Youth and Urban Waters Work

Groundwork's Approach to Fostering Environmental Careers among Disadvantaged Youth

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Groundwork USA
EPA Urban Waters Program
National Park Service Rivers, Trails, and Conservation Assistance Program

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Funding from EPA's Urban Waters Program made this report possible, including the documentation of Groundwork USA's experience with developing and delivering youth programs over the last decade.

Over the last 10 years, Groundwork USA and its network of nonprofits have been working to reclaim 20 urban waterways across the country, from the Spicket River in Lawrence, MA, to Chollas Creek in San Diego. Our work centers on communities and neighborhoods that were established alongside the streams, creeks, bays, and tributaries that once served as "highways" of commerce and culture across America. In terms of an approach to urban waters reclamation, our premise is that the renewal of neighborhoods adjacent to these bodies of water and the revitalization of the waterways themselves are one in the same. Indeed, our urban waters endeavors are emblematic of the Groundwork model, which works at the intersection of environmental restoration and community renewal.

"I'm not just recruiting you for Groundwork and our Green Team; I'm recruiting you for a gateway to an entire career."

–Vaughn Perry
Groundwork Anacostia
Green Team Leader

Youth have been central to Groundwork's urban waters reclamation efforts. Across the country over the past decade, Groundwork organizations have worked with nearly 50,000 youth hailing from neighborhoods alongside urban waterways, engaging them in such hands-on, water-oriented activities as fish studies, riverfront park community design processes, greenway trail restoration and maintenance projects, river clean-ups, water quality monitoring, ecological site assessments, invasive plant removal, and more. In some places, youth work led directly to multi-million dollar capital investments in restoring the river and creating new public spaces and parks. As our young people gained skills in advocacy, habitat restoration, and community building, Groundwork began exploring ways in which these skills could lead to careers in the environmental and/or urban waters fields. Through our national Green Team environmental youth development program, we've found that Groundwork youth are truly interested in pursuing this type of work and are eager for resources to help prepare themselves for urban waters-oriented careers.

While exploring these career paths, we also decided to deliberately address the fact that within the Groundwork network as well as within well-respected national environmental organizations and even federal agencies, key staff positions are largely occupied by white, middle-class people far from urban communities. This reality is particularly staggering when juxtaposed with Census figures showing marked increases (and further projected increases) in the number of African American and Latino American citizens, as well as the number of urban dwellers, across the United States.

How can we shift this employment pattern to give largely minority and disadvantaged urban youth a discernible path to employment in environmental fields?

So, the fundamental questions we've asked ourselves, and have attempted to answer in this report, are:

- How can we shift this employment pattern to give largely minority and disadvantaged urban youth a discernible path to employment in environmental fields?
- How can we design and implement youth employment programs that leverage the cultural and urban perspectives of our youth as well as the environmental and community building skills they develop with us?
- How can we facilitate the successful placement of Groundwork youth—and other disadvantaged young people—in environmental, conservation, and urban waters occupations that will allow them to grow into leadership positions within these fields over time?

As we wrestled with these questions, we began to think about what an environmental employment trajectory would look like when developed within a national non-profit organization like Groundwork USA. We also identified the potential barriers that could impede the progress of Green Team graduates on an environmental career path as well as the feasibility of implementing an environmental employment pathway now.

This report is the result of a long-standing relationship between GWUSA and EPA, including a close partnership with EPA's Brownfields Program and its Urban Waters Program. The EPA asked Groundwork USA to explore ideas for establishing a pathway to urban water careers for minority youth. This report is especially timely now given the anticipated growth of the "green economy" in the coming decades as well as the fact that over 40% of the people now holding environmental and urban waters-related positions in the government and public utility sectors will retire in the next five to seven years. This generational shift in our workforce has created an unprecedented opportunity for young people interested in environmental work to move into positions that provide living wages and steady and long-term employment. Groundwork's target youth demographic is increasingly primed for such jobs. Combined with the fact that the federal government has made urban minority recruitment and participation a high priority for the federal workforce in the coming years, the timing for the realization of a real pathway to employment for the youth we serve could not be better.

"The U.S. Conference of Mayors found that every job created in water infrastructure creates over three additional jobs to support that position."

–Local Government Investment in Municipal Water and Sewer Infrastructure: Adding Value to the National Economy (August 2008)

In this report, we:

- Describe the ways in which Groundwork youth have engaged with urban waters;
- Reiterate why diversity is essential to the future of environmental and urban waters work;
- Identify the "ingredients" necessary to promote long-term youth involvement in environmental occupations and urban waters careers;
- Identify potential environmental/urban waters-related occupations for our youth;
- Provide case studies of minority practitioners working in arenas associated with the environment and urban waters; and
- Identify steps we can take to fill existing gaps in the system to make it more likely that minority youth are ready to fill these positions and succeed in environmental fields in the future.

Over the last 12 years, Groundwork non-profits across the nation have employed and trained more than 1,000 youth. Our principal program for serving youth, operating within nearly all Groundwork affiliate sites as either a summer or year-round program, is the Green Team. At its heart, the Green Team program is an intensive and intentionally small (16 youth per site at maximum) leadership program that strongly emphasizes urban environmental restoration, employment skills, hands-on service learning, teamwork, financial literacy and awareness of local and global environmental issues. In these paid positions, youth are engaged as part of a team that is taught how to act responsibly and safely within a work environment, how to be accountable to their colleagues and their employer, and how to take initiative. The experience involves extensive fieldwork, personal journals, public speaking, and participation in workshops that provide a context for the program experience and the work to be carried out.

Work along urban waters infuses almost every Green Team program across the Groundwork Network. Some of the waterways we work on include:

- Spicket, Merrimack, and Mystic Rivers (Massachusetts)
- Saw Mill River (New York)
- Elizabeth River (New Jersey)
- Anacostia River (District of Columbia)
- Kinnickinnic River and Lake Michigan (Wisconsin)
- Trinity River (Texas)
- Bear Creek and Platte River (Colorado)
- Chollas Creek (California)
- Willamette River (Oregon)

In addition, new Groundwork Trusts being established this year will focus efforts on the Mill Creek (Cincinnati, Ohio), the James River (Richmond, Virginia), and the Santa Cruz River (Tucson, Arizona).

Green Team youth have proven pivotal in a number of Groundwork's major urban water endeavors, including:

- Fish studies conducted by Green Team youth that helped support the restoration of habitat along the Saw Mill River in downtown Yonkers, NY, which involved the construction of a $17 million river park and the opening up of the river that had been buried under a parking lot for decades.
- Ecological assessments conducted by Green Team youth on several underutilized sites along the Spicket River in Lawrence, MA, which documented the habitat-oriented value of the waterway and further justified the development of the $8 million Spicket River Greenway—a series of interconnected parks, gardens, and trails being built along this distressed neighborhood tributary.
- Removal of nearly 72,000 pounds of water chestnut from the Mystic River in Somerville, MA by Green Team youth and volunteers that significantly reduced the threat of this invasive plant along heavily used sections of this urban waterway and increased public access to the riverfront.

Ecological assessments conducted by Green Team youth ... documented the habitat-oriented value of the [Spicket River] and further justified the development of the $8 million dollar Spicket River Greenway.

"All the great historic cultures have thriven through the movement of men and institutions and inventions and goods along the natural highway of a great river."

—Historian Lewis Mumford

Most significant milestones of modern history took place by the banks of rivers, and urban waters were central to the establishment and growth of most American cities. The field of urban water restoration essentially came into being because we turned our backs on many of these waterways during the industrial-age in America. We developed infrastructure and land use patterns that relegated rivers to underground culverts and fenced-off ditches situated behind main street storefronts and homes. So began the detachment of the average urban dweller from the river's edge and the abuse and neglect of her bountiful assets, a pattern that continued for nearly a century.

Only in the last twenty to thirty years, in the post-industrial era, did we reconsider the value of urban waters. As Clean Water Act regulations established in the 1970s assured less overt dumping of waste directly into waterways, communities began to reacquaint themselves with the more aesthetically pleasing aspects of rivers, especially in the name of downtown economic development. Legions of small non-profit, community-based organizations along with environmentally engaged citizens often led the charge in this riverine reawakening. They recognize these watersheds and waterways as essential suppliers of habitat, recreation, and serenity in an otherwise harsh urban setting. While such efforts often begin with river cleanups to remove garbage and progress to include periodic water quality monitoring, urban waters reclamation efforts have grown increasingly sophisticated. Over the past 10 years, dozens of multi-year river campaigns have emerged, including everything from grassroots stewardship efforts, to public education initiatives, habitat restoration projects, and larger infrastructure projects –- such as dam removals, daylighted rivers, combined sewer overflow (CSO) removals, de-channelizations, and rain garden and green roof installations.

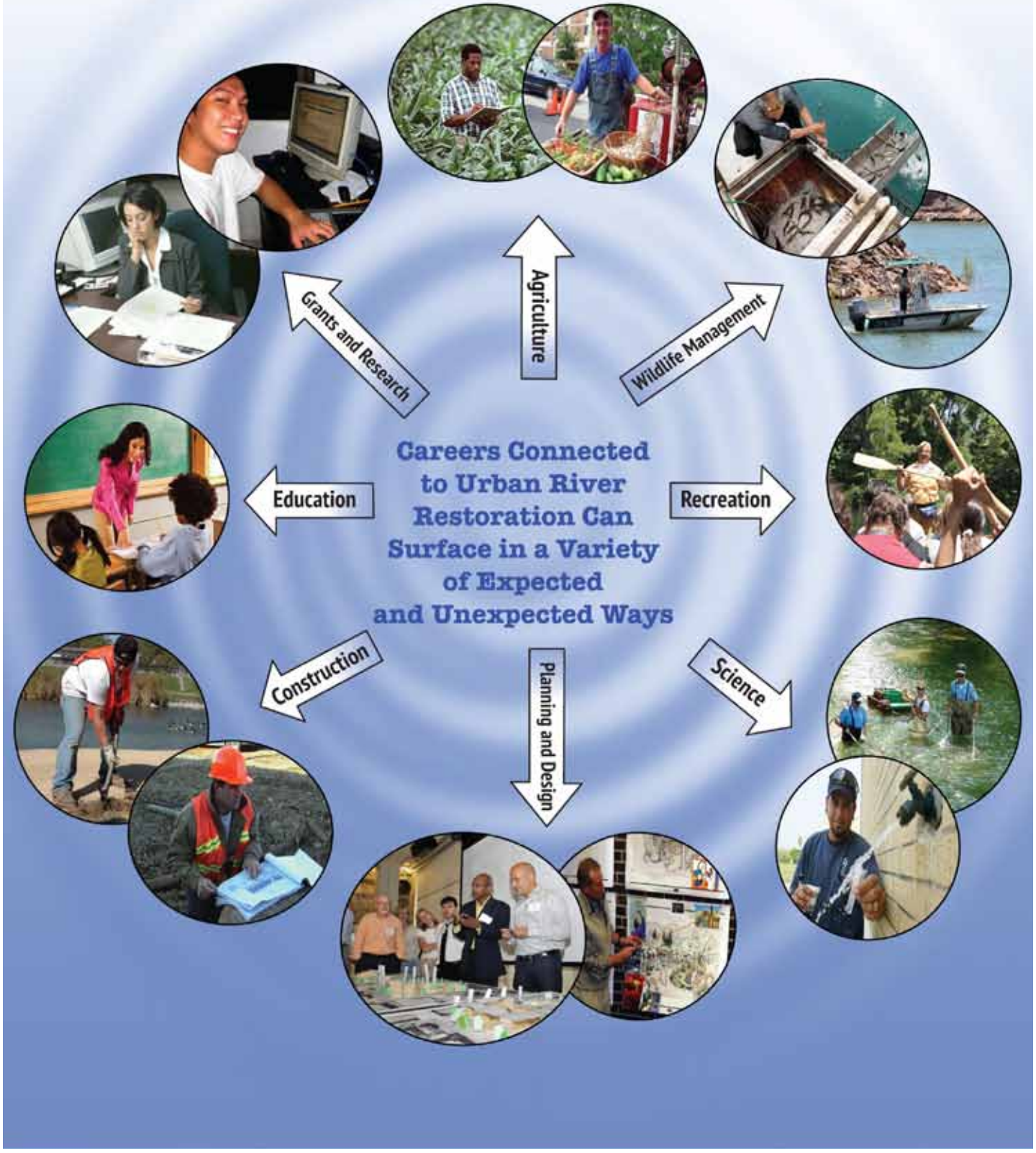
A defining characteristic among these efforts is their holistic nature: these endeavors are aimed not only at reclaiming and restoring urban rivers, but are also strategically designed to achieve multiple related outcomes, such as enhanced health and quality of life among urban dwellers, increased opportunities for in- and along-river transit corridors and recreation, decreased carbon emissions and other greenhouse gases, improved property values in river neighborhoods, and reclaimed vacant riverfront properties (often brownfields) for beneficial community reuse as parks, passive green space, and community gardens. When planned well, residents and stakeholders of all stripes have participated in realizing a vision for the community viewed through the lens of an urban river restoration. Collectively, these efforts have come to define a rapidly growing niche within the sustainable community development field called *urban waters reclamation*. The need for skilled and experienced practitioners in this field is expanding, providing great opportunities for development of a new green economy and jobs for many Americans, including those who do not follow "traditional" academic career paths.

It is clear that there are many ways to work in the arena of urban waters. Some jobs require advanced degrees, while others require only passion and people skills. With ever-greater awareness of the needs of distressed urban waters by government and with more resources than ever before to fund restoration projects, employment opportunities in this field should continue to increase. But, how do we get—and keep—urban youth, especially those from disadvantaged backgrounds, interested in such vocations? We assert that creating deliberate plans, partnerships, and connections to complement well-honed youth development programs will help place young people emerging from those programs on a pathway to successful employment endeavors, with key supports available every step of the way.

"Wide-scale design, construction, and operation of green roofs can result in increased employment opportunities, which can in turn reduce urban unemployment or underemployment. Covering even 1 percent of large buildings in America's medium- to large-sized cities with vegetated roofs could create over 190,000 jobs and provide billions in revenue to suppliers and manufacturers that produce or distribute green-roof related materials. A $10 billion investment in water efficiency projects would produce a total economic output of $25–28 billion and create 150,000 to 220,000 jobs."

—"Banking on Green" Report (ASLA, 2012)

Groundwork USA-Pathways to Employment



Providing moral support to our young people proceeding through the career process will be as important as programmatic support. Anyone who has been involved in the national environmental movement is painfully aware of the lack of diversity in many of its organizations and associated government institutions. As time progresses, and the US population continues to grow, become more diverse, and settle in greater concentrations in the urban areas, the ongoing protection (and possible expansion) of public lands in America will be dependent on whether these environmental organizations can become relevant to more citizens. Marcelo Bonta and Charles Jordan, drawing on research performed by Dorceta Taylor, report that of 158 environmental institutions, "*33 percent of mainstream environmental organizations and 22 percent of government agencies had no people of color on staff*."

" … the environment is not, as some would think, an external playground to be enjoyed by weekend warriors. It is in fact the daily living and breathing space we inhabit."

—Chip Giller

Remaining "relevant" has become an important goal for many within the environmental movement. Having staff members who are themselves reflective of the communities they serve is one way to demonstrate relevancy in any organization. However, this is not simply good public relations. The old model for environmental restoration was to focus on meeting the needs of the *natural world*, oftentimes to the exclusion and even detriment of the people who lived within or in close proximity to the impacted area. Today, there is greater appreciation for the reciprocal relationship between a healthy, restored environment and the equally important needs of those living nearby.

Chip Giller, the founder of the online environmental e-magazine *Grist*, writes that his awareness of this interaction became apparent after he published a series of articles on environmental justice. The series focused on nationwide activists who were dealing with conservation issues at the local level. Giller writes:

> *These were people fighting against pollution and development and resource abuses. And they were also fighting for something: their health, their families, their homes, and their way of life. These stories made it clear to me … that the environment is not, as some would think, an external playground to be enjoyed by weekend warriors. It is in fact the daily living and breathing space we inhabit.*

Involving community members in local environmental restoration is not enough. We must also make it personal for them by directly engaging them in the selection, planning, and completion of projects in their neighborhoods. This is especially important in the face of environmental injustice, which most often happens in heavily burdened, poverty-stricken places that also face the compounding challenges of disinvestment, blight, unemployment, and population transience, among others. Unfortunately, these are often the same communities inhabited by people of color. If we agree that meaningful and lasting solutions for achieving

environmental justice must arise from within the communities that environmentalists serve (rather than being imposed by outsiders less intimately familiar with the locale, its people, and its norms), engaging the actual members of such communities in meaningful ways is crucial.

… the environmental movement has tended to overlook the tireless work of activists of color (as well as women of all colors) who throughout American history have organized for neighborhood revitalization.

—Paraphrased from Dorceta Taylor, *The Environment and the People in American Cities: 1600s-1900s Disorder, Inequality and Social Change.*

This begs an important question: if minority communities are most often the ones burdened by environmental degradation, why aren't there more minorities working within environmental organizations? The argument has been that environmental issues often fall to the back burner for economically disadvantaged people. If you're struggling to put food on the table, it is argued, you have less time to worry about the vacant lot next door or the polluted stream five blocks away. However, this argument does not hold up under closer scrutiny. Minorities are just as concerned about the environment as Caucasians. Bonta and Jordan document that:

> *An exit poll for a 2002 California $2.6 billion bond issue for water quality enhancement and open space protection revealed that 77% of Blacks, 74% of Latinos, and 60% of Asians (as opposed to 56% of Whites) voted 'yes'.*

The researchers also point out that Latinos are more likely to support tax increases for the protection of wildlife habitat than the general population (77% to 65%). In her book *The Environment and the People in American Cities: 1600s-1900s Disorder, Inequality and Social Change* (Duke University Press 2009), Dorceta Taylor argues that due to a bias of looking at nature as being "out there" rather than as an intrinsic part of our cities, the environmental movement has tended to overlook the tireless work of activists of color (as well as women of all colors) who throughout American history have organized for neighborhood revitalization. Taylor argues that many environmentalists have failed to appreciate the work of minority environmental activities, that is, until they begin to see how restoration work in urban areas is essential to the success of the broader environmental efforts –- a connection not fully appreciated until now.

Perhaps the diversity problem for legacy environmental organizations is not one of interest, but rather one of access. The question is not "how do we get people of color more concerned about the environment" as it seems clear they already are, but rather, "what's stopping people of color from getting involved in the so-called 'mainstream' environmental movement."

Disparities in early science education, differences in school funding for science programs, and access to good teachers and laboratory equipment have been blamed for some of this trend, and educators are exploring several different options, including development of STEM (Science, Technology, Engineering and Mathematics) curricula and STEM magnet schools in urban neighborhoods, to respond to these disparities and close this gap. Others suggest the disparity may not simply be attributable to early preparation and aptitude, but to experience as well. Kathy Blaha, Vice President for the Trust for Public Land, argues:

> *You can't learn how to be an environmental professional in the classroom. You must get good experiences while you are in school, and that means internships.*

Getting youth outdoors and involved in meaningful environmental restoration work, especially gainful, paying employment within their own neighborhoods, may be one of the best ways to bolster an interest in environmental careers. Yet in areas where environmental degradation and overdevelopment is such that it hampers student interactions with local habitats (precisely the areas often inhabited by people of color), finding places for such "good experiences" is problematic. A good model, and the one we are advocating here, would be one built upon getting youth out into more pristine environments for inspiration, while also creating opportunities for those same youth to engage on long-term restoration projects, which they help shape, within their own communities.

In order to build a comprehensive environmental restoration movement, we all must address the diversity gap. Successfully restoring urban rivers depends not only on our ability to meet the needs of riparian species, but increasingly of the humans who dwell adjacent to the river's edge. To be successful, environmental organizations must be seen as relevant to the people who live in these areas, and relevancy depends upon the organizations ability to fully engage and collaborate with others in the process. If they want to fully draw upon a community's strength, resources, and ingenuity to face its challenges, environmental organizations must be, as Bryan Garcia of Yale University's Center for Business and the Environment put it,

> *capable of communicating in disparate ways across multiple disciplines, in different languages and among diverse cultures.*

That is, they must be as diverse as the communities they serve.

Unless we make conscientious efforts to engage and recruit minorities, especially minority youth, to participate in the greening of our nation as citizens and employees alike, the status quo isn't likely to change.

But we can't simply wait for people of color to answer the invitation to join us in our efforts, especially if we aren't actively working to join them in theirs. Unless we make conscientious efforts to engage and recruit minorities, especially minority youth, to participate in the greening of our nation as citizens and employees alike, the status quo isn't likely to change. What is needed are opportunities, deliberately planned by and for disadvantaged, minority youth, so that those same young people are enabled to plug into and create positive change by their own hands. A variety of hands-on experiences—as volunteers, as program participants, as apprentices, and as employees—that meet diverse and disadvantaged youth where they are would also provide them an equal opportunity to glimpse and define what might be in the future. A successful pathway to employment program must begin there.

It is important, too, to reframe how we define and think about diversity within the environmental movement. Indeed, diverse, disadvantaged and marginalized populations of all kinds, whether urban or rural-dwelling, young or old, need to feel greater connections to the great outdoors and the wellbeing of our wider world. Across any cultural lines we might choose, society as a whole needs to cultivate a greater awareness of the interplay between our actions and their associated environmental consequences/outcomes.

"Develop a workforce that values diversity and an inclusive work environment so that we can recruit and retain diverse employees and respond to the needs of the American public."

—Jon Jarvis, NPS Director, A Call to Action report.

Echoing this sentiment, NPS Director Jon Jarvis, in his *A Call to Action* report, highlights his agency's priority focus on diversifying its workforce in a variety of ways—generationally, ethnically, and geographically speaking:

…Create deep connections between a younger generation and parks through a series of diverse park experiences. To accomplish this we will collaborate with education partners and youth organizations to create a pathway to employment with the NPS, with a focus on diversifying the workforce. We will involve at least 10,000 youth each year in a multi-year progression of experiences from education programs to internship/volunteer opportunities to employment.

Recruit and retain a workforce that reflects the diversity of the nation, from entry level employees to senior leaders.

Recruit candidates to provide a source of diverse, motivated, and well- trained employees that reflect local communities by expanding … recruitment programs to all seven NPS Regions and to additional disciplines beyond visitor and resource protection.

Develop a workforce that values diversity and an inclusive work environment so that we can recruit and retain diverse employees and respond to the needs of the American public.

Enhance the connection of densely populated, diverse communities to parks, greenways, trails, and waterways to improve close-to-home recreation and natural resources conservation. We will achieve this through a proactive Rivers, Trails, and Conservation Assistance Program that mobilizes citizens in support of improved access to outdoor areas in at least 50 of the communities nationwide with the least access to parks.

Improve urban residents' knowledge of and access to outdoor and cultural experiences close to home by ensuring that every national park located in an urban area has a well-promoted physical connection to the public transportation system or to a pedestrian/bicycle path.

In diversifying the environmental movement and broadening the minds of all Americans with increased exposure to and experiences within nature, we can cultivate a more environmentally attuned, more actively engaged citizenry who feel empowered to change the world—whether it be preserving a nationally significant historic site or reclaiming an underutilized vacant lot in the neighborhood. In this way, we can broaden the environmental movement to encompass every aspect of our collective livelihood and thereby create a more just, equitable, and sustainable world.

Providing young people with compelling points of entry into the environmental/urban waters arena is key to ensuring their lasting engagement in it, whether as a practitioner or an engaged citizen. According to research, a bad work experience or internship in the early years, when career identity is being formed, has an unusually strong effect on career direction and work outcomes. In other words, when we have youth in our programs, it is critical that we help them make the most of the experience. After a decade of working with diverse and disadvantaged youth in our environmental leadership program, learning by trial and error, and observing other models, these are the lessons we have gleaned about delivering great youth programming.

1. Forming an initial relationship is ideal: At Groundwork, we are often involved with youth in their early years in the neighborhoods where we work, whether at a community garden, at a local school, during a community park design meeting, or during a river clean up. Through these activities, we build a relationship with the young person, their families, and their neighborhoods, fostering their interest and involvement over time. Ideally, they apply and then move into our Green Team program (for youth aged 14-18), allowing them to build on previous work with us and within their community. Thus, some of the youth involved in our programs are not coming "out of the blue" to get a job during the high school years, but rather are brought along as a result of ongoing involvement and a working relationship based on community revitalization and environmental restoration.

2. In-depth and intimate is good: The quality of the youth program experience is directly correlated to the number of youth involved. We have designed our program to serve fewer youth per summer (usually a maximum of 16 members per team), but do so in a more in-depth way. Prioritizing quality over quantity, while at times challenging to justify to funders who want to impact "thousands of youth" (the way a youth-serving organization like Boys and Girls Club might), allows us to build relationships with each young person, foster team cohesion and mutual accountability, fit everyone into one or two vans, and arrive at work sites as a nimble crew. The limitation to this approach is that we cannot serve as many youth as apply. Moreover, half the team (8 out of 16) are typically returnees, a key element in the model that strengthens mentoring and bolsters leadership, conservation, and community-building skills.

3. Screening is critical: While we would like to hire youth at random, or provide a job to whomever applies, we have found that the highest quality experiences are among youth who are carefully vetted first. This process occurs before the program starts, and involves a formal application process, the distribution of the program outline and handbook, a formal interview for the "job," which include a conversation about expectations, and an assessment of the youth's interest in the field, community experience and more. If we have worked with the young person in other programs or in a volunteer capacity previous to their application, this assessment is more easily done, of course.

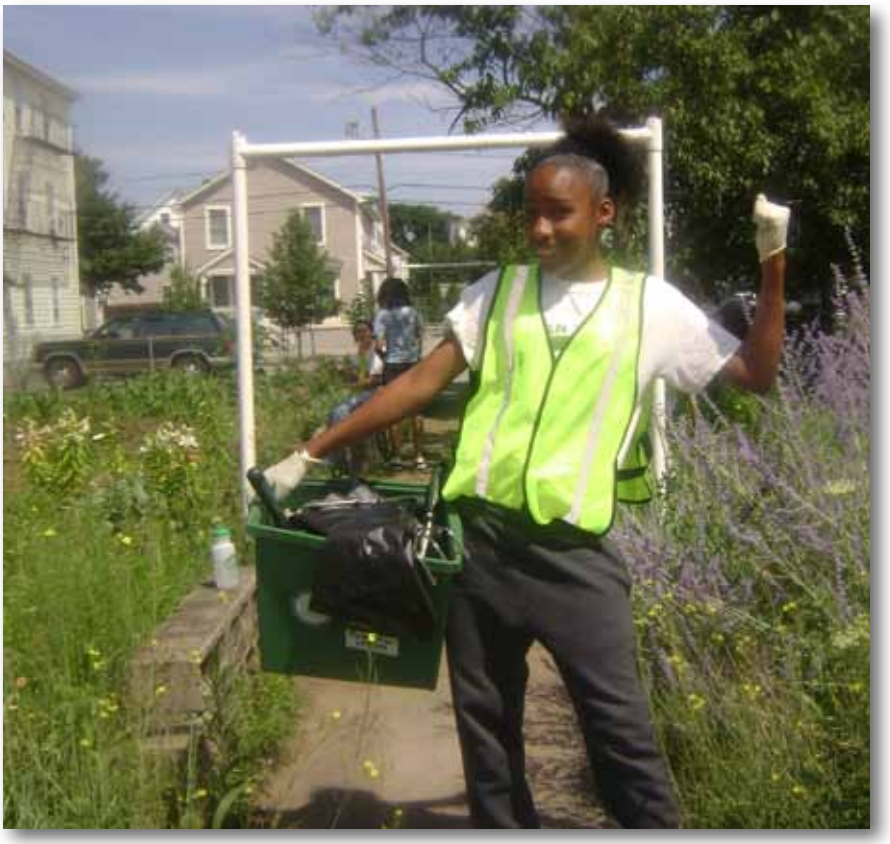
"During my first community service project with Groundwork … one of the lady's from the project took me to her garden bed and showed me a watermelon she had grown. I remember thinking 'this is awesome.' It was like 'wow, I can't believe this woman is growing watermelons in the projects.' This experience really captured me."

—Ronald Leaks, Program Coordinator, Groundwork Somerville, Interview for this report.

We need to cultivate the understanding that "the environment" exists as a resource to be protected within the youths' urban community—as opposed to the view of the environment as something "out there."

4. Pay the youth: We treat both the summer youth program and the year-round youth program as a real job and expect youth to treat it that way as well. It is true that many young people are willing to take an unpaid internship if they believe the experience will benefit them in some future job, to gain additional skills, as well as to make a resume look more comprehensive. In the current economy, sometimes an unpaid internship is inevitable. However, for youth from disadvantaged backgrounds, the "luxury" of an unpaid internship may not be feasible, especially if they are paying for their own education, or if their family depends upon the additional household income the young person might provide. Even if a youth is drawn to an environmental internship, they may opt for a paying job. Being paid means the job comes with real expectations, responsibilities, and accountability. Having a steady work environment in high school has been shown to be a factor in fostering stable work habits. According to research, youth who maintain regular employment are more likely to stick with their job in the future.

5. Keep it local: At Groundwork, most of our work, including that of the Green Team, is focused on the urban communities in which we work. This local focus is important for several reasons. We need to cultivate the understanding that "the environment" exists as a resource to be protected within the youths' urban community—as opposed to the view of the environment as something "out there." Also, we must capitalize on the talents and assets urban youth have to offer our distressed urban environments.



Second, Groundwork puts an emphasis on instilling community-building skills in our Green Team members. The reason for this is that, for urban environmentalists, much of the work we do is in consideration and in collaboration with other residents. Learning how to use a pickmatic skillfully isn't enough to prepare you for working with neighbors on a rain garden or drainage project. Being effective listeners and communicators, understanding the dynamics of politics and community groups, and working collaboratively with city officials and other nonprofits are *de rigueur* for most urban environmentalists, and to be successful and happy in their work, learning these skills are necessary as well.

6. Provide role models: Introducing youth to successful environmental professionals from backgrounds similar to their own enables them to believe that, "I could do that, too." Many minority environmentalists have indicated that they chose this vocation because of conversations or interactions they had with a well-established practitioner of color to whom they could relate. As a way to foster such interactions we have developed a series of case studies focused on environmental/urban waters workers and their journeys to their current job. (See Chapter 8)

7. Encourage reflection: We strongly encourage Groundwork trusts to include journaling as a part of the Green Team experience. We ask Green Team members to reflect on the day's project and to share their thoughts with the group. This allows the supervisor to monitor the youth's response to new experiences and the evolution of a student's thinking about themselves and their environment. While pioneer educator John Dewey advocated for experience when working with youth, he also stated that periods of reflection were needed to help the young people make sense of their experiences. Through journals, we provide a platform for youth to share their thoughts and feelings about their work so that we can develop better ways of meeting their needs and delivering a successful internship.

8. Harness the power of the peer group: Educational opportunities alone don't dictate career choices. Youth are also highly influenced by their peers and experience. One of the leading researchers in vocational development and career choice was Dr. Donald Super, formerly of the National Institute for Career Education and Counseling. Dr. Super's research and articles in peer-reviewed journals spans an amazing 40 years, and he was highly influential in the study of career development. The central premise of his life's work is that "vocation" choice is an evolving process that starts at a young age. If we want to encourage youth to consider careers in environmental work, we have to consider not only their early educational preparation but other types of experiences as well, especially field experiences.

If we want to encourage youth to consider careers in environmental work, we have to consider not only their early educational preparation but other types of experiences as well, especially field experiences.

The goal is to introduce children to the natural world at an early age and to continue to deepen this engagement in age appropriate ways in their teen and young adult years. These early positive experiences with nature represent the first point of entry to future careers in environmental fields.

Early Childhood Experiences: For many people, experiences with nature in the pre-teen years have had a huge impact on developing passion for environmental concerns. The experiences we have as young children, whether playing in a creek, visiting a park, going to the beach, skiing a mountain, or skating on a lake, become memories that never leave us. As young children, we are especially connected on an emotional level to the natural world. Three of the five professionals interviewed for this report had those kinds of transformative experiences with nature early on in their lives. If such experiences are encouraged and led by family members ("I always went fishing with my dad," or "my parents took me camping every summer") then they can have an especially powerful impact on identity development and future career choices.

Nonprofit organizations such as Groundwork Trusts help foster this initial connection to the environment among young children through a variety of hands-on experiences, often alongside parents, other family members, teachers, and friends. While only a handful of Groundwork trusts develop programs that specifically engage young children, all trusts do offer countless family-friendly experiences that engage these youngsters alongside their siblings, peers, and family members. Such experiences can include:

- Engagement in **schoolyard gardening** programs featuring both in-classroom and in-garden curricula, as well as possible connections to school food services' use of school garden produce for taste tests and inclusion in featured menu recipes.
- Engagement in planting, growing, and harvesting fruits and vegetables in **community gardens** alongside family and friends.
- Participation in **stewardship and service learning experiences** such as planting trees and painting environmentally-themed murals.
- Participation in minimally-programmed **exploratory activities** in natural settings that allow children to get dirty or muddy, utilize their imagination, and experience a sense of wonder in the great outdoors

However, to truly create a lasting imprint of environmental awareness and appreciation, we need to nurture youth along with ongoing opportunities for hands-on immersion in nature in the years following these initial experiences. Otherwise, they may remain only fond memories. Examples of continuing points of entry are detailed below.

URBAN WATERS PATHWAYS TO EMPLOYMENT

COLLEGE AND PROFESSIONAL

POST-GRAD (BA or MA) JOB PLACEMENT

- Watershed Planner • Aquatic Biologist • Water Conservation Manager
- Environmental Engineer • Wetlands Scientist

CLASS PROJECT

- Park Design • Water Quality Testing • Fish Study

COLLEGE INTERNSHIPS & SUMMER OPPORTUNITIES

- EPA • NPS • USFS • USFWS • Environmental Non-profit • Municipal Government

VOCATIONAL AND POST HIGH SCHOOL

TRAINING PROGRAM

- Youth Conservation Corps
- Forest Firefighter • AmeriCorps/NCCC

NON-PROFIT OR LOCAL GOVERNMENT

- Urban landscaping corps
- Water department trainee

CERTIFICATE PROGRAM

- Brownfield Technician

MIDDLE AND HIGH SCHOOL YEARS

ADVANCED WORK AND CAREER AWARENESS

- College programs • EPA Career Centers
- Public land internships • Research projects for non-profits

GROUP AND PEER DEVELOPMENT

- Youth leadership and team-building activities

WORK AND TRAINING CONTEXTUALIZED

- Summer field experience

EARLY YEARS AGES 5 TO 10

FAMILY ENGAGEMENT IN NEIGHBORHOOD PROJECTS

- Volunteer tree planting, River clean-up, Trail building

SCHOOL BASED CAMPS AND CLUBS

- STEM enrichment • Hands-on environmental education

EARLY EXPERIENCES IN NATURE WITH FAMILY AND FRIENDS

- Gardening, hiking, canoeing, camping

… the Green Team helps high school-aged students more fully develop their awareness, confidence, and leadership skills in response to the pressing environmental issues facing their communities.

High School Years: This period of a young person's life is a crucial time of identity development and employment choice formation. If you ask an 8-year old what she is going to do with her life, she might say she is going to play shortstop for the Yankees. If you ask a 15 year old the same question, she would have a more grounded sense of her own potential and what she perceives as possible. With this in mind, the teenage years comprise a target time period during which Groundwork aims to engage young people in its Green Team program and introduce them to opportunities in environmental fields. By providing hands-on opportunities to pursue their curiosity about the environment, the Green Team helps high school-aged students more fully develop their awareness, confidence, and leadership skills in response to the pressing environmental issues facing their communities.

Groundwork has identified five key components, of our Green Team youth program that promote strong and lasting personal identification with environmental issues and careers.

- In-depth, high quality, hands-on experiences for youth in their community and at National Parks
- Strong emphasis on group interaction, peer cohesion, and mutual accountability
- Teaching and reinforcing in the youth the reasons why their work is relevant
- Fostering environmental identity formation
- Providing advanced work opportunities and career path awareness

In addition to the Green Team experience, teenagers in Groundwork communities can benefit from numerous opportunities for plugging into environmental, conservationist, urban waters, and service learning-oriented undertakings that help them give back to and make positive changes in their neighborhood. Such events include participation as vocal citizens, earnest volunteers, stipend-supported employees, or interns in:

- River cleanups
- Invasive species removal projects
- Urban tree canopy surveys
- Park and playground safety assessments
- Walking audits
- Health impact assessments
- Skate park design planning projects
- Water quality monitoring
- Opportunities to attend and speak at public hearings

Beyond High School (But Not College): This particular segment of the youth population is a relatively new target group for Groundwork but one that is well worth the effort of diligent program planning. In light of the continued lack of accessible jobs and job-training opportunities for these young people—who come from areas where opportunities are limited and a college education is not a given —several Groundwork Trusts are crafting programs that respond to this group in a variety of ways. Such efforts capitalize on this population's unique position as youthful urban dwellers with great potential for appreciating the important environmental and urban waters assets present in neighborhoods like theirs.

While these are job-training programs first and foremost, they are in the best sense also "life coaching" opportunities that meet trainees where they are in life with "wrap-around" support that help trainees navigate the job search process and help them secure meaningful and relevant jobs, living wages, and opportunities for career growth and learning over time. In sum, these programs are designed to seize an emerging nationwide opportunity for our country's most marginalized populations to achieve gainful and steady employment in positions that truly make a difference in the world.

One example of Groundwork-led program for young adults who are not on a college track is the "Brownfields/Environmental Job Training Program." Groundwork Providence presently operates this program, which is designed to strengthen the capacity of Rhode Island's landscaping professionals to implement stormwater best management practices (BMPs), train unemployed residents from environmental justice communities for green jobs, and give these two groups the opportunity to work side-by-side on demonstration projects that improve the stormwater performance of affordable housing properties in Environmental Justice communities. The following outputs are anticipated:

a. Two cycles of a 6-week stormwater management training (serving at least 30 residents of environmental justice communities),

b. Four cycles of a two-day advanced stormwater management training (targeting graduates of the initial training and at least 20 landscaping professionals),

c. Four demonstration projects executed by training graduates working alongside landscaping professionals, and

d. Installation of educational signage at demonstration sites.

Anticipated outcomes include:

a. improved access to new 'green jobs' in stormwater management for residents of EJ communities,

b. improved stormwater management skills for working landscaping professionals,

c. improved stormwater management at four sites,

d. the creation of four demonstration projects which will serve as learning laboratories for future trainings,

e. an increase in the number of residential stormwater projects completed by training participants, and

f. a reduction in the amount of stormwater run-off entering the urban water system.

Beyond High School (College Bound): Many of our youth go on to college. The attainment of bachelor and graduate degrees opens up a whole other array of jobs in environmental/urban waters positions, as evidenced by the interviews with Benita Best-Wong and Carla Friedrich in particular. Depending on interests and academic strengths, a student considering an environmental career can major/minor (or combine studies) in chemistry, biology, environmental studies, public affairs, economics, public health, social sciences, and urban planning, among others. Potential environmental careers are available in academia; city, state, and federal agencies; numerous non-profit organizations; and in businesses and industries interested in sustainable production and practices. The list of existing environmental careers is far too great to enumerate, but include scientific research and analysis of natural resources; executive directors, program officers, fundraisers, media relations officers, or grant writers in environmental non-profit organizations; policy makers and policy researchers at the local, state, national, and international levels; lobbyists; habitat restoration consultants; green urban planners, and park administrators, among many, many others.

What youth programs such as Groundwork's Green Team need to do in this respect is help our Green Team members make the most of both their college search and their college careers. Specific way we can do this are:

- Assemble a number of current job announcements for environmental positions so that students are aware at the get go of the array of opportunities and the credentials they will need to pursue positions that interest to them.
- Create and make available to students a list of colleges—both national and local (as many students will not have the resources to go far from home) with environmental studies majors and/or departments.
- Emphasize the need for students to work closely with their academic advisors to identify the courses they should take to achieve their goals as well as to identify internships in the fields of interest.
- Encourage students to meet with their professors for academic advice, recommendations, and information about internships.
- Encourage Green Team graduates to stay in touch with Groundwork for guidance, support, connections to environmental professionals, and internship positions.

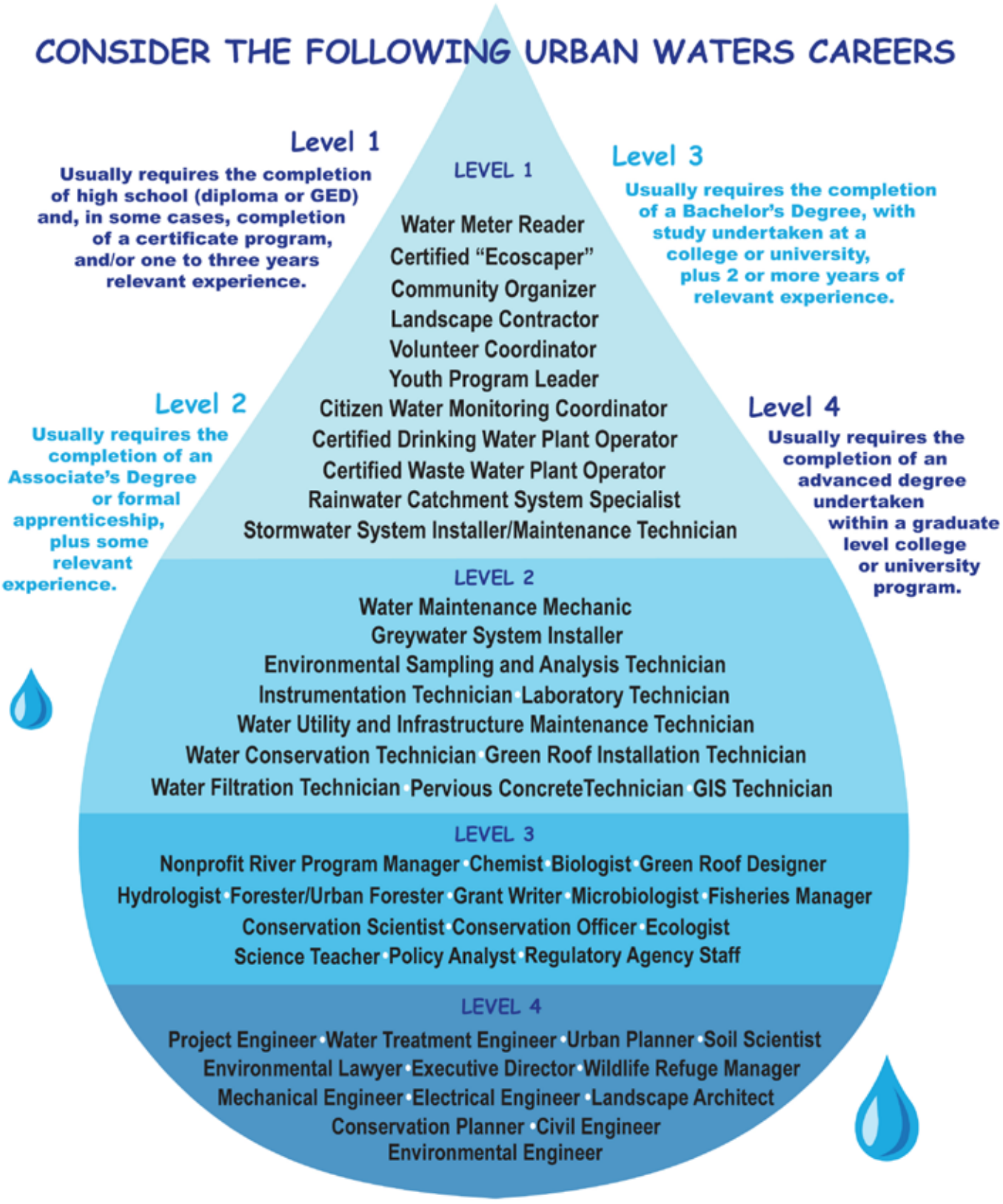
In these ways, Groundwork remains a constant support in the lives of these young people who have not always had the same opportunities (academic tutoring, demanding schools, job connections, economic security, access to camps and extracurricular lessons, etc.) as many of their more affluent counterparts.

"Talk to folks in the environmental field. Get an internship—paid or unpaid—either with an environmental non-profit or a governmental organization. Learn about "In Your Own Backyard" environmentalism, volunteer with a local watershed group and pursue your environmental interest in college and graduate school."

—Benita Best-Wong, Deputy Director, EPA Office of Wetlands, Oceans, and Watersheds, Interview for this report.

WANT TO MAKE A DIFFERENCE?

CONSIDER THE FOLLOWING URBAN WATERS CAREERS



As the baby boomer generation nears retirement in unprecedented numbers, the scale of turnover in environmental, conservation, and urban waters-oriented jobs requiring training or apprenticeship (as opposed to college or advanced degrees) is immense. Coupled with the burgeoning green economy and anticipated investments in green infrastructure replacements and retrofits, the scale of opportunity has never been greater for long-marginalized populations. Consider the following citations:

> *Evaluation of the NPS' current employee stock shows that there are a large number of employees (ages 40-54) who may retire in the coming years with close to 40% of the management and engineering employees eligible to retire in 2007,* (Memo from Lily Madjus to National Park Service Director, October 2008).

Furthermore,

> *… the NPS hasn't been successful in the recruitment of diverse demographic groups in the past. Thus, it should include in its plan a goal of increasing recruitment of employees from different ethnic groups, women, people with disabilities and immigrants* (Memo, 2008).

"… the NPS hasn't been successful in the recruitment of diverse demographic groups in the past. Thus, it should include in its plan a goal of increasing recruitment of employees from different ethnic groups, women, people with disabilities and immigrants."

Memo, 2008

As highlighted in NPS Director John Jarvis' *A Call to Action*, it is crucial to use this large-scale labor transition as a lever for diversifying the gender, race, and ethnicity of the workforce in the fields of environment, conservation, recreation (and, by extension, urban waters). There has never been a greater opportunity to connect underserved and marginalized citizens with steady jobs with relatively low barriers to entry, particularly when juxtaposed with current statistics illustrating the current era as the longest period of high unemployment (particularly more acute for long-marginalized populations) since the Great Depression.

"… 'About 40% of our workforce is retiring in the next 10 years. The impact of the recession may delay some retirements, but people of retirement age aren't getting any younger, and when the economy does recover we will need a new workforce to continue to deliver water services.'"

The Workforce Gap, 2010.

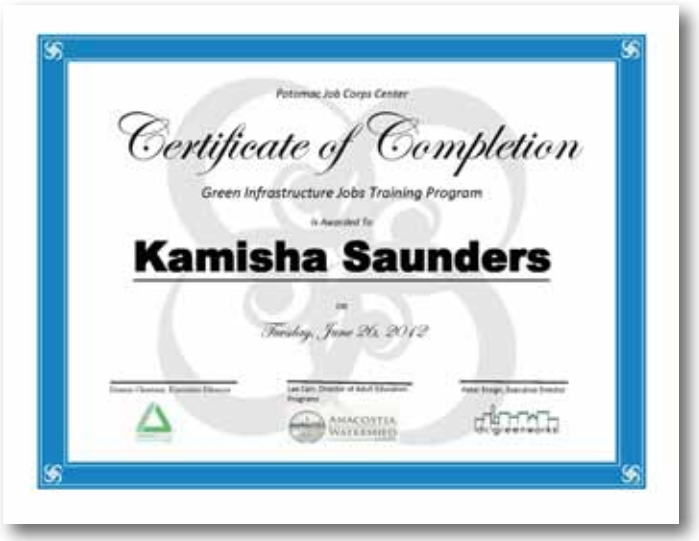
The water industry—including drinking water, wastewater, and stormwater management—faces similar workforce transition challenges:

> … *'About 40% of our workforce is retiring in the next 10 years. The impact of the recession may delay some retirements, but people of retirement age aren't getting any younger, and when the economy does recover we will need a new workforce to continue to deliver water services.' In a study done by the AWWA and the Water Environment Federation (WEF) Alexandria, VA, the highest level of need for non-administrative employees was in the area of certified plant operators in both drinking and wastewater plants,* (The Workforce Gap, 2010).

Finally, the green infrastructure industry anticipates a significant opportunity for new job growth in coming years as green roofs and other best management practices (BMPs) are designed for and installed on municipal buildings and privately owned properties alike:

> *Covering even 1 percent of large buildings in America's medium to large- sized cities with vegetated roofs could create over 190,000 jobs and provide billions in revenue to suppliers and manufacturers that produce or distribute green-roof related materials. A $10 billion investment in water efficiency projects would produce a total economic output of $25–28 billion and create 150,000 to 220,000 jobs. Through collaborative job training and placement programs, these new jobs could further stimulate the local economy,* (Banking on Green, 2012).

Having been documented in news cycle after news cycle, speculation about the exponential increase in the number of jobs that will appear with the blossoming of the new "green economy" has run rampant in recent times. However, even leaving the green infrastructure industry aside, there appears to be a significant opportunity for young people with limited access to post-secondary educational pursuits to attain good-paying jobs in the environmental/urban waters industry. With these concrete trends and emerging opportunities in mind, it is important for us to deliberately plan and institutionalize links between the youth program experiences we offer and the jobs that could result from those experiences. It is our responsibility to help the young people in our nation's most marginalized communities to not only gain experience, exposure, understanding, and appreciation for urban environmental and urban waters concerns, but also to connect them to jobs that might in turn offer greater access to wealth and opportunity while also offering a career that enables them to truly contribute positively and sustainably to the world around them.



GROUNDWORK CAREER PATHWAY EXAMPLES

SCENARIO #1

2007 – High school sophomore volunteer at the Groundwork-organized local river cleanup (recruited by his Biology teacher for extra credit)

2008 – High school junior repeat volunteer at the local river cleanup

2008 – Groundwork Green Team member (senior year high school)

2009 – Graduation; summer job on local Landscaping Job Corps Team

2009 – Attends local community college; plans to transfer to 4-year college to become a teacher

2010 – Returns to local river cleanup as volunteer; later recruits his students as volunteers

SCENARIO #2

2007 – Junior leader of schoolyard gardening program (8th grade)

2008 – Groundwork Green Team member (freshman year high school)

2009 – Repeat Groundwork Green Team member (sophomore year high school)

2010 – Summer intern at EPA Regional Lab

2010 – Groundwork National Park Preserver team member (junior year high school)

2011 – Summer job at EPA Regional Office

2011 – Green Team Assistant Team Leader (senior year high school)

2012 – Attends small liberal arts college majoring in Environmental Engineering

2014 – Returns to Groundwork Green Team as a guest speaker about college readiness

2016 – Graduates with BS in Environmental Engineering, secures job at engineering firm conducting lab analysis of brownfield sites' contaminated soils

A critical factor in a young person's career choice is the presence of people within a given profession from racial and cultural backgrounds like his/her own. Groundwork youth and staff interviewed five people of color, with very different life experiences, in occupations related to urban waters, conservation, and the environment to find out about the path that led them to their current positions.

Benita Best-Wong

Benita Best-Wong is the Deputy Director of The EPA's Office of Wetlands, Oceans, and Watersheds (OWOW). She has both administrative and policy responsibilities. In an office with over 130 staff members, she is involved in OWOW budgeting and human resource issues, and she oversees a number of data systems pertaining water monitoring nationwide. Benita is also deeply engaged in some of the most complex and important water issues facing our nation. As she and her staff research and develop policies, guidelines, and protocols for coastal regions, rivers and streams, lakes, watersheds, and wetlands, she has to balance the reality of modern life and industry on the one hand with the health of the environment and our need for water that's safe to drink, swim in, and enjoy on the other. For instance, OWOW works with states to develop and implement monitoring strategies that assess the quality of state waters and inform the development of water quality management programs to restore and protect those waters. Benita's office also works closely with 28 nationally significant estuary programs (an estuary is where fresh water streams meet the sea) across the country to develop plans to safeguard water quality and habitats within these areas. In addition, she is also very involved in policies that regulate the discharge of waste (human and industrial) into the ocean. What constitutes a "wetland" (ie marshes, bogs, swamps) is another huge "hot-button" topic OWOW must address. It's an important question that Benita grapples with because of its great implications. If a particular marsh, for instance, is deemed a water body, then it is protected under the Clean Water act of 1973. However, if it is not classified as a water body, industries can more freely fill it in with waste and debris, possibly threatening or destroying the plant and animal life that depends on it and citizens' ability to enjoy and learn from these habitats.

To do her job well, Benita has to talk to and balance the needs of a lot of groups with competing interests; keep up on current scientific, economic, and health research focused on water quality and aquatic habitats; and synthesize this disparate information as she develops and makes recommendations to both keep our waters safe and our economy strong.

Interview

What was the environment like where you grew up and how did this influence you?
I grew up in Albany, New York, which had a population of about 100,000 people in the 1980s when I lived there. Even though I lived in an urban area, the city was full of large parks and wooded areas, and I was never very far from the rivers and mountains around the city. My friends and I spent a lot of time walking or riding our bikes around Albany. We could walk down to the Hudson River from our school and many of my friends lived along the river. Nature was a given, a part of my everyday experience, which we just took for granted. Also in the summer, my parents took us to Lake George and Saratoga Springs. It wasn't that we went to these places to hike or boat necessarily. We went to see shows and visit the amusement park, but we were always surrounded by nature.

How did you become interested in environmental issues?
I really was not interested in environmental issues before college. I started college at Georgetown with the goal of becoming a doctor, but after taking biology, I realized that I couldn't deal with cadavers. I really enjoyed my chemistry courses but wasn't sure what I could do with that. My chemistry advisor suggested that I take a year off before heading off to graduate school to look into ways to apply my interests in environmental work. I got a job working

with a consulting firm that contracted with the Department of Defense to safely dispose of chemicals they held in their facilities. I learned a great deal about environmental laws in this position. After the firm lost its Defense contract, I got a position with the EPA, and it was really there that I gained a true appreciation for nature. I worked for 9 years in EPA Region 2 as a permit writer for companies discharging waste water in Puerto Rico. I then moved to EPA headquarters in DC where I've worked for the past 12 years.

What advice would you give a young person interested in pursuing an environmental career?
Talk to folks in the environmental field. Get an internship – paid or unpaid – either with an environmental nonprofit or a governmental organization. Learn about "In Your Own Backyard" environmentalism, volunteer with a local watershed group and pursue your environmental interest in college and graduate school. I went to college and then picked up skills on the job. That is not enough anymore. If you really want to advance in the environmental field, you need to have advanced degrees and be continuously learning.

Dennis Chestnut

What is your job and what do you do? I am the Executive Director of Groundwork Anacostia. We work with residents to improve the environment in our community. As head of a small nonprofit, I get involved in every aspect of the organization. I manage staff; attend meetings with community groups, local politicians, and funders; and write grant proposals to fund our projects. I also prepare budgets and reports. The best part of my job is getting out of the office and working outdoors with community members to identify problems, plan, and organize projects – like the Deanwood Learning Center, where we worked to build garden boxes; plant trees, shrubs and flowers; and install a rain garden. I get a wonderful sense of accomplishment when we complete a visible project that enhances our community.

What was the environment like where you grew up? The area where I grew up was considered semi-rural even though it was located in an urban city. My neighborhood was near the Anacostia River, near streams and creeks, and the area was very wooded. You could say it had an abundance of urban forests. Even with all its green space and natural resources, my community was still one of the most underserved sections of DC in terms of city services and poverty. Still, it was a wonderful place to grow up, and I feel that growing up where I did contributed to why I care so much for nature and the outdoors.

As a child, were you familiar with nature and did you spend much time outdoors? Yes to both questions. As a child I spent most of my waking hours outdoors. And since the area had such an abundance of natural spaces and resources, it was very familiar to me. Every day, I climbed trees, picked and ate the fruit and berries that grew throughout the area, played in the streams and creeks, and learned to swim in the Anacostia River.

How did you become interested in environmental issues? I have always had an appreciation for the outdoors, from the time I used to help my mother garden in our yard as a small child, to the many opportunities I had growing up to experience the beauty of nature. It seems natural to me that you should protect and take care of anything you care about and appreciate.

Please describe one of your formative experiences with the outdoors and nature. I grew up in the 1950's and 60's, when segregation was in place. As a result, there were places where I could not go and amenities that were not accessible to me, such as swimming pools. Because of this, and fortunately for me and my friends, we would swim in streams and the Anacostia River. We never really missed what we didn't know we didn't have access to.

The city landfill (Kenilworth Landfill) –– or dump as we called it –– was also in our community near the Anacostia River. To access the river, we had to go through the dump. This opened up a world of exploration (unbeknown to us, a very dangerous one) for curious youth. Once we found unopened tubs of ice cream from a local ice cream plant dumped there because their expiration date had expired and the ice cream could no longer be sold in stores. We found out the schedule for the dump days and enjoyed frequent ice cream parties along the River's banks. What a great way to spend a hot summer afternoon!

How did you get into your field? How did you first become interested in it? I started in environmental work when I volunteered to help clean up a terribly neglected park corridor in my community. This led to an offer to coordinate volunteer activities and events and eventually a position as a volunteer coordinator. I learned about Groundwork through this affiliation.

What is your educational and training background? How did this help you get your job? I attended college and studied business and education. I also taught in the public schools, but the training that has been the most helpful to me in my current job was a carpentry apprenticeship and my becoming a certified journeyman carpenter. These skills have been the most transferable to my current job, especially in terms of envisioning and planning on-the-ground projects because I understand the construction involved with many of our projects. My experience as a teacher has also helped out tremendously with community outreach and engagement, something that I am constantly required to do. I also spent over twenty-five years as a track & field coach. This experience has been the most beneficial with youth program development and management.

What advice would you give a young person interested in pursuing an environmental career?
My best advice is to find a field or cause you are passionate about. Expose yourself to and participate in as many outdoor experiences as you can. Study and learn as much as you can about as many things as you can while you are young. Pursue your dreams and be a good steward of nature because nature will always be here but how we leave it depends on you.

Carla Friedrich

About Carla Friedrich

Carla Friedrich currently serves as a program officer for ecosystems management at the United Nations Environment Programme (UNEP) Regional Office for North America, where she began working in February, 2012. Carla's work spans terrestrial (including freshwater), coastal, and marine ecosystems. In concrete terms, Carla is involved in policy and outreach. She helps to connect UNEP with the governments of the US and Canada, as well as with environmental NGOs, on issues related to ecosystems management worldwide. Among other responsibilities, she facilitates the sharing of information on water improvement initiatives between policy makers, scientists, and industries in North America and other countries, so that people who can positively influence environmental policy and management can share best practices with their counterparts. Carla is currently organizing a workshop on ways to reduce the occurrence of marine debris (discarded, man-made solid materials, including plastics, that end up in the oceans and coasts) as a part of the priorities of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA). It is a multi-faceted issue with tremendous economic, environmental, social, and health impacts. Thus policy makers and scientists around the world are joining with industrial leaders to explore ways to significantly reduce marine debris.

The issue of marine debris has been highlighted domestically as part of President Obama's National Ocean Policy initiative. Before working for UNEP, Carla was an ORISE Fellow at EPA's Office of Wetlands, Oceans, and Watersheds for 2 ½ years, where she helped coordinate EPA's involvement in the development of the National Ocean Policy.

Prior to her time at EPA, she was the Environmental Coordinator of the "Proyecto ENLACE del Caño Martín Peña," a project of the government of Puerto Rico to restore a waterway that has become stagnant, polluted, and littered with all manner of garbage due to large-scale urbanization. Her work in Puerto Rico involved actively engaging local residents in envisioning and restoring a clean, healthy channel.

Carla finds the multi-disciplinary nature of her work and the diverse people she encounters personally compelling and engaging. To plan and coordinate successful water projects, Carla has to understand the unique interplay of the social, cultural, health, and environmental facets of each project, and she has to work with an array of people, such as those who live next to the dangerously polluted Caño Martín Peña; or farmers, like those in Mexico's Mezquital Valley who irrigate their crops with wastewater; or the heads of city agencies, environmental advocates, scientists, urban planners, policy makers, and business leaders.

Carla has a BA in Biology and two MAs, the first in Conservation Biology and Sustainable Development and the second in International Health. She was born in Mexico to a Puerto Rican mother and a German father, and is fluent in Spanish, English, and German.

Interview

What was your experience with the natural world as a child and how did this influence you? Until I was 6 years old, I lived in Mexico City, but also partly in the Mezquital Valley, about 60 miles north of the city. Mexico City is huge urban area, but has a lot of parks and green spaces, where my mom would take my sister and me on weekends. The Valley is a semi-desert, with beautiful thermal-spring oases where I learned to swim at a very young age. My father has always been a nature enthusiast, and we both learned to ride horses in the surrounding valleys and mountains. So I learned very early on to love and appreciate nature. When I was 6, my father was working in Central America, and my mother and sister and I moved to San Juan, Puerto Rico. Even though Puerto Rico is an island, many people there don't know how to swim. My mother wasn't a good swimmer, but she wanted us to enjoy the ocean. I loved the water and learned to snorkel and eventually to scuba dive. That's in great part where my interest in water issues was born, and I decided then that I wanted my career path to lead in that direction.
Was there any one formative experience that led you to a career in the environment? For a brief time in 1983, my family lived in Houston, Texas. I remember being surprised at how much people there threw away things that seemed durable to me – especially so many plastic things, and I would always save plastics – like plates and forks and cups. I amassed a huge amount of these items and would wash and reuse them. I remember my mother telling me that she knew then that I was destined for work as an environmentalist.

Was there any one formative experience that led you to a career in the environment? For a brief time before we moved to Puerto Rico, my family lived in Houston, Texas. Although I was very young, I remember being surprised at all the things that seemed durable to me that people there threw away –- especially plastic plates, forks and cups. Despite my mother's complaints, I collected a huge amount of these items to clean and save in the hopes that we could reuse them. My mother tells me that she knew then that I was destined to be an environmentalist.

What advice would you give a young person interested in pursuing an environmental career?
Unless you are interested in studying something very specific –- like a particular species or a habitat in a specific location –- you should keep you interests broad. The environmental problems facing small and large communities are multi-faceted and require a broad perspective and a holistic approach. Take a variety of courses in school, like environmental economics, environmental studies, biology and chemistry, social sciences, public health, and anything that interests you. Cultivating a wide range of knowledge and interests can create great opportunities.

Ronald Leaks

What is your job and what do you do? I've worked at Groundwork Somerville for the past 1 ½ years as the Program Coordinator. I coordinate two of our programs. One is "National Park Preservers," which is an environmental job training program for young adults aged 18 to 25. I set up different job readiness workshops for the crew like resume writing, life skills classes, budgeting workshops, and workshops on how to get college financial aid. The crew works on landscape preservation at the National Park in Concord, and I also train them in safe tool use during the first few weeks of the program, and I make sure crew members are meeting the productivity standards I expect. The other program I organize is "Urban Family Outreach." This is a group of concerned resident volunteers that tries to engage communities of color in neighborhood changes and to ensure that community voices are heard. For instance, the City wanted to cut back services to the transit system and increase fares. I helped coordinate rallies and community meetings, and we were able to convince the city not to cut back services because the MBTA is a lifeline in our community. Fares were increased, but not by as much as originally proposed.

What I like most about my job is connecting to people. I'm a community man. I meet people from all walks of life, and I like finding out the human side of them.

What was the environment like where you grew up? I moved around a lot and lived in a lot of different places, including Tulsa Oklahoma and Boston. Wherever I was, I always lived in the inner city. I was outside a lot, playing basketball and riding my bike, but there was not much green space at all, and I was not exposed to the environment much.

As a child, were you familiar with nature and did you spend much time outdoors? No, I really wasn't familiar with nature except for an occasional trip to a local park.

How did you become interested in environmental issues? By doing a lot of community service with Groundwork Somerville. The more work I did with them, the more my interest was piqued. And then I applied for and got into the same job-training program I coordinate now. I definitely enjoyed the training program.

Please describe one or two of your formative experiences with the outdoors and nature. During my first community service project with Groundwork, I was helping resolve a dispute at a community garden in a housing project. After things settled down, one of the lady's from the project took me to her garden bed and showed me a watermelon she had grown. I remember thinking "this is awesome." It was like "wow, I can't believe this woman is growing watermelons in the projects." This experience really captured me.

How did you get into your field? How did you first become interested in it? Like I said, I got into this work through Groundwork Somerville.

What is your educational and training background? How did this help you get your job? I don't have a lot to say here. I dropped out of high school, but later I went on to get my GED. I got all of my training on the job with Groundwork. I knew I wanted to continue my education, and I'll be starting college this September, probably in business management because I think it will help me with coordinating community programs, which is really what I want to keep doing.

What advice would you give a young person interested in pursuing an environmental career?
Just like with anything, keep an open mind. Find out what interests you. Learn about the environment. There are definitely jobs available for you in green work.

Ahmad Toure

What is your job and what do you do? I'm an interpretive Park Ranger at Great Fall Park Virginia. I patrol the park, tend to walking trails, and make safety contacts. Rangers also give tours, and it's my job to tell the story of the park to viewers and visitors and to help them understand the history of the Park and its wildlife ecology.

What was the environment like where you grew up? I was born in New Orleans and lived in a base in the Kisatchie National Forest of Louisiana for nine years, due to my father being in the Army. I also lived in rural areas of Germany for nine years. Because of my father's military service, we traveled a lot. I always lived in a nice environment. I was lived within walking distance of a natural environment, and I was always around wildlife.

As a child, were you familiar with nature and did you spend much time outdoors? Yes, I was already very familiar with the outdoors. I loved hiking, observing and exploring. Growing up, we always had a garden so that helped keep me familiar with nature.

How did you come to be interested in environmental issues? I became interested by just being around wildlife ever since I was a child. Also, I was very curious as a kid. Whenever I saw any new insects or birds, I would ask my mom about them, and she would direct me to the encyclopedia to find out more about them.

Please describe one of your formative experiences with the outdoors and nature. When I lived in Germany, I attended what they call a "Volks Marche," or "People's Walk," which is a 10km social hike. The forests we hiked through were very dense and filled with wildlife. I really liked the trees, and the forest and nature came to grow on me over time.

How did you get into your field? How did you first become interested in it? I applied for an internship at the Student Conservation Association, and with time I eventually became a park ranger. I became interested because I liked learning and sharing knowledge about the natural world.

What is your educational and training background? How did this help you get your job? I studied Business Administration, Marketing, and Graphic Design. I was also a lifeguard; I have my certificates in CPR and Wildlife First Aid; and I trained with the trail crew, where I learned how to use new tools for proper trail construction. All of these experiences have been helpful. With my graphic design skills, I help design informational materials for the Park, such as information banners, and business administration helped my communication skills, which are essential for a ranger.

What advice would you give a young person interested in pursuing an environmental career? Learn as much as possible, network, and be honest and real about it. It really just takes a lot of patience and teamwork. Stay passionate and keep working toward your ultimate goal.

Gaps in the Environmental/Urban Waters Employment Pathway 9

While we have identified ways to move forward with establishing a deliberate environmental/urban waters career pathway within our organization, it is also important to examine the challenges we've encountered so that we can learn from these experiences as we move forward as well as identify existing gaps and next steps in the environmental career path that need to be addressed.

We must work with our federal partners to develop an easily accessible and comprehensive database of environmental positions in federal agencies.

1. **Limited Capacity for Tracking Youth Career Trajectories:** While Groundwork trusts operate stellar hands-on youth programs, they do not systematically track the young people that have actively participated in our programs. In coordination with the Groundwork USA office, the trusts should develop systems to track and to stay in touch with past program alumni, to engage them as peer mentors, volunteers, and employees as well as to follow their career paths. Green Team graduates will provide valuable connections for the younger people moving through the Green Team and over time will constitute a network of professionals that can help minority youth find good positions in environmental fields.

2. **Existing Federal Web Portals for Internship and (Seasonal) Work Opportunities Are Limited and/or Difficult to Navigate:** An obvious place to look for internship and (seasonal) work opportunities in the fields of environment, conservation, recreation, and urban waters is of course the federal government. However, our experience indicates that there are very few places to successfully and easily conduct searches for such positions. In particular, *www.usajobs.gov* is unwieldy to navigate, especially for a young person pursuing a job on his or her own for the first time.We must work with our federal partners to develop an easily accessible and comprehensive database of environmental positions in federal agencies. These should include opportunities requiring a high school diploma/GED as well as positions requiring advanced degrees.

3. **A Clearinghouse for Career Stories and Contacts for Environmental and Urban Waters Occupations:** At the moment, based on our research, there doesn't appear to be a "one stop shopping" portal for young people seeking environmental/conservation/urban waters jobs and careers, particularly job postings, training opportunities, certification guidelines and practitioner testimonies. Such information would likely be welcome and relevant to those with topical hands-on experience, like the youth emerging from our Green Team or the Brownfields/Environmental Job Training Program programs as well as youth pursuing higher degrees with an interest in scientific research or policy development, for instance. We see a need to create a landing place for youth on the web as a means for connecting with others, finding inspiration, reading others' stories, exploring potential jobs and their associated academic/training/certification requirements, as well as understanding the potential salary levels, projected stability, and anticipated availability of such positions. One website we've found that provides a great example for what we'd like to create for young people pertaining to the fields of environment, conservation, recreation, and urban waters is the *Work for Waters* website: *http://www.workforwater.org/*.

4. **Need for Transitional Support for Emerging Youth Program Participants:** At the present time, when a young person emerges successfully from one of Groundwork's environmental youth programs, our practitioners don't have a distinct and predictable track to refer them to as a way to help them translate their rich experiences into a career. While guidance of this nature happens occasionally between Groundwork personnel and youth program graduates, this phenomenon is typically the result of a nurtured relationship and is not (yet) the norm. Partnerships with career centers may be one way to help young people write resumes that highlight the specific skills and experiences gained as part of their Groundwork participation. Regardless, we would like to provide more deliberate transitional support to move program graduates into academic, job training, apprenticeship, and career pursuits on a national network scale.

5. **Gaps in Vocational Pathway to Environmental/Urban Waters Career Opportunities:** With the post-secondary academic track in mind, community colleges established technical programs to provide employment in the basic trades, including the industries of food service, automotive repair, HVAC systems, electrical systems, and health technology, among others. In place of tradesmen "handing down" knowledge from father to son, this apprenticeship model has become institutionalized by community and junior colleges for traditional skilled trades. Students emerge from these secondary educational institutions with an Associates (2-year) degree or a certification in a technical specialty. Such pathways provide gainful employment opportunities for those who may not, for whatever reason, pursue a four-year college degree.

   This vocation-based model seems to work reasonably well for our target youth, and we find that there is a need to develop an environmental/urban waters educational track within this system as well. As highlighted earlier in this report, there are an increasing number of jobs in the growing field of green infrastructure that do not require advanced college degrees. Presently, there are few existing vocational tracks to steer and prepare students substantively for much-needed, meaningful, and indeed pivotal jobs working to improve the urban environment in distressed American communities. It is our hope that the Groundwork youth development model will prepare high school-aged youth for either a post-secondary environmental/urban waters career pathway, or a vocation-based one. We also hope there will be a precipitous increase in the number of non-traditional skill-building opportunities for them to pursue on their pathway to gainful employment.

   One fantastic model with the potential for replication across the United States as the green economy grows more robust is the Center for Innovative Strategies at Cincinnati State Technical College in Ohio. Administered through the Business Technologies Division, the institution offers an Associate's Degree or certification in Landscape Horticulture and/or Sustainable Horticulture Technologies (including low-impact development techniques, i.e., green wall/roof installations, rainwater retention systems, and use of sustainable energy products such as solar lighting and water pumps) and includes a required co-op component with one of several partnering employers.

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