art student at Carlow College commented, "Our diverse backgrounds allowed us to focus on certain aspects of the project and do them well. Our multidisciplinary team worked so well; it allowed us to think of many different ideas, ways of going about things, and ways to execute. I would like to work with a diverse team like this in the future."

Collaboration most often fails when responsibilities are not shared equally. This may be the result of poor communication as much as attitude. I encourage facilitators to alert me to such problems early on, and I repeatedly emphasize that each member of the group is responsible for staying in communication. With the availability of email and online discussion tools, this should not be an issue. Students who do not pull their own weight are, in effect, cheating. Pointing this out is a powerful incentive to being a responsible team member. I have found that students will come forward if a team member is seriously impacting the success of the group, since their grade is dependent on effective teamwork. In assessing student performance, my grading policies emphasize team dynamics and process. I determine the project grade after the class evaluates their projects

through both the Feedback Questionnaire and class discussion. Each member of a team receives the same grade for the project. I would prefer students to grade their own projects; however, I have found that most do not have the critical skills to objectively grade their own work. Depending on the maturity of the students, team grading could be an option.

In the microcosm of the classroom, students gain hands-on experience in interpersonal skills and project management that can serve them well in their professional lives. Their exposure to multidisciplinary analyses and methods will, hopefully, encourage them to work with professionals outside their field when solving complex, systems-based problems that engage human and non-human natures.

*project case studies*

An eco-art course can be constructed in many ways depending on the disciplinary strengths and research interests of the instructor. My interests have centered on the humanities, as I have searched for answers to why humankind is threatening its life support systems, and why we have so little regard for non-human others. My own art practice is based in installation, which includes both traditional art forms and current digital technologies. Given my background and the departments in which I have taught, student projects have often culminated in installations and digital CD-ROMs.

For "12 Cars and Walls of Waste" (Art Department, Carnegie Mellon University, 2000), students targeted waste and recycling on the campus. Their research determined that 12 tons of garbage are generated on campus daily—the equivalent of 12 cars. They created a car form in chicken wire and progressively filled it with trash over the course of a week. "Yield" and "Stop" signs communicated these statistics. To generate interest in the project, they also outlined 12 car forms with tape on the sidewalks throughout campus. "Walls of Waste" was the second part of the project. A circular maze of trash-filled chicken wire walls was sited in the Student Center lounge. Videotapes of the local landfill were projected on two of the walls. Students coordinated with the campus environmental club to have an opening reception with a guest speaker and a showing of a related film.

The students developed an extensive and professional proposal with site drawings, which were critical in procuring the space and funding for the project. The architecture students on the team were a tremendous asset, contributing their drafting and construction skills. The project was

highly visible and reached a large audience. Overall, the students were very satisfied with the project; however, they would have liked to follow up on their project with more concrete action, such as a waste reduction and recycling proposal submitted to the college administration. Margaret Tarampi commented, "I think engaging the public in your piece as well as making them a part of the piece, gives a sense of ownership and self motivated learning from the piece. If we had more time, I think we would have been able to develop our project to address these goals." (Architecture student, Carnegie Mellon)[4]

The project "Chatham College Arboretum: Mellon Garden CD-ROM" (Master of Arts in Digital Technology program, 2001) was a collaboration between three classes: Interactive Media, Computer Illustration, and Landscape Independent Study. Students developed the content, designed the interface, and produced a working model for a comprehensive CD-ROM of the Mellon Garden at Chatham College. The CD-ROM includes a virtual walking tour, history of the garden, and a plant index. A semester-long lecture series coordinated by the three faculty members included guest speakers from a range of environmental disciplines.

This was a highly ambitious project initiated by myself, Steffi Domike (Director of Master of Arts in Digital Technology), and Behula Shaw (former Director of Landscape Studies). The students produced a highly engaging and professional CD-ROM, although there were two primary challenges with this project: First, the course listings did not explain the project-based focus of the courses. Students need to know at the outset what they are signing on to in a project of this scope, since dedication and commitment to the final result is critical. Second, we did not anticipate how long it would take to develop the content, design the interface, and build the CD-ROM. In the future, I would design such a project to span three semesters—first semester: develop the content; second: design the interface; and last: build the CD-ROM. I would also obtain the support of the administration in funding production and distribution of the CD-ROM prior to starting the project.

These examples illustrate the content and form eco-art projects can take in a university environment. Of course, there are many more possibilities, including performance, publications, community gardens, and habitat and landscape restoration. Integrating such large projects into the curriculum is not always easy. The interdisciplinary nature of eco-art requires significant lead time to develop a clear and concise course descrip-

tion, disseminate course information across campus, and attract students from diverse disciplines. A course of this scope also requires students who are mature and dedicated. When collaborating with colleagues on combined class projects, additional lead time is needed to coordinate curricula and schedules, and to share resources. Given these opportunities and challenges, eco-art pedagogy can best be served within an interdisciplinary educational ecosystem.

### TEACHING ECO-ART IN CONTEXT: A SYSTEMS APPROACH

Eco-art pedagogy facilitates students in developing valuable skills, including recognizing and analyzing problems within a systems context (systems thinking); communicating and visualizing the network of patterns and relationships within which a problem resides (systems practice); developing effective collaborative processes that integrate diverse interdisciplinary perspectives (team building and process); and incorporating feedback into our processes and products to strengthen the sustainability of our human and non-human systems (assessment).

These skills can best be fostered within an educational ecosystem that provides both depth and breadth. For example, a core group of environmental and ecological foundation courses could be identified from existing course offerings within a university, and be supplemented by neighboring educational institutions, including environmental organizations and research groups. This core curriculum would be balanced across the humanities, arts, and sciences and be required for all interdisciplinary environmental majors. Examples of such courses might include: Environmental History, Cultural Studies, Environmental Literature and/or Philosophy, an art history survey of historical and contemporary representations of the environment, and introductory courses in Environmental and Landscape Studies.

After a student has built an environmental foundation through these core courses, s/he could then focus his/her studies to develop a specialty—a major such as Environmental Art with a minor in Landscape Studies. In the final year of college, the student would branch out again, taking integrative courses that provide opportunities to work collaboratively across disciplines and apply discipline-based skills in diverse contexts. These capstone courses would be solutions-based, bringing students together across disciplines to address real-world problems in the field. This might include internships at local parks or environmental centers, or within research groups.

What is needed to develop such a curriculum is a system—or network—to connect and fully utilize existing educational resources. Administration of such a network could be implemented through an existing program, such as Environmental or Interdisciplinary Studies, or by conceiving a new program. An eco-artist might be an ideal candidate to administer such a program, with his/her integrative skills in bridging the arts, sciences, and humanities. Given the student demand for interdisciplinary education and increasing interest in the environment, such a program could be an attractive selling point for student recruitment.

It has become almost commonplace for universities to advocate the importance of interdisciplinary education, yet most have serious difficulty in realizing such curricular goals. To return to Gregorian's recommendations:

> Since some of the most promising areas of research and creativity are interdisciplinary not only in the physical and natural sciences but in the social sciences, the humanities, and the arts as well, we have to develop creative multi-disciplinary and interdisciplinary approaches in our liberal arts curricula in order to provide intellectual coherence through interdisciplinary themes. There is no reason why scientific, historical, and literary themes cannot be taught through team teaching as well as multiple and comparative perspectives and expertise, in order to provide our students knowledge not only of disciplines but of their interconnectedness as well. (Gregorian 1993, 610–11)

The environment is an ideal theme with which to begin the work Gregorian suggests, and environmentalist academics can lead the way in developing interdisciplinary, theme-based courses that offer a systems approach to education. In this collaborative spirit, I invite my environmental colleagues across disciplines to meet together, share resources, and begin to formulate curricula that use the environment as a context. In so doing, perhaps we can dis-arm our students with effective tools for social and environmental change.[5]

### NOTES

1. This definition grew out of an online eco-art listserve dialog, ongoing since 1999. As an outgrowth of the dialog, College of the Atlantic invited members of the dialog to be artists in residence at the college in 2000. Wallen's definition was subsequently posted on the college web site. Definitions of "eco-art" have been debated on the dialog since its inception, and Wallen continues to revise her text. See http://www.coa.edu/ecoart.
2. Joanna Macy has developed many such community exercises; see her book (1998).

3. See also Kastner and Wallis 1998; Spaid 2002.
4. See my class web site at: http://www.studiotara.net/ecoart
5. Special thanks to my colleague, Mo Dawley, Art and Drama Librarian, Carnegie Mellon University, for her editorial suggestions and pedagogical insights. She took over my scheduled eco-art course at Carnegie Mellon in 2001 when I was offered my current position. See our web site which includes a comprehensive bibliography on environmental art: http://www.greenarts.org.

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