

From the Ground Up: Why Urban Ecological Restoration Needs Environmental Justice

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ABSTRACT

While increasing urbanization intensifies the need for ecological restoration in densely populated areas, projects implemented in urban settings are often beset with conflicts stemming from a mismatch between traditional restoration practices and social realities. As ecological restoration practitioners seek to protect and remediate urban ecosystems, I contend that the broad set of principles developed by the environmental justice movement can provide an excellent conceptual framework for integrating social ecologies into restoration plans. Successful integration is constrained, however, by a number of challenges both within the Principles of Environmental Justice and ecological restoration theory and practice. Using a case study of New York City's Green Guerillas community gardening program, I show how the principles can begin to be operationalized to provide an effective grounding methodology for the design, development, and implementation of urban restoration projects.

KEYWORDS

community gardening, ecological restoration, environmental justice, social justice, urban ecology, urban restoration



Those involved in ecological restoration are becoming increasingly aware that the success of projects demands heightened attention to the social dimensions of the field (Hobbs et al. 2004). Research in the last decade confirms the importance of community involvement in ecological restoration projects: the positive benefits and values of involvement, the many ways that involvement can shift public perception of restoration projects, and the negative repercussions of proceeding without it (e.g., Bright et al. 2002; Lindig-Cisneros 2000; Shandas and Messer 2008). From inclusive planning processes to public work sessions and education campaigns, bringing social ecologies into the practice and implementation of restoration is imperative.¹

While most ecological restoration projects undertaken in the past quarter century have focused on rural and wildland environments, ur-



banization trends will increase the demand for restoration and move more projects into heavily populated urban areas (Ingram 2008). When one considers that more than half of the world's population now lives in urban environments (United Nations 2009), the urgency for developing socially successful and equitable processes for urban restoration projects becomes clear (Light 2000a). As restoration practitioners seek to protect remnant resources and remediate polluted ones, the principles developed by the environmental justice movement can provide an excellent conceptual framework for integrating social ecologies into restoration plans.

In this paper, I discuss how the principles of the environmental justice movement might be used to improve the planning and implementation of ecological restoration projects, particularly those situated in urban environments. I first present the basic Principles of Environmental Justice as they were originally developed, and highlight how social goals dealing with community involvement in environmental justice have important implications for achieving social goals in urban ecological restoration projects. Connecting these environmental justice principles with the practice of ecological restoration, however, is constrained by a number of challenges, and in the next two sections I discuss how conceptual issues within both the Principles of Environmental Justice and ecological restoration theory and practice have limited this connection from occurring in most urban restoration projects. There are powerful exceptions to the norm, and in presenting a case study of the Green Guerillas' community gardening program in New York City, I contend that urban restoration *can* provide (1) structure for the development of proactive projects, and (2) ways to increase connectedness between urbanites and their natural environments, *if* the principles comprising the environmental justice movement are utilized as the grounding methodology for the design, development, and implementation of these projects. The case study provides insights to further investigate how principles of environmental justice might transition from broad normative precepts to more fully operationalized guidelines for evaluating the various stages of urban restoration projects.

Basic Principles of the Environmental Justice Movement

The environmental justice movement is based upon the premise that all people, regardless of race, class, or gender, have the fundamental



right to a clean and safe environment. Although the environmental justice movement had been active since the early 1980s, it was not until October 1991 that individuals from groups across the country convened for the First National People of Color Environmental Leadership Summit in Washington, D.C. More than 600 people attended and worked collectively on a document titled, “Principles of Environmental Justice” (PEJ). The seventeen-point document underscored a growing desire to ensure environmental justice for all, regardless of historical privilege or oppression (Grossman 1994) (see Figure 1). While the document was radical in that it asserted equal rights for groups who have been demonstrably denied those rights, much of it is grounded in a commonsense respect for fellow human beings, including mention of the fundamental rights to clean air, land, water, and food. The necessity of such a simple document based upon general notions of equality, respect, and freedom from contamination speaks volumes about the lack of such things in contemporary society (Grossman

PREAMBLE:

WE THE PEOPLE OF COLOR, gathered together at this multinational People of Color Environmental Leadership Summit, to begin to build a national and international movement of all peoples of color to fight the destruction and taking of our lands and communities, do hereby re-establish our spiritual interdependence to the sacredness of our Mother Earth; to respect and celebrate each of our cultures, languages and beliefs about the natural world and our roles in healing ourselves; to insure environmental justice; to promote economic alternatives which would contribute to the development of environmentally safe livelihoods; and, to secure our political, economic and cultural liberation that has been denied for over 500 years of colonization and oppression, resulting in the poisoning of our communities and land and the genocide of our peoples, do affirm and adopt these Principles of Environmental Justice:

1. Environmental justice affirms the sacredness of Mother Earth, ecological unity and the interdependence of all species, and the right to be free from ecological destruction.
2. Environmental justice demands that public policy be based on mutual respect and justice for all peoples, free from any form of discrimination or bias.
3. Environmental justice mandates the right to ethical, balanced and responsible uses of land and renewable resources in the interest of a sustainable planet for humans and other living things.

(continued)

Figure 1 ■ Principles of Environmental Justice

4. Environmental justice calls for universal protection from nuclear testing, extraction, production and disposal of toxic/hazardous wastes and poisons and nuclear testing that threaten the fundamental right to clean air, land, water, and food.
5. Environmental justice affirms the fundamental right to political, economic, cultural and environmental self-determination of all peoples.
6. Environmental justice demands the cessation of the production of all toxins, hazardous wastes, and radioactive materials, and that all past and current producers be held strictly accountable to the people for detoxification and the containment at the point of production.
7. Environmental justice demands the right to participate as equal partners at every level of decision-making including needs assessment, planning, implementation, enforcement and evaluation.
8. Environmental justice affirms the right of all workers to a safe and healthy work environment, without being forced to choose between an unsafe livelihood and unemployment. It also affirms the right of those who work at home to be free from environmental hazards.
9. Environmental justice protects the right of victims of environmental injustice to receive full compensation and reparations for damages as well as quality health care.
10. Environmental justice considers governmental acts of environmental injustice a violation of international law, the Universal Declaration On Human Rights, and the United Nations Convention on Genocide.
11. Environmental justice must recognize a special legal and natural relationship of Native Peoples to the U.S. government through treaties, agreements, compacts, and covenants affirming sovereignty and self-determination.
12. Environmental justice affirms the need for urban and rural ecological policies to clean up and rebuild our cities and rural areas in balance with nature, honoring the cultural integrity of all our communities, and providing fair access for all to the full range of resources.
13. Environmental justice calls for the strict enforcement of principles of informed consent, and a halt to the testing of experimental reproductive and medical procedures and vaccinations on people of color.
14. Environmental justice opposes the destructive operations of multi-national corporations.
15. Environmental justice opposes military occupation, repression and exploitation of lands, peoples and cultures, and other life forms.
16. Environmental justice calls for the education of present and future generations, which emphasizes social and environmental issues, based on our experience and an appreciation of our diverse cultural perspectives.
17. Environmental justice requires that we, as individuals, make personal and consumer choices to consume as little of Mother Earth's resources and to produce as little waste as possible; and make the conscious decision to challenge and reprioritize our lifestyles to insure the health of the natural world for present and future generations.

Adopted today, October 27, 1991, in Washington, D.C.



1994). Although subsequent work has further developed ideas in the PEJ (e.g., Agyeman et al. 2009; Higgs 2003), the originating documents provide a logical starting point to examine how environmental justice considerations strengthen the theory and practice of ecological restoration.

Many of the points in the Principles document discuss the necessity of involving community members in the decision-making process for issues and projects that affect their environments.² While community involvement has long been seen as an important part of ecological restoration projects, environmental justice and the particular issues raised by urban ecological restoration challenge projects to go beyond nominal involvement such as getting community members to sign off on restoration plans developed and presented by experts at a community meeting (Hester 2006). Instead, the PEJ clearly state that communities themselves should develop and plan projects. In this way, urban restoration projects should ideally develop out of the needs and desires of a specific community, rather than originating from outside the community.³ The presence of these basic ideas of citizen initiation and substantive involvement in the Principles document not only challenge us to examine the extent to which community involvement has been integral to past projects, it also motivates us to develop innovative, authentically inclusive approaches to urban restoration (e.g., Irvine et al. 1999; Newman 2008; Palamar 2006; Tomblin 2009).

Challenges of Applying Environmental Justice Principles to Restoration

As they currently stand, the PEJ are broad, normative guidelines, not specific, operationalized points that can be readily applied by practitioners working with urban ecological restoration projects. In this section I discuss three challenges that must be addressed before the PEJ can be made application-ready.

Cultural Integrity and Ecological Sustainability

Interpreting the PEJ within the frame of ecological restoration, most of the principles speak to the need for culturally sensitive solutions for projects in and out of the urban environment. Consider Principle #12, which represents a conceptual summary of many of the other points: “Environmental justice affirms the need for urban and rural ecological

policies to clean up and rebuild our cities and rural areas in balance with nature, *honoring the cultural integrity of all our communities*, and providing fair access for all to the full range of resources” (emphasis added). While this is an admirable goal, it also presents some operational difficulties for how restoration projects are typically conceived and implemented. The principle recognizes that nature plays an important role in the rebuilding of human communities, but the emphasis on “honoring cultural integrity” seems to demand that urban and rural restoration projects maintain current and historical cultural use practices as a planning priority. These cultural practices must be taken seriously and cannot simply be overlooked for the sake of the greater ecological benefit (Tuan 1974).

Such a mandate can be problematic for ecological restorationists because some cultural practices will undoubtedly interfere with ecological goals. Many ecologists and environmental philosophers argue on the side of erring to protect the natural world, even if that protection requires a cultural shift (e.g., Hintz 2007; Jensen 2004; McKibben 1989; Wolch 2007).⁴ But from the perspective of racial justice, people of color have already made repeated cultural sacrifices, and thus the PEJ imply that it is time for some of these cultural sacrifices to be borne elsewhere or by other groups. One famous historical example of cultural sacrifices for the greater good are the restrictions on access to lands that now widely considered to be among the United States’ greatest natural assets: the national parks, forests, and wilderness areas. These lands were once the historical grounds of Native Americans, but in order to be protected, traditional uses of the land first had to be reapportioned, often forcibly (e.g., Spence 2000). Of course, this example is complex and the reapportionment occurred for more reasons than land preservation alone, but the cultural sacrifice remains.

While people of color should never be forced to endure inequitable environmental burdens or continued cultural sacrifices, further sacrifices shared by all constituents may be necessary for the success of ecological restoration projects, particularly in high-density, heavily used urban environments. Indeed, when a project is attempting to remediate an urban environment from harm caused by over-use and/or abuse, restricted or prohibited access may be the only way to ensure project success. It can, therefore, be challenging to see how communities will develop restoration projects that, “provide fair access to the full range of resources” (from PEJ #12) since many restoration projects require that activities considered destructive halt once the restoration has begun. Cases will surely arise when there can be no access to any



resources in an area, let alone access to the full range of those resources. Fortunately, the PEJ do not *demand* unrestricted access to the full range of resources, although any access that *is* allowed must be fairly distributed. Because people of color have historically been denied access to natural resources because of property ownership laws, segregation, and financial inaccessibility (among other reasons), fair distribution may mean that it is time for other groups to do without while use is extended to those who have been previously denied.

Considering long-term ecological sustainability reminds us that some human activities (even some with important cultural and historical value) cannot continue indefinitely, especially in high-density urban environments where ecological impacts are not dispersed over space and time. Fair access to the full range of resources available in a community's environment is important, but without attention to long-term sustainability, it is possible that environments can be degraded such that there are literally no resources available for anyone's use. In such cases, or in order to prevent such cases, fair access may actually mean no access at all. A focus on long-term ecological sustainability alongside an equal emphasis on social equity can help planners ensure that projects uphold the environmental justice ideals while ensuring that there is a viable, vibrant environment for everyone to enjoy.

Human Health and Ecological Sustainability

Along with cultural integrity, the PEJ's emphasis (especially PEJ # 4, 6, 8, and 17) on human health also seems to be at odds with commonly stated restoration goals. Here, however, activism under the auspices of the environmental justice movement could benefit from a deeper appreciation for the necessity of ecosystem protection. It is undeniably true that the protection of communities' health and rights to a toxin-free environment regardless of race, class, or gender is essential. But sometimes these things are sought without also understanding the connection with ecological goals. Maria Gunnoe, the winner of the 2009 Goldman Environmental Award in the US for her work against mountaintop removal mining practices, exemplified the chasm between ecology and environmental justice when she said, "I didn't even know I was an environmentalist!" (Smith 2009). This quote highlights two issues: (1) people often fail to realize the connections between "environmentalism" and health, and (2) it is easy to forget that many (if not all) environmental issues such as mountaintop mining have social, economic, *and* ecological dimensions. In this example, Gunnoe

was focused on the injustice of being forced to deal with negative environmental and health ramifications of mountaintop mining—not on the abstract environmental damage (such as to long-term ecological integrity & species diversity). While such ecological losses are lamentable in their own right, the environmental justice movement tends to focus on human inequities caused by irresponsible resource use. The fact that such hardships are typically borne by people of color and those in lower income brackets is the common thread that joins all environmental justice projects. Ecological restoration projects, if undertaken while using the PEJ, can help remind communities and restoration project participants that ecological sustainability *and* environmental justice can and should be part of every restoration effort.

Limits of Community Expertise

Desiring resident-initiated projects and “environmental self-determination” (PEJ #5) are noble goals, although they may not always be practical. Even in the most diverse community, there will be some kinds of expertise not held by the residents themselves (see the section on Expert-Driven Planning, below). Ecological restoration is a growing science, and many professional lives are dedicated to understanding the details of its study and practice. While it is reasonable to expect a community to see when environmental problems have escaped control, it may be harder to see when current practices threaten long-term ecological sustainability unless one truly is an expert at reading ecological signals. Since it is possible that a community could be acting in ways that, unbeknownst to it, undermine its own long-term survival, some projects may need significant support from outside experts, especially in terms of project scope and long-range goals. The deep involvement of community members can never be overlooked, but “environmental self-determination” may also be impractical (PEJ #5). Experts may need to offer consulting services to communities whose practices warrant change (de-Shalit 2003).

Furthermore, even when a community does recognize the need for change, they may be unwilling or unable to act. In such cases, experts may want to offer their services for developing and implementing plans to mitigate and/or prevent environmental damage. Ideally a community will be able to recognize any destructive potential in its actions or know when to seek assistance from experts. However, because we all have a limited capacity to focus on problems, in communities facing multiple challenges, such as is the case in many urban



neighborhoods, unsolicited advice from ecological specialists may be necessary (Wondolleck and Yaffee 2000).

Successfully moving from idealistic principles to practical application requires understanding these challenges, none of which sinks the ideas generated within the PEJ or the broader environmental justice movement. With careful planning, forethought, and dedication, these hurdles can often be surmounted in ways that ensure an even greater embrace of the PEJ in practice. Even in cases where they cannot be overcome, the challenges provide fertile ground for community dialogue and for the growth of both the environmental justice movement and ecological restoration.

Challenges to Ecological Restoration Theory and Practice

While ecological restoration has been gaining ground as part of the broader environmental movement, at the same time it faces some conceptual and practical difficulties. In this section I highlight four areas that make urban ecological restoration projects particularly challenging and illustrate what the PEJ may be able to offer to restoration practice.

Propensity to Focus on Wild Nature

As Andrew Light (2001) has argued, there exists an “urban blind spot” in our approach to environmentalism obscuring how we view the contribution of cities in achieving progress toward ecological sustainability. The American environmental movement has long tended to focus on wilderness undisturbed by humans as the only “real” nature, and while ecological restoration by definition deals with the repair of damaged ecosystems, much of the effort has been aimed at restoring non-urban wildlands. Although there are notable exceptions, environmentalisms’ anti-urban bias continues to inform how we think about and practice ecological restoration (Light 2001; Jordan 2000; Ingram 2008). When guided by the wilderness ideal underlying environmentalism, ecological restoration often fails to recognize human populations as an integral part of natural ecosystems, particularly the densely populated ecosystems within which most of us reside. The environmental justice movement reminds us that urban areas are environments, too, and that the need for environmental protection and restoration does not begin and end outside of city limits. Indeed, given the intensity of urban land use patterns it can be argued that the need for res-

toration in urban environments is even more pressing than in suburban and wild areas. Thus, embracing the environmental justice movement can help expand restoration efforts into the heart of the city.

Artifactualization

Under a key philosophical critique of restoration, once a site is “restored” it becomes, in some ways, an artifact (Elliot 1982; Katz 2000; Light 2000a). Although no natural area is ecologically static, restored ecosystems can slide into states of limbo whereby the historical point to which they were restored becomes the goal and, indeed, the only ecosystem they are permitted to be. Under such a view, human influences and non-native species (even non-aggressive ones) are cause for alarm and reason to take action to maintain the historical ideal embodied in the restoration project itself. Of course, not all restoration projects interpret the goal of historic authenticity so strictly, but those that do tend to create artifactualized systems.

If a restoration can be considered successful only if it achieves the re-creation of a historical system, then protecting the integrity of restoration projects demands ongoing efforts including limitations or exclusions on prior uses. Thus, many restored areas can exist only behind barriers of ongoing and often isolationist intervention. In rural areas, setting lands aside for restoration projects can be effective since use pressure on any individual property is considerably less. But, because urban environments simply do not have the room for such “off-limits” spaces, and because density and the intensity of use often requires that lands meet multiple goals (e.g., providing food and recreation while also performing ecosystemic functions), an ecological restoration that seeks the removal of human activities may, quite simply, fail (Weinstein 2008). Urban restoration projects with environmental justice as a major priority will be less concerned with the creation of an ecological artifact for its own sake than with creating living community spaces that improve people’s lives while they also protect or rehabilitate the landscape. This latter strategy gives much more flexibility for connecting social and ecological goals and will be more likely to align with the PEJ.

Limitations on Human Activity

Many restoration projects have focused on rehabilitation of natural spaces, but have not continued to allow significant human activities



on the site. Such behavioral restrictions are often the result of incomplete public participation in the planning process. These oversights are problematic even in rural areas, but can be exacerbated in urban environments where many people can have attachments to the land slated for restoration. If the management plans for the restored area conflict with the values and prior uses of land in an urban space, it is likely that the will of the community will overcome the will of non-resident project managers. Robert Ryan (2000) discusses this phenomenon, saying,

It is important for designers and managers to understand and respect the landscapes to which people have formed an attachment before undertaking ecological restoration projects. Such projects can drastically alter the existing landscape and destroy the very qualities of places that many natural area users may love, leading to public outrage over restoration efforts (p. 224).

As the former director of a small restoration project in northwest Ohio, I have experienced this very phenomenon. Although the approved project plans called for restoration to an oak savannah ecosystem, when community members saw that this required the removal of trees, they were outraged. For many, there was a distinct difference between the idea of removing trees and actually seeing those trees being removed. Some of the most vocal opponents were well-educated ecologists who (unlike many members of the public) understood the ecological value of the restoration but who had an emotional attachment to the idea of “trees”—whether or not they were physical users of the project site. The problems generated during the early stages of this restoration project (which was subsequently cancelled) could have been mitigated if more community members were authentically instead of tangentially engaged in the planning process.

Even if no significant emotional attachments to an urban site exist, there may be use-attachments—patterns of use that have become part of the community ethos. If a restoration project precludes or otherwise prohibits those previous activities, public outrage may result. While there are often good reasons for usage limitations, such limitations can interfere with public acceptance of the project. The ultimate ramifications of public outrage can be exacerbated in a densely populated urban setting. The PEJ remind us that ecological restoration projects should be designed so as to accommodate as many existing uses as possible (see section on Cultural Integrity and Ecological Sustainability above, and especially PEJ # 12); such accommodation is more likely to occur when the planning process arises from within the

community itself than if it is imposed from outside. While ecological restoration sometimes demands the sacrifices described above, it is important that such sacrifices be critically examined to ensure they are ecologically necessary and racially equitable.

Expert-Driven Planning

In urban areas, where social relationships are more visible and spontaneous (because of density), those relationships also tend to be more important for the success of projects within a specific community.⁵ Preserving those relationships demands that community members are included in all levels of restoration projects. Even a cursory look at contemporary literature on ecological restoration reveals that there is significant scientific depth and sophistication in restoration plans. Many (if not most) restoration projects are initiated by experts; some projects are driven by ecological theory and experimental treatments so scientifically structured that laypersons are unable to participate in the short- or long-term planning goals for the site in question. In these cases, often the role of the public is to participate in the labor, but not in the decision-making.

But while many other projects also need scientific expertise, those experts do not need to be the project drivers (Eden and Tunstall 2006; Gross 2006).⁶ This may especially be true for restoration projects that take place on public lands such as parks which are located in or near a residential community. Community members tend to resent individuals who arrive unbidden from outside the community to “solve” their problems. Communities want to be responsible for assessing their own needs rather than having their needs dictated to them. This is true in most communities, whether rural or urban. A telling quote from Aboriginal elder Lilla Watson explains, “If you’ve come to help me, you’re wasting your time. But if you’ve come because your liberation is bound up with mine, then let us work together” (Stringer 1999: 194).

In any community, it takes an outsider time to understand how the community functions, what its needs are, and how to best assist the community in meeting those needs. In urban areas, and particularly in low-income urban areas, there is a tendency for well-meaning individuals and agencies to offer solutions to the problems seen from the outsider’s vantage point. However, problems viewed from without may not be the same as those from within; there may also be significant internal variation (Gobster 2001; Gobster and Westphal 2004). Inner city housing “projects” are an excellent example. Although state



and federally funded housing projects *do* provide reasonably priced housing for low-income individuals, quite often those housing projects are poorly designed and/or in various states of disarray. Poorly designed housing units in physical disarray may provide a room, but they cannot provide the support, safety, and cleanliness that people really need from their home communities. Urban restorationists would be wise to learn from such failed (or failing) public works projects. It may be the case that given the time, opportunity, funding, and necessary support, urban communities can identify as well as construct plans for ways to remedy the problems they face. Once a community has identified its own problems and developed some ideas for potential solutions, members of that community can then enlist the assistance of appropriate experts and consultants. This internalizes the PEJ by including the right of community members to participate equally at “every level of decision-making including needs assessment, planning, implementation, enforcement, and evaluation” (in Bullard 1994: 274–275). While it is important for communities to remember that they likely need the assistance of outside experts (see the section on Limits of Community Expertise, above), outside experts need to remember that communities must be deeply and authentically involved in the project planning process.

Putting Principles into Practice: The Green Guerillas Community Garden Program

While there are literally thousands of ecological restoration projects around the world, and while many seek to balance existing uses and social equity with the demands of ecological sustainability, at least some restoration projects suffer from the conceptual problems discussed above (Fernandez-Juricic and Jokimahi 2001; Grove and Burch 1997; Pickett and Cadenasso 2008; Weinstein 2008). Because these problems prohibit or otherwise negatively impact long-term project success, and because urban restoration projects can be even more demanding than their rural counterparts, I believe it is prudent for urban ecological restorationists to look deeply for ways to put the PEJ into practice in on-the-ground restoration projects—in and out of the urban environment.

Environmental justice offers a set of principles that can reinvigorate restoration theories and more meaningfully integrate communities with restored landscapes, even in high-use, densely populated urban

environments. Although these principles demand revision of some of the major tenets upon which ecological restoration has historically been based, doing so can provide a more equitable remedy to the ecological problems occurring in densely populated environments and can help ecological restorationists find their most effective role within a community-oriented planning process. As the environmental justice movement has shown, most communities—and particularly communities of color and economically disadvantaged communities—can sometimes resent outside experts who presume to know what is best for them.⁷ Both the environmental justice movement and the ecological restoration movement have shown that community participation is a key element in the long-term success of any project, and the Green Guerillas' community gardening efforts in New York City provides a good case study and model for integrating the principles from both movements in an urban setting. Examination of this case study will show how a community project that is neither clearly an act of ecological restoration nor an act of environmental justice nevertheless draws on and implements ideas from each to generate a successful and broadly conceived urban restoration project.

Many cities periodically find themselves victim to economic downturns that can sharply reduce property values and result in significant numbers of vacant lots and abandoned buildings. New York City experienced a particularly severe downturn in the early 1970s, and in areas such as East Harlem, the Lower East Side, and Hell's Kitchen, the number of vacant lots grew dramatically as the city razed abandoned structures that had become hubs for arson, vandalism, and socially undesirable activities. These newly created open lands offered interesting possibilities for community renewal but often became problems of their own. As fences were erected to prevent dumping and other activities, physical access to these lots was blocked and they remained eyesores to neighborhood residents.

At the height of the financial crisis in the 1970s, Liz Christy, a resident of Mott St. on Manhattan's Lower East Side, helped to found the Green Guerillas, a group dedicated to improving the environmental conditions in their inner-city neighborhoods. The Green Guerillas created "seed grenades"—mixtures of seeds, fertilizer, and water placed into old glass Christmas tree ornaments or small balloons—and began to toss them over the fences cordoning off abandoned property.⁸ The seed bombs accomplished their goal, and the vacant lots became havens for greenery and wildflowers. Around the same time, Christy began working on another project in her neighborhood. With the help



of other local volunteers, she spent a year installing fencing, removing garbage and debris, improving the quality of the soil, and planting garden species that would help beautify an abandoned lot on the corner of Bowery and Houston Streets. The City soon recognized the value of Christy's project, called the Bowery Houston Community Farm and Garden, and the work of the Green Guerillas. In 1974, the New York City Office of Housing Preservation and Development approved a lease of the property to the group. For just \$1 per month, the Green Guerillas could now take legal control of the ecological viability of this previously abandoned land and begin to use it in ways that provided distinct and visible benefit to the local community. This initially small garden plot was the first community garden in NYC, and after decades of work and property additions, is now over an acre in size. In honor of Christy's work, it has since been renamed The Liz Christy Garden. While ecological restoration was not the principal motivating goal of the community gardening project, a native plant habitat has been an important part of the garden for more than 25 years, and the group offers habitat walks to the public during New York City's Wildflower Week in May. This integration of ecological and social concerns is evident in the broader efforts of the Green Guerillas, which over the years has blossomed into a city-wide, governmentally sanctioned, and formal community garden system that preserves open space, protects native habitats, helps develop local community bonds, prevents otherwise undesirable land uses, and protects the soil from contamination.⁹

The Green Guerillas' work exemplifies how on-the-ground projects can join together the goals of ecological restoration and environmental justice. First and foremost, it "affirms the fundamental right to political, economic, cultural and environmental self-determination of all peoples" because members of the community designed and implemented the project (from PEJ #5). It was not conceived by outside experts who arrived to tell the community that they needed to clean up abandoned, unsightly properties. Because they were living with the practical and aesthetic reality of those plots, they were already well aware of the problems such plots were causing. The awareness resulting from their everyday experiences spurred the project plans. The community members decided on the parameters of the project and they discussed and thereby self-determined what they hoped to see occur on some of the abandoned properties in their district. The resulting project was an affirmation of the community's political, cultural, and environmental autonomy. However, the community did

seek advice and direction from experts. Often the expertise needed existed within the community, and such individuals were called upon to assist (Christy 1978). Thus, the Liz Christy Community Garden shows how experts can play an instrumental and successful role in urban ecological restoration projects—even when the project is community driven.

The subsequent parts of the Green Guerilla's plans further illustrate how community members can "participate as equal partners at every level of decision-making including needs assessment, planning, implementation, enforcement and evaluation" (from PEJ #7). The Liz Christy Garden was developed by members of the neighborhood as a way for members of the neighborhood to take control of their own environment. Thus, it served not only as a way to improve the aesthetic and ecological quality of the environment, but also served as a positive community project and brought people together to improve the world in which they lived. Later, the community itself also initiated the bureaucratic transfer of official rights to the land. The city recognized the pioneering efforts and positive benefits of the project, but did so only after the community approached the City on their own. Thus, this project illustrates one case in which community members remained not just involved, but served as the project architects throughout its duration. The members of the community were the ones who sought to increase the size of the project, who assessed its success, and who made decisions regarding its future directions. At every point, the decision-making about this project arose from within the community itself.

Second, this project embraces the principle stating that environmental justice "affirms the need for urban ... ecological policies to clean up and rebuild our cities and rural areas in balance with nature, honoring the cultural integrity of all our communities, and providing fair access for all to the full range of resources" (from PEJ #12). The Liz Christy Garden project accomplishes exactly those goals: it cleaned up abandoned areas of the community, restored some semblance of balance with nature, respected cultural integrity through the collaborative processes that drive the project, and provided all community members with fair access to the restored land. The juxtaposition of native plant habitat and a pond that serves as home to several native aquatic species with vegetable garden plots, ornamental plantings, and outdoor spaces for neighborhood gathering and relaxation provide community members with a full range of opportunities for accessing and experiencing nature, and demonstrates how urban ecological



restoration projects can be integrated within broader goals to (1) restore some food security to communities; (2) allow communities to take advantage of the resources that are within their immediate reach; (3) begin to remediate the ecological integrity of the land; and (4) help strengthen the community's social bonds. Thus, the Green Guerillas' work illustrates viable ways in which ecological restorationists might join with community groups in urban areas to remediate ecological damage and meet the social goals of social and environmental justice.

Finally, the work of the Green Guerillas affirms the community's "right to be free from ecological destruction" (from PEJ #1). Living amongst abandoned buildings and properties, some of which surely house environmental hazards of various kinds and all of which are aesthetic insults, is living amongst ecological destruction. Although ecological restoration often regards the ecosystem as the "natural" part of an environment, when looking at urban ecology, the destruction incurred by property abandonment must be considered as an impact to the interdependent social-ecological system (Collins et al. 2000; Grove and Burch 1997). The Green Guerillas' seed bombs and the Liz Christy Garden affirm the community's right to be free from such destruction by taking control of and restoring the damaged lands. The reintroduction of native plants and some native fauna species (such as the Red-eared Slider turtle) underscores the convergence in work toward environmental justice *and* ecological restoration. Furthermore, that community members did not wait for permission to take control of their own environment illustrates the urgent importance of the right to live in an environment that is beneficial rather than detrimental to one's physical and emotional health.

In summary, this case study of the Green Guerillas efforts in New York City serves as a good example of how one community took ecologically restorative action into their own hands in a way that embraces some of the key PEJ. This case offers neither a clear case of ecological restoration nor a clear act of environmental justice; instead, it evidences the confluence between the ideologies, actions, and discourse of both ecological restoration and environmental justice. The case study further shows that it is possible for communities to see and understand their own needs, as well as develop the expertise necessary for at least some kinds of ecological restoration projects. Although the two projects described here may not seem ecologically complex to devise and implement, the social dimensions of the efforts were formidable and required significant levels of community organization, cohesion, and participation. While it may be more challeng-

ing for communities to independently implement more ecologically sophisticated restoration projects such as river restoration, toxics remediation, or wildlife reintroduction, these projects show that when a community is sufficiently empowered through ownership of the decision-making process, they are able to seek the help they need. When so empowered, it is likely that communities will reach out to the necessary experts for more complicated projects as well.

Conclusion

Ecological restoration projects, especially those in urban environments, have the potential to restore not just physical ecologies, but social ecologies as well. That potential can be reached through careful attentiveness to and integration of the PEJ. I have shown why such integration is necessary and beneficial. Most ecological restoration projects over the past few decades have occurred in relatively rural environments where land uses may conflict but where nearby substitutes for the newly prohibited uses are often available. Urban restorations rarely have that luxury; they almost always occur within the boundaries of established neighborhoods and on lands that have a long, often complicated use history. Furthermore, there are rarely other properties for urban dwellers to turn to if prior uses become prohibited uses. These and other potential conflicts addressed in this paper elevate and intensify the need for inclusive, community-driven processes. I have argued here that the environmental justice movement and the principles of environmental justice upon which the movement is based are essential if ecological restoration is to truly move from rehabilitating relatively remote areas and into areas that are heavily and continuously part of human habitation. I have also shown how application of the PEJ can change the way that ecological restoration projects are brought to communities. Specifically, the PEJ affirm that ecological restoration projects should arise from within the communities in which they take place. The case study of the Green Guerillas further uncovers how the PEJ can be operationalized in the case of urban restoration by showing specifically how the PEJ might guide decision-making and implementation of an urban restoration project.

Although much work remains before the PEJ will be fully operationalized such that they move from being largely normative guidelines to being methodologies of practice, what I have presented here



serves as a reminder that such an application is both possible and necessary. Because the PEJ can create urban restoration projects that grow authentically from the ground up and take seriously the community's right to oversee and manage all aspects of decision making, environmental justice praxis has the potential to democratize ecological restoration in a way that expands the accessibility and acceptability of such projects, even in dense and sometimes conflicted urban environments.

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Notes

1. I am using the term "social ecologies" to refer generally to the interconnected and interdependent network of relationships within the social sphere rather than to the political and philosophical movement, a more specific application of the term.

2. See figure 1, especially points 2, 3, 5, 7, and 13.

3. I do not mean to imply that restoration projects are normally imposed upon the communities within which they take place. However, there are at least some communities that have not appreciated the ecological restoration projects advanced for their benefit. Particularly when such projects involve contentious practices, such as cutting trees, the removal of favored but non-native species, the use of prescribed burning, or the use of pesticides and herbicides, public unrest can be significant.

4. For example, when working to restore urban bird populations, it may be necessary to restrict pedestrians from certain areas, even if those areas were historically part of a high-use or culturally relevant pathway.

5. I do not mean that suburban and rural projects lack a social layer that must be addressed, but rather that the density of urban areas leads to greater social interaction, which elevates the necessity that all members of the community appreciate, understand, and help implement the project in question.

6. Andrew Light (2000b) discusses some of the dangers of professionalization of restoration, reminding us that restoration has significant democratic potential. The necessity and value of democratic restoration projects is heightened in urban environments where population density is high.

7. This is one of the reasons why Principle #7 calls for community participation at all levels of a project, including needs assessment.

8. The original, hand-written 1973 "recipe" (including suggested seed mixes) for the Seed Grenades and instructions for their use can be viewed at: http://lizchristygarden.org/lcbh_files/seed_bomb.html (accessed 21 July 2010).

9. To read more about NYC's Community Gardens, see the New York City Department of Parks and Recreation site: www.nycgovparks.org (accessed 21 July 2010). To read more about the Green Guerillas, visit their site at: www.greenguerillas.org (accessed 21 July 2010). To read more about the Liz Christy Garden, see www.lizchristygarden.org (accessed 21 July 2010).

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