



From job training to green jobs: A case study of a young adult employment program centered on environmental restoration in New York City, USA

Nancy Falxa-Raymond*, Erika Svendsen, Lindsay K. Campbell

USDA Forest Service Northern Research Station, NYC Urban Field Station, Fort Totten Cluster #2 Box #12, Bayside, NY 11359, USA

ARTICLE INFO

Keywords:

Disadvantaged populations
Environmental attitudes and behaviors
Green jobs
Workforce development

ABSTRACT

The demand for a well-trained green-collar labor force will increase as many cities implement sustainability and green infrastructure plans. Additionally, many green jobs training programs are intended to provide pathways out of poverty for low-skilled workers. In this case study, we analyze the experiences of graduates from a New York City, USA green jobs training program targeting 18–24 year olds previously disconnected from the workforce as they transition to full-time employment. Graduates of the program work directly in arboriculture, ecological restoration, landscape design, and horticulture. Despite the well-documented benefits of nature on individual socio-psychological well-being, scant research has investigated the effects of working professionally in urban natural resources management. Our findings reveal the significant challenges facing training program graduates and their supervisors, but also the benefits of urban conservation job training and employment that are potentially transformational for these economically disadvantaged young adults. Green job training and employment present real opportunities for intellectual stimulation and an increased sense of accomplishment, due in part to the uniqueness of environmental work. Individuals reported positive environmental attitudes and behaviors as a result of green jobs training and employment.

Published by Elsevier GmbH.

Introduction

Green-collar job training programs are often celebrated as an opportunity to lift low-income individuals and their families out of poverty (Pinderhughes, 2007; Apollo Alliance, 2008), yet there is little research on the social and psychological experiences of training program participants after their transition to employment. While the meaning of the term 'green jobs' is transforming in public discourse (Kouri and Clarke, 2012), green-collar jobs are commonly defined as jobs that contribute to preserving or enhancing environmental quality. These jobs range from low-skill, entry-level positions to high-skill, higher-paid jobs (Apollo Alliance, 2008). Green-collar jobs reside in a variety of sectors, including construction, manufacturing, maintenance, and agriculture; and are particularly concentrated in clean energy industries. In this study, we address facets of green jobs that focus directly on urban natural resource management, including arboriculture, ecological restoration, landscape design, and horticulture.

Environmental restoration and conservation jobs training programs are rooted in American history. Perhaps the original green

jobs program, the Civilian Conservation Corps operated from 1933 to 1942, providing work to unmarried men from "relief families" (recipients of public assistance), focusing on the conservation and development of natural resources on public lands. The program focused on the conservation and development of natural resources on rural public lands. The public works program helped lay the foundation for modern conservation practices and inspired present-day service corps such as the National Civilian Community Corps and the Student Conservation Association (Barnett and Burns, 2012). Nearly a century later, persistent demand for this type of restoration work across a range of urban and rural landscapes calls for research that explores what is unique about this type of work and its impact on those who engage in it.

Sector-specific job training

Effective workforce development strategies for disadvantaged populations of young adults are needed to overcome unemployment and limited advancement opportunities for less-skilled workers in the United States (Cooney, 2010). Job training programs that link training to specific employers are found to be relatively more successful than other workforce development programs in facilitating transitions into work for less skilled, disadvantaged workers (Hamilton, 2002; Rademacher, 2002; Loomis et al., 2003; Pindus et al., 2004). Linkage strategies include employer-designed

* Corresponding author. Tel.: +1 9177965353.

E-mail addresses: njfalxaraymond@fs.fed.us, nfalxaraymond.fs@gmail.com (N. Falxa-Raymond).

curriculum, industry advisory boards, and trial job placements with firms in collaboration with community-based organizations that provide supportive services (Cooney, 2010). In addition, external factors such as unemployment rate have been found to have a greater effect on probability of employment than job training programs, emphasizing the importance of addressing the demand side of the labor market (Leahey, 2001).

The enhanced employment opportunities provided by sector-specific job training may offer psychological benefits to trainees. Cooney (2010) finds that the existence of a direct employer link focuses job training on market relevant skills and can positively influence client morale and motivation. These findings suggest that employment conditions and the existence of future job prospects can promote positive employee attitudes and other “soft skills.” Furthermore, for those with low self-efficacy (belief in one’s capability to perform a task), on-the-job training has been shown to lead to higher self-efficacy than classroom training (Huang, 2009). The mastery of new situations experienced during training may translate into greater feelings of confidence when faced with new situations on the job and greater chance of success in those situations (Gist, 1987). Finally, self-efficacy has been found to relate positively to interest in an activity (Bandura and Schunk, 1981), which may encourage training program graduates to pursue a life-long career in their new area of employment. This research suggests that “soft skills” like workplace attitudes and attendance must be viewed as important employment characteristics on par with more technical job skills. However, Lafer (2002) criticizes job training as an anti-poverty measure, contending that it is legal, institutional, and political factors that determine wages and unemployment rates, rather than a mismatch between available jobs and the skills (“soft” or technical) of the unemployed. Holzer (2012) takes the more balanced approach that both worker skills and the quality of available jobs must be improved to address unemployment and stagnant wages, and argues that job training programs linked to employers are a cost-effective solution to the disconnect between education and workforce institutions.

Green-collar job training is a type of sector-specific workforce development that can link disadvantaged, low-skilled workers to employers in expanding green industries (Jones, 2008). Opinions differ about employment opportunities provided by the green job sector as a whole. Bezdek (1995) claims that although “joblessness disproportionately affects the poor, minorities, and the disadvantaged. . . the lucrative, attractive [green] jobs will largely flow to persons who are neither poor nor minorities (105).” Indeed, traditional rural forestry jobs have not always benefitted all populations of workers equally (Moseley and Toth, 2004; Moseley, 2006). However, it has been argued that green jobs offer more opportunities and better pay for low- and middle-skilled workers than the national economy as a whole (Muro et al., 2011). One report claims that nationwide investment in water infrastructure would create 1.9 million green jobs, most of which would not require a college degree (Gordon et al., 2011). As metropolitan areas across the country initiate sustainability plans, there will be a need for a larger urban natural resource management workforce. Many cities have embarked on widespread tree planting and green infrastructure initiatives, with the need for ongoing maintenance by professionals (City of Los Angeles, 2006; City of Seattle, 2012; Philadelphia Water Department, 2012). Despite growing interest in our cities’ natural resources, urban forestry, horticulture, and ecological restoration jobs are largely ignored in nationwide green jobs policy analyses. There is, however, an awareness of the need for these types of jobs in the federal Job Corps program, which offers an 8–12 month training program in urban forestry. Urban environmental restoration jobs offer an opportunity for those with limited formal education and specialized job training to establish green-collar careers. Furthermore, engaging in environmental

restoration work may provide benefits to workers beyond that of employment.

Psychological and social benefits of working in urban nature

Among the general population, even brief encounters with urban forests have been found to produce positive moods (Hull, 1992). Furthermore, physical activity in the presence of nature, including walking, farming, and gardening, has been found to improve both self-esteem and mood in adults (Barton and Pretty, 2010). Immersive outdoor adventure education programs may offer even greater benefits, having been found to foster personal growth and awareness in young adult participants, including increased self-esteem (D’Amato and Krasny, 2011). One study found that at-risk sixth graders showed gains in cooperation and conflict resolution skills, gains in self-esteem; gains in positive environmental behavior; and improvements in problem solving, motivation to learn, and classroom behavior after weeklong outdoor education programs (AIR, 2005). Similarly, youth participation in local environmental action can lead to individual physical, intellectual, psychological, emotional and social development as well as positive environmental and social change in communities (Schusler et al., 2009; Schusler and Krasny, 2010). Other research is further exploring the psychological, sociological, and developmental benefits associated with adolescents and teenagers working on volunteer or paid urban greening projects (Wolf, 2003).

Several studies have documented the benefits of gardening, including the aesthetic pleasure of being around plants, the opportunity to escape daily pressures, spiritual benefits, a sense of accomplishment, and the tangible benefits of producing one’s own food (Kaplan, 1973; Kingsley et al., 2009; see also Stone, 2009). Feenstra et al. (1999) found that entrepreneurial community garden projects “encouraged participants to develop their self-esteem, to gain a sense of personal satisfaction and stability in their lives, to take pride in themselves and their achievements” (21). Sheffield (1992) found that underachieving students participating in a garden-based curriculum experienced improvements in self-esteem and academic achievement. In addition, horticultural therapy among urban jail inmates has been shown to lower depression, reduce substance abuse and hostility, and sustain desire for help (Rice and Remy, 1998).

Psychological benefits of gardening have been found to extend to vocational horticultural activities, particularly in training program participants. One horticultural training program for at-risk teenagers included academic and vocational skills in order to develop a traditional Native American Yaqui garden (Sandler et al., 1995). These “disenfranchised” students became more connected to their culture and community and made progress on academic goals. Furthermore, vocational horticulture training programs have provided a host of psychosocial benefits to juvenile offenders and adult inmates, including improved social bonding, increased general self-efficacy, reduced recidivism, and increased motivation to develop future goals and plans (Finch, 1995; McGuinn, 1999; Sneed, 2000; Pudup, 2008; Jiler, 2006, 2009). Working in a garden training program teaches participants skills that can be applied toward a future career: generating goals; planning productive work efforts; responsibility; problem solving; cooperation; and holding a steady job.

Using semi-structured interviews, this study examines the experiences of New York City’s MillionTreesNYC Training Program (MTTP) graduates after their transition to full time employment. MTTP is a green jobs training program run collaboratively by the New York City Department of Parks & Recreation and the non-profit New York Restoration Project. We address several research questions pertaining to those who successfully completed the MTTP and were placed in entry level green jobs: (1) What motivates

low-income young adults (aged 18–24) to seek out, participate in, and remain involved in job training programs and jobs related to urban natural resource management after MTTP? (2) How does completion of MTTP and subsequent work in entry-level green jobs affect participant attitudes toward self, neighborhood, and the environment as well as behaviors related to environmental stewardship? (3) Is there anything unique about engaging in the act of environmental restoration that might convey benefits to workers beyond employment? and (4) In this population what are the challenges to engaging in initial training and transitioning to full time work?

Methods

Case selection: MillionTreesNYC Training Program

MillionTreesNYC is a public-private initiative in New York City with the goal of planting and caring for one million new trees by 2017. As part of the initiative and also part of a larger citywide effort to combat poverty, the MillionTreesNYC Training Program (MTTP) provides experiential learning in arboriculture, ecological restoration, landscape design, and horticulture. In addition, the program provides certification in pesticide/herbicide application, chainsaw training, compost training, and continuing education credits from the New York Botanical Garden, as well as a Life Skills Training class. A unique feature of the MTTP is that it combines the goals of traditional workforce development (to provide training leading to employment) with the goals of teaching and motivating young adults to become more active stewards of the environment.

The MTTP specifically targets low income 18–24 year olds who have a high school diploma or GED but have been previously disconnected from the workforce. While participating in the program, trainees were paid a salary and taught specific professional skills needed for environmental restoration jobs in New York City (Maddox et al., 2010). Trainees were recruited via existing programs run by the NYC Department of Parks & Recreation, NYC Center for Economic Opportunity, NYC Department of Youth & Community Development, and the NYC Housing Authority with assistance from the Mayor's Fund to Advance New York City. After completing a seven month program, graduates were placed in full-time jobs at local government and non-profit environmental organizations that are partners of the MillionTreesNYC effort and agreed to host MTTP grads. In 2009, the US Forest Service awarded a \$2 million grant to fund MTTP graduates' full-time salaries for two years following completion of the program. The individuals in our study sample worked 35–40 h per week and earned an annual salary of approximately \$29,270, roughly twice New York State minimum wage (\$7.25 per h).

In addition to providing decent wages, the MTTP meets several of the recommendations for training initiatives set forth by the *Apollo Alliance* (2008) in their comprehensive report on green-collar jobs: (1) the program is linked to the existing MillionTreesNYC policies and investments in environmental and economic development of New York City; (2) the program provides entry points for a range of workers from different educational backgrounds and life experiences who have similar needs for job training; (3) local government and non-profit organizations were directly involved in the development of the training program in order to identify specific local green job opportunities; and (4) comprehensive employment services are provided to program participants. MTTP organizers also recognized the need for on-going program evaluation, and worked with the NYC Center for Economic Opportunity to develop mechanisms to gather feedback

Table 1
Selected characteristics of employees interviewed.

Gender	
Male	75% (12)
Female	25% (4)
Race/Ethnicity	
African American	81% (13)
Hispanic	19% (3)
Education (at program entry)	
High School Diploma	75% (12)
GED	19% (3)
Some High School	6% (1)

from trainees and staff in order to make improvements with each new cohort (Metis Associates, 2009).

Sample

There were thirty participants in the first MTTP class. Twenty-five of those participants graduated and twenty were placed in jobs. Of those twenty, sixteen were still employed at the time of this study, 2–3 months after initial hire. This purposive sample examines only those training graduates that were placed and retained in jobs at least 2–3 months beyond the initial placement. Selected characteristics of the sample population are presented in *Table 1*. We acknowledge that this research design does not allow us to make comparisons between those trainees that dropped out, did not complete the program, or were not placed in jobs, but it does allow us to understand the experiences of all sixteen employees that remained in place and continued their transition to full time employment.

The 17 supervisors of all 16 employee graduates were also interviewed, as well as three supervisory staff members of the MTTP – Program Director, Deputy Director, and Case Manager. The relationship between supervisors and employees was not one to one; some supervisors oversaw multiple employees and some employees had multiple supervisors. Employers of MTTP graduates included municipal and non-profit organizations engaged in environmental work in New York City.

Data collection and interview protocol

Face-to-face interviews were conducted with employees and their supervisors approximately 2–3 months after the employees began full time employment in entry-level green jobs. Interviews were semi-structured, lasting from 30 min to 1 h, and were composed of flexible, open-ended questions that fostered a wide-ranging conversation about employees' work experiences, their outside lives, and the transition from the MTTP to employment. Topics included how employees became involved with environmental work; their greatest likes, dislikes and challenges on the job and how it compares to previous jobs they have held; how they feel about working outside with plants; whether the job has affected their way of thinking or environmental behaviors outside of the workplace; and their goals for the future. Supervisors were asked about their experiences supervising the sixteen MTTP graduates, including the challenges they perceive the MTTP graduates as having or challenges they have faced in supervising them, and any changes in employee attitudes or behavior during the course of their employment. Supervisors were also asked if they had any previous experience working with a similar population of workers.

Participation in the study was voluntary and the interviews typically took place in private at the participant's workplace. Interviews were tape-recorded and transcribed, and the qualitative data analysis program NVivo was used to store, sort and code the recorded data (QSR International Pty Ltd. Version 9, 2010). The interviews were read and coded by the lead author and a sample of the

interviews was coded by a second reader in order to enhance reliability. The initial round of coding was 'open,' where the readers analyzed for broad patterns in the data. Key themes and subcodes were agreed upon and discrepancies were discussed until consensus was reached between the coders. Using this revised coding scheme, a second and more detailed complete coding resulted in all transcripts being coded to the five primary themes, each of which had up to twelve subthemes (Strauss and Corbin, 1990; Charmaz, 2001; Lofland et al., 2006). Researchers deliberately searched for responses across a spectrum of responses, including positive, negative, ambivalent, and neutral perceptions of green jobs.

The misinterpretation of meaning through discourse is considered one of the main threats to qualitative validity (Baxter and Eyles, 1997). However, there is a basis for validating the trustworthiness of interpretations and observations in such situations. In this study, the cultural context of the MTTP was previously well-known to the researchers, which helps to minimize distortions introduced by self or the interviewees (Baxter and Eyles, 1997). To ensure dependability of the data, in addition to use of a digital recorder, preliminary findings and general interpretations were discussed with peers active in the field of urban greening and stewardship. Included in these discussions were representatives from the U.S. Forest Service, New York City Department of Parks & Recreation, and several local nonprofit organizations who participated in a workshop on youth employment and green jobs.

Results

These findings are based on employee and supervisor responses to the interview questions referenced above. Five primary themes emerged from the data and are discussed below, including employees' *Motivations*, *Knowledge/Skills* acquired, *Attitudes*, the *Significance of Environmental Work*, and *Challenges* faced.

Motivations

All employees discussed their motivations for *seeking out* initial training or *remaining in* green jobs. Most employees were motivated to seek out the MTTP (81%) or stay in their green job (88%) because of a personal support network. Employees discussed a diverse array of mentors and sources of inspiration in those networks including school administrators, internship supervisors, public housing assistants, family, and friends. For example, when asked how he became involved in greening work, one employee responded:

Well in my elementary school, my principal, he had a greenhouse. And I actually helped him build it, the greenhouse. And we just planted a whole bunch of tomatoes, a whole bunch of vegetables and fruits. And I just like stuck with it. I kind of fell in love with it.

In contrast, the individuals that employees described as providing motivation to remain in green jobs were found in the workplace. These support networks included supervisors and co-workers (69% for both). Over half of supervisors (53%) described themselves as mentors to these employees, while an additional 19% believed that other co-workers served as mentors.

An interest in the environment or an environmental career was also a major motivating factor for employees to seek out (69%) and remain in (94%) green jobs. When asked how they became interested in green jobs, several employees described themselves as an "outside person." Some had experience working outdoors professionally or doing yard work or gardening at home, while others were tired of being "[stuck] in an office." Some employees (19%)

were motivated to seek out this work because they felt that urban greening made a contribution to society. One interviewee explains:

What motivated me? I wanted to give back to the community, to the environment and society because at a point in my life I had to depend on society. So that was my main thing, to give back.

Others cited specific environmental benefits of their work such as improving air quality or reducing asthma as a result of tree planting.

Secondary motivations to seek out green jobs included the need for money or employment generally ("an opportunity is an opportunity") and a specific interest in physical work, such as chainsaw training. Similarly, motivations to stay in green jobs included an interest in further environmental work skills training or a future career in green jobs with 63% of employees articulating their ideal job in urban natural resource management. Other important sub-themes for motivations to stay in the job included employees' pride in their work – both in their ability to meet the responsibilities placed on them and in the nature of the greening work, something we will expand upon in looking at the *Significance of Environmental Work*.

Knowledge or skills acquired

Almost all employees interviewed (94%) described acquiring new knowledge or skills during their training programs and subsequent employment. Subthemes were created for *physical skills*, *environmental knowledge*, *interpersonal skills*, and *office skills*. Most (88%) learned new physical skills including the use of specific restoration techniques, tools, or equipment. Landscaping equipment mentioned included the use of a skag, chainsaw, handsaw, pole saw, sledgehammer, hedgetrimmer, drill, axe, auger, wood chipper and pruning shears. Specific physical skills included dead-heading roses, tree climbing, herbicide application, and invasive plant removal. A majority of employees (63%) mentioned new environmental knowledge, such as plant species identification, pest/disease diagnostics, or general ecological principles. Some employees (34%) also reported acquiring interpersonal skills or office skills through their training program and work experience. In each subtheme, the number of supervisors reporting knowledge/skills acquired was in general agreement with the number of employees.

Attitudes

Changes in employee attitudes toward self, work, or the environment as a result of green jobs training and employment were coded as positive, negative, ambivalent (meaning both positive and negative), or neutral.

Toward self

Attitudes toward self were generally positive (56%). Employees reported that they had grown and learned from their green jobs experience and felt more confident, knowledgeable, and mature. Some interviewees were proud of a specific project or accomplishment at work. For one woman, these attitudes resulted from a change in her personal situation brought about by job training and employment:

You figure last year this time . . . I was living in a shelter and working for [an environmental organization] and I wasn't making enough money and I was miserable and over the past year I now have my apartment and I'm not on welfare anymore and I make enough money to meet my needs and then some and I feel more mature. I really don't know how to put it in words, it's

like I progressed so much through leaps and bounds over the past year.

Others expressed that green jobs gave them a more open-minded outlook:

It taught me that I have to venture out to discover things. To open my eyes more to what's around me. And not just what's physically around me – venture out mentally to see a little further.

A few employees were more neutral about a change in self-regard (25%), stating that environmental work had not changed the way they felt about themselves. None of the employees expressed negative attitudes about themselves.

Toward work

All employees expressed positive attitudes toward work. These attitudes largely reflected their motivations for remaining in a green job and the significance of environmental work, both of which are described separately in this section. One employee's enthusiasm for his job comes from its uniqueness:

Anybody could be a mechanic out there. Anybody could be a carpenter. But to be a skilled horticulturist or just being a forester, it's very slim. And I really enjoy it and...being here is definitely something that I really appreciate every single day when I come here. And it's definitely something that I enjoy because I learn every single day from it...If, God forbid, if it doesn't work out here, just the experience that I went through here and just working here, I could actually apply myself and use that experience working somewhere else.

Within positive attitudes about work, an important subtheme found in all employee interviews was positive comments about coworkers, whether fellow entry level employees or supervisors. Also, 31% appreciated the independence or freedom they felt in their green job in comparison to previous entry level positions in other industries. Only 13% expressed negative attitudes toward work, reflecting the challenges discussed later in this section. One employee was frustrated with indoor work tasks and felt she was unfairly punished by her employer, while another didn't like the fact that he had to work full time, while many of his peers were in school or having unstructured time because they were not working.

An employee's positive attitude toward work was extremely important to supervisors and was linked to a supervisor's positive attitude toward the employee. Almost all supervisors (88%) observed positive employee attitudes toward work that encouraged them to trust the employee and see them as a reliable member of the work team. It was important for an employee to be someone who shows up on time and is "ready to work." Common phrases used to describe employees' positive attitudes included: enthusiastic, motivated, dependable, hardworking, interested, engaged, and focused. Supervisors felt they could trust employees who took initiative and were appreciative of their opportunity to work as a result of the MTP. As one supervisor said of her employee, "He's made himself an asset."

A corresponding subtheme was found in 38% of supervisors who on some occasions observed negative employee attitudes toward work (reflecting less than half of the employees). (Some supervisors discussed employees holding both positive and negative attitudes toward work at different times and in different circumstances, which is why percentages total greater than 100%.) As a result, the supervisors felt that they couldn't trust these employees to complete their work assignments or to act in a professional manner. Some supervisors described feeling that they were being manipulated by employees who had constant excuses for missing work. Many suggested that the employees had difficulty meeting their

expectations because of their previous lack of sustained work experience. In the majority of cases, supervisor perceptions of employee attitudes corresponded with attitudes expressed by the employees themselves; only one case showed strong divergence of employee and supervisor perceptions.

Toward the environment

None of the employees interviewed expressed negative attitudes about the environment. About a third (31%) expressed neutral or unchanged attitudes toward the environment, saying that despite their job they don't feel differently about their neighborhood environment or were no more likely to spend time outdoors. However, most employees had a positive attitude toward some aspect of the environment following employment in green jobs (81%). These attitudes included loving the feeling of being outdoors or the beauty of nature. Others, like this man, developed a deep respect for plants:

I grew to really understand how nature actually affects us and how, not just trees, just how plants, how grass, how everything grows. And everything takes time, like a living fossil. I never knew that it takes so long for it to grow and when I see a big one, like an ancient one, just standing here, I look at it like "wow"...it changed my whole perspective on life, which is crazy.

In some cases, employees' positive attitudes toward themselves were connected to their positive attitudes toward the environment:

We have to mature and in this industry I matured so much and appreciate life more...I appreciate my surroundings. I appreciate everything around me and especially trees. Just all these species, I appreciate everything around me.

Over half (56%) reported greater awareness of their local environment as a result of their experience in green jobs, including the condition of street trees and other green infrastructure.

Significance of environmental work

The significance of working in a green job as opposed to any entry level position emerged throughout the interviews. Employees described a variety of green job benefits beyond a steady income, leading to the following subthemes: *working outdoors*, *physical work*, *variety of work*, *interacting with the public*, *making a difference*, and *environmental stewardship behaviors* beyond the workplace.

All employees discussed the significance of their work taking place outdoors. While all employees said that they liked working outdoors, some (44%) also mentioned negative aspects of working outdoors in cold or rainy weather. In a similar subtheme, 81% of employees liked the physical nature of their green jobs – using their hands and tools or building things. One person explained, "Over here it's out in the open, so you get to work with your hands more. It's more freedom." Another employee shared that he likes "having to use all my muscles...it's like a workout."

Almost everyone (88%) appreciated the variety of work that they engage in, saying that they are always learning and don't get bored with their job. In other words, "there's always something to do." Urban environmental restoration work often includes a variety of tasks, locations (both inside and outside and throughout the city in some cases) and personnel (including collaborators or volunteer groups) that may vary from project to project. For example, one employee explained: "The thing I like most about this job is you get to travel and see all the different places in New York City." Another employee replied:

I get to try new things every day. It's not always the same thing in the same place every day. I get to do a little bit of gardening,

construction; I'm supervising a little bit. So that's pretty much what I like about it – it's not the same exactly every day.

About a third (38%) of employees specifically mentioned working with the public as a positive part of their green job. One person explained, "You get to work with volunteers too, people that's not even from New York. Telling you about the other part where they come from is pretty exciting so you don't get really bored." In addition to volunteers, other employees field questions from the general public when they are out working on a site. One man expressed that positive comments from park visitors give him "more inspiration to do [his] job." Similarly, over half of employees (56%) described feeling that their job is part of a larger environmental movement and that their work is "making a difference." Other expressions of this subtheme included the sense that employees were working "with a purpose", doing "something positive", "helping people", or "bettering the community." And as a result, one employee said, "I feel important, I feel needed, I feel a part of something."

Notably, all employees described expanding their environmental stewardship behaviors outside of the workplace as a result of their involvement in green jobs. The most common stewardship behavior was neighborhood greening (75%), including street tree pruning, gardening, picking up garbage, and educating friends, family and neighbors. Over half of interviewees reported spending more time outdoors (56%), whether on a camping vacation, in their neighborhood park, or in their own backyard. Nearly half (44%) mentioned that they used to litter, but no longer do so since their green jobs training and employment. As well, 44% also reported that they have begun to recycle since their green jobs experience began. Finally, 31% described educating their friends and family about environmental issues. Other lifestyle changes such as eating fresh, healthy food and driving less were also mentioned with less frequency.

Challenges

Nearly all – 94% of employees and 88% of supervisors – discussed challenges that emerged in the transition from training program to entry level employment in green jobs. These challenges included *Personal Life*, *Logistics* (commute length or scheduled work hours), *Lack of Job Preparation*, *Supervision/Management Issues*, and *Negative Workplace Relationships*.

The most common challenges faced by employees originated from their personal lives (reported by 69% of employees and 59% of supervisors). These included child care issues, illness (self or family member), financial struggles, or a difficult living situation. A related challenge for half of the employees interviewed was the early work schedule required by their green job or the length of their commute time, which often contributed to morning lateness. A challenge identified less frequently was negative workplace relationships, whether with supervisors or other employees; 19% of employees and 24% of supervisors described these conflicts in their interviews.

One major finding from our interviews highlights the discrepancy between employee and supervisor views on job preparedness. While only 19% of employees felt that they were unprepared for full time employment after the MTTP, 82% of supervisors believed that this was a significant problem. And while the employees felt that they lacked specific technical field or office skills, supervisors were more concerned with employees' ability to handle the level of responsibility required in their new positions. One supervisor used a basketball analogy to explain:

I think that the transition from the training program to the employment is like going from college hoops to pro hoops. What they don't tell you is that the three-point line is another few feet away and that the games are longer. So I think that people who

graduate from that [training] program as a 5-star status or 100% status, the expectation leaps so high to full time employment that it's difficult because the people who are the all-stars... realize that wow, now they're on their own and the days are longer and the work is harder and there's more responsibilities.

Supervisors felt that employees needed more training in office skills (email, spreadsheets) and also in "life skills" that would help them deal with challenges at home so that they were able to report to work on time, stay focused, maintain a professional attitude, and become reliable members of the work team. However, they rarely mentioned a need for greater environmental knowledge or technical skills.

In addition, some supervisors perceived a lack of motivation or dedication to the job, describing situations where employees exhibited chronic lateness or absenteeism, followed by inappropriate excuses for missing work. Others observed a lack of interest, for example in employees who sent text messages on personal cell phones excessively while on the job. Some supervisors felt that it was difficult for such young adults with little work experience to appreciate the opportunity in front of them, and believed that employees would rather hang out with their friends at home than come to work. Supervisors reported that employee unreliability had serious impacts on the functioning of their organizations because the MTTP employees were essential parts of the work team. Several supervisors mentioned that this type of unprofessional behavior was "corrosive to morale" among other (non MTTP) employees. Because these training program graduates were paid a salary funded by a federal government grant, supervisors often chose not to fire them despite chronic behavior problems.

Although many employers felt that the challenges they faced in supervising these new employees resulted from a lack of employee training or maturity, a substantial number (29%) acknowledged that they – as supervisors – lacked the skills to effectively manage these individuals. This situation was also noted by MTTP program staff. One supervisor explained, "I've never really managed anyone like that in my life, but I think I'm totally capable of doing it if I was just a little bit more prepared." Supporting the need for management training, several employees (31%) felt that the workload assigned by their supervisors was a challenge, with either too many tasks to complete at once or being left with nothing to do.

The lack of shared life experiences also made it difficult for some supervisors and employees to connect and highlighted a need for greater cultural awareness or tolerance. One employee felt her personal situation was misunderstood by her coworkers:

I work with a bunch of white guys, I am the only black female; none of them have children, I am a single mom. Half of them still have their mom and dad in the same house. They say they understand but they don't really – they don't get me.

These employee perspectives are not surprising given their supervisors' lack of relevant management experience working with this population. Although many supervisors reported working with disadvantaged populations in the past, many of these experiences were with temporary summer youth employees or were more informal mentoring programs. Some supervisors also mentioned working with older adults. Few supervisors had previous experience supervising young adults in this age group who had been disconnected from the workforce, and for whom this work experience constituted a first 'real job'.

Discussion

The young adults in our study drew their motivation to seek out the MTTP from social networks, including school, internships, family, friends, and other community members. Once in their green

jobs, these individuals were motivated by their coworkers and supervisors, who served as mentors in their professional development. In addition, many supervisors echoed this belief and felt that they served as mentors to their employees. These findings support the importance of social networks in linking individuals with social and economic opportunity, especially for disadvantaged populations (Meléndez and Harrison, 1998; Hagan, 1998; Kleit, 2001). We found that not only did social networks help these young adults find employment, but they helped motivate the individuals to stay employed. The importance of the professional support and inspiration received by these young adults from their colleagues emphasizes the need for such programs to encourage and support mentoring throughout job training and the transition to full time employment.

The second most common motivating factor for seeking out job training and employment in urban environmental restoration was an appreciation for nature or desire to do environmental work. These thoughts and beliefs were driven by many of the unique qualities of green jobs that we found to convey benefits beyond employment. These aspects included the pleasure of working outdoors, being active, engaging in a variety of work, interacting with the public, and feeling that one was part of a larger movement and making a difference in the world. Employees also reported learning a variety of technical skills and environmental knowledge in their green jobs (beyond the initial job training). Environmental volunteers have been found to experience a host of benefits from their activities, including a sense of accomplishment as a result of improving the environment or their own neighborhood, learning new skills and gaining new experiences, experiencing spirituality or peace of mind, experiencing a greater sense of community and meeting new people (Westphal, 2003; Grese et al., 2000; Austin, 2002). We found that those working in urban green jobs enjoy the same benefits from their paid employment.

A majority of employees were found to have positive attitudes toward themselves, their work, and the environment following green jobs training and employment. In many cases, these attitudes were linked to individuals' feelings of increased awareness of the world around them and their role in making a positive impact on their community and on the environment in general. In addition to attitudinal changes, all employees described changes in environmental stewardship behavior ranging from engaging in community greening to deciding not to litter. These self-reported results support findings that pro-environmental attitudes combined with a sense of self-efficacy may lead to pro-environmental behaviors (Meinhold and Malkus, 2005; Bamburg and Möser, 2007; Chawla and Cushing, 2007; Taberner and Hernández, 2011). The environmental stewardship activities reported in the interviews further enhance the employees' role in local natural resource management, bringing individual, organizational and community benefits to their neighborhoods (Westphal, 2003).

Employees' positive attitudes also reflected pride in the responsibility they were given at work, which was echoed in supervisor interviews describing the need for reliability and trust in an employee. Unlike many job training programs, which focus on lectures and verbal knowledge transfer, the MTTP promotes enactive mastery and therefore may provide a better method of increasing participants' self-efficacy (Gist, 1987). Self-efficacy has been found to relate positively to interest in an activity (Bandura and Schunk, 1981), suggesting that after success during the training program and on the job, employees may develop interest in an environmental career. By recruiting and preparing trainees to meet the requirements of the local green job market, the MTTP is shaped by both supply-side and demand-side forces (Cooney, 2010). As a result, program participants learned the specific technical skills and knowledge that they would need to succeed in their green jobs.

Despite effective technical training, both employees and supervisors identified a variety of challenges that arose in the transition from the MTTP to full time employment. Even when individuals were highly motivated and had a positive attitude toward work, they often faced childcare or transportation challenges that undermined employment stability. Employees' difficulty balancing the demands of their personal lives with those of the workplace at times resulted in frequent absence or lateness, which could be incorrectly perceived by supervisors as a lack of motivation to work. Participants in the MTTP face a variety of structural and individual barriers including a lack of housing, limited transportation, lack of childcare, documentation of identity, substance abuse and criminal histories (Maddox et al., 2010). These young adults often lack basic resources that would enable them to get to work promptly and consistently (e.g. money for childcare or transportation) and may have little experience with managing workplace stress or personal finances. In addition, they may not have a realistic understanding of workplace dynamics, roles, and the tedium of long-term goal achievement. Many of these issues could potentially be addressed in the MTTP and in similar training programs for prospective employers of MTTP graduates.

Our research supports the idea that "soft skills" like attitudes, motivation, and emotional intelligence should not be overlooked in green-collar jobs training programs but are just as important as technical knowledge and skills (Georges, 1996; Gist and Stevens, 1998; Caudron, 1999). Most of the challenges experienced by employees and supervisors reflect the need for increased "soft skills" training in the MTTP, including expectations for appropriate workplace behavior, such as attendance, timeliness and professional demeanor. Unprofessional behavior can be disruptive in the workplace, causing employee and supervisor frustration, and may ultimately lead to lower job retention. While program graduates may initially need more attention and guidance as they transition to full time employment, it is important to note that they may face increased resentment in the workplace from both supervisors and other established employees if they are given special treatment. Establishing clear lines of communication and managing the expectations among employees, colleagues and supervisors is critical to prevent and mitigate this resentment.

Building a sense of accountability during the training program may help program graduates carry qualities of responsibility and leadership into their full time employment. In addition, increased follow-up with program graduates after they are placed in jobs may help support sustainable transitions out of poverty and address ongoing issues in the workplace. Employer training may better prepare supervisors for managing this unique population and ongoing support can help them troubleshoot specific conflicts. For these purposes, training programs need the assistance of qualified social workers or case managers who are culturally competent.

In addition to a positive attitude toward work, most employees were able to articulate a desired career path beyond their current position. Ongoing mentorship during the early years of employment may help training program graduates understand how this first position can help them to fulfill these long term goals, whether they remain in a green job or explore another career. While almost all employees reported learning environmental skills or knowledge during their green jobs training and employment, less than half reported learning office, organizational, or interpersonal skills. In order to benefit the employees' current and future job prospects, the training program should also incorporate certain office skills needed in almost every profession, including urban green jobs. These include basic computer skills (e.g. spreadsheets in Microsoft Excel, text documents in Microsoft Word, internet research) and training in email and phone communication. Further emphasis on these skills in green jobs training will prepare participants for any future career.

One limitation of this study is that we were unable to interview the MTTP participants who did not successfully graduate from the program or were not still employed approximately three months into their new positions. However, we know that out of a class of thirty trainees, five individuals did not complete the program were not able to commit to the full-time schedule of training and employment due to personal or financial obligations, such as taking care of family members. According to the MTTP Director, their attrition was not due to a dislike of outdoor or environmental restoration work. He explained that “no one ever disliked the nature of the work; no one ever said the work wasn’t a good fit for them.” There were five MTTP graduates who were not placed in green jobs due to the fact that there was only federal funding available for twenty positions. These individuals were less reliable or perceived to be less committed to the training program and as a result were not recommended as highly to employers as the twenty who were placed. Due to the depressed economic climate, employers were unable to hire MTTP graduates without external funding, as they were inundated with other, more qualified applicants for available positions. This outcome reinforces the fact that successful green-collar job training programs must be linked to employment for all participants (Apollo Alliance, 2008). Finally, four individuals who were placed in entry-level jobs were no longer employed when our interviews were conducted, 2–3 months after hiring. Three of these individuals moved away from New York State and one was terminated for poor attendance. We believe that the reasons for attrition in both MTTP and subsequent employment support our findings about the personal challenges and barriers to employment facing this population. Additionally, we believe that our inability to interview these individuals does not undermine our findings about the unique benefits of environmental work, as we have no evidence that any of the initial MTTP participants dropped out due to negative impacts of environmental work. Still, we encourage more comprehensive future analyses of green job training programs to address those who fail to graduate or remain employed, ideally for several years into the future.

Conclusion

Each year, more cities invest in green infrastructure and sustainability plans that will create the need for a well-trained green workforce. In the midst of the current economic recession, these jobs can provide important opportunities to those without years of work experience or an advanced degree. Green jobs training programs such as the MTTP are essential to ensuring that the greening of our cities provides opportunities for a vulnerable population: unemployed minority young adults. Overall, our findings reveal the significant challenges facing this target population of MTTP, but also the benefits of green job training and employment that are potentially transformational for these young adults. We emphasize the need for programs to be carefully structured to include increased “soft skills” training, computer and workplace communications skills, and supervisor preparation if they are truly to provide a transition to long term employment for those previously disconnected from the workforce. However, our research also shows that green job training and employment presents real opportunities for intellectual stimulation, socio-psychological benefits, and an increased sense of accomplishment, due in part to the uniqueness of environmental work. While we have documented some of the beneficial qualities of green jobs in this case study, we urge future research to determine whether there are differences in social and psychological outcomes between participants in environmental restoration jobs training and employment versus other job training programs.

The primary goal of job training programs such as the MTTP is to help graduates achieve sustainable success in the workplace. Understanding patterns of achievement and challenges faced by employees and supervisors and the impact of the program on an individual’s attitudes and behavior will help inform future training programs and to maximize the chances of long-term success for all program participants.

Acknowledgements

Thanks to the New York City Department of Parks & Recreation, Mayor’s Fund to Advance New York City, New York Restoration Project, USDA Forest Service State & Private Forestry, and to Bryant Smith for helping our team conduct respondent interviews for this study. The first year of the MillionTreesNYC Training Program was funded by private donations made to the Mayor’s Fund to Advance New York City from the Altman Foundation, David Rockefeller, Bloomberg Philanthropies and Cleveland H. Dodge Foundation, and public funds from the NYC Center for Economic Opportunity.

References

- American Institutes for Research (AIR), 2005. Effects of outdoor education programs for children in California. The California Department of Education, Sacramento, CA.
- Apollo Alliance, Green For All, 2008. Green-collar jobs in America’s cities: building pathways out of poverty and careers in the clean energy economy.
- Austin, M.E., 2002. Partnership opportunities in neighborhood tree planting initiative: building from local knowledge. *Journal of Arboriculture* 28, 178–185.
- Bamburg, S., Möser, G., 2007. Twenty years after Hines, Hungerford, and Tomera: a new meta-analysis of psycho-social determinants of pro-environmental behavior. *Journal of Environmental Psychology* 27, 14–25.
- Bandura, A., Schunk, D.H., 1981. Cultivating competence, self-efficacy, and intrinsic interest through proximal self-motivation. *Journal of Personality and Social Psychology* 41, 586–598.
- Barnett, J.P., Burns, A.C., 2012. The work of the Civilian Conservation Corps: pioneering conservation in Louisiana. General Technical Report SRS-154. USDA Forest Service Southern Research Station, Asheville, NC.
- Barton, J., Pretty, J., 2010. What is the best dose of nature and green exercise for improving mental health? a multi-study analysis. *Environmental Science & Technology* 44, 3947–3955.
- Baxter, J., Eyles, J., 1997. Evaluating qualitative research in social geography: establishing ‘rigour’ in interview analysis. *Transactions of the Institute of British Geographers* 22, 505–525.
- Bezdek, R.H., 1995. The net impact of environmental protection on jobs and the economy. In: Bryant, B. (Ed.), *Environmental justice: issues, policies, and solutions*. Island Press, Washington, DC, pp. 86–106.
- Caudron, S., 1999. The hard case for soft skills. *Workforce* 78, 60–67.
- Charmaz, K., 2001. Grounded theory. In: Emerson, R.M. (Ed.), *Contemporary field research: perspectives and formulas*. Waveland Press, Long Grove, IL, pp. 335–352.
- Chawla, L., Cushing, D.F., 2007. Education for strategic environmental behavior. *Environmental Education Research* 13, 437–452.
- City of Los Angeles, 2006. milliontreesLA, Retrieved September 25, 2012 from <http://www.milliontreesla.org/mtabout1.htm>
- City of Seattle, 2012. City of Seattle comprehensive plan, Retrieved September 25, 2012 from <http://www.seattle.gov/dpd/Planning/Seattles.ComprehensivePlan/ComprehensivePlan/>
- Cooney, K., 2010. The promise and pitfalls of employer-linked job training for disadvantaged workers. *Administration in Social Work* 34, 27–48.
- D’Amato, L.G., Krasny, M.E., 2011. Outdoor adventure education: applying transformative learning theory to understanding instrumental learning and personal growth in environmental education. *The Journal of Environmental Education* 42, 237–254.
- Feenstra, G., McGrew, S., Campbell, D., 1999. Entrepreneurial community gardens: growing food, skills, jobs and communities. University of California Agriculture and Natural Resources Publication 21587, University of California, Davis.
- Finch, C.R., 1995. Green brigade: horticultural learn-and-earn program for juvenile offenders. *HortTechnology* 5, 118–120.
- Georges, J.C., 1996. The myths of soft-skills training. *Training* 33, 48.
- Gist, M.E., 1987. Self-efficacy: implications for organizational behavior and human resource management. *Academy of Management Review* 12, 472–485.
- Gist, M.E., Stevens, C.K., 1998. Effects of practice conditions and supplemental training method on cognitive learning and interpersonal skill generalization. *Organizational Behavior and Human Decision Processes* 75, 142–169.
- Gordon, E., Hays, J., Pollack, E., Sanchez, D., Walsh, J., 2011. Water works: rebuilding infrastructure, creating jobs. In: *greening the environment*, Retrieved October 30, 2012 from http://www.pacinst.org/reports/water_works.pdf

- Grese, R.E., Kaplan, R., Ryan, R.L., Buxton, J., 2000. Psychological benefits of volunteering in stewardship programs. In: Gobster, P.H., Hull, R.B. (Eds.), *Restoring nature: perspectives from the social sciences and humanities*. Island Press, Washington, DC, pp. 265–280.
- Hagan, J.M., 1998. Social networks, gender, and immigrant incorporation: resources and constraints. *American Sociological Review* 63, 55–67.
- Hamilton, G., 2002. Moving people from welfare to work: lessons from the national evaluation of welfare-to-work strategies. U.S. Department of Health and Human Services and U.S. Department of Education.
- Holzer, H.J., 2012. Good workers for good jobs: improving education and workforce systems in the US. *IZA Journal of Labor Policy* 1, 5.
- Huang, W.-R., 2009. A comparison of the influences of different training approaches on trainees' perceptions of self-efficacy to achieve training outcomes among bankers in Taiwan. In: Ph.D. Thesis. Ohio State University Department of Physical Activities and Educational Services, Columbus.
- Hull, R.B., 1992. Brief encounters with urban forests produce moods that matter. *Journal of Arboriculture* 18, 322–324.
- Jiler, J., 2006. *Doing time in the garden*. New Village Press, Oakland, CA.
- Jiler, J., 2009. Restoring lives, transforming 758 landscapes: the GreenHouse program at Rikers Island Jail. Restorative commons: creating health and well-being through urban landscapes. USDA Forest Service Northern Research Station, pp. 11–23. General Technical Report NRS-P-39.
- Jones, V., 2008. The green-collar economy: how one solution can fix our two biggest problems. HarperCollins, New York, NY.
- Kaplan, R., 1973. Some psychological benefits of gardening. *Environment and Behavior* 5, 145–162.
- Kingsley, J.Y., Townsend, M., Henderson-Wilson, C., 2009. Cultivating health and wellbeing: members' perceptions of the health benefits of a Port Melbourne community garden. *Leisure Studies* 28, 207–219.
- Kleit, R.G., 2001. The role of neighborhood social networks in scattered-site public housing residents' search for jobs. *Housing Policy Debate* 12, 541–573.
- Kouri, R., Clarke, A., 2012. Framing 'green jobs' discourse: analysis of popular usage. *Sustainable Development*, <http://dx.doi.org/10.1002/sd.1526>.
- Lafer, G., 2002. *The job training charade*. Cornell University Press, Ithaca, NY.
- Leahey, E., 2001. A help or a hindrance? the impact of job training on the employment status of disadvantaged women. *Evaluation Review* 25, 29–54.
- Lofland, J., Snow, D.A., Anderson, L., Lofland, L.H., 2006. *Analyzing social settings: a guide to qualitative observation and analysis*. Thomas Wadsworth, Belmont, CA.
- Loomis, C., Brodsky, A.E., Arteaga, S.S., Benhorin, R., Marx, C.M., McLaughlin, P., 2003. What works in adult educational and employment training? case study of a community-based program for women. *Journal of Community Practice* 11, 27–45.
- Maddox, D., Aucoin, B., Hawkins, L., Zanin-Pereira, D., Monaco, M., Newman, A., Barnes, M., Campbell, L., Locke, D., Svendsen, E., 2010. Supporting success: making the transition to green collar jobs. Million Trees NYC, NYC Center for Economic Opportunity. USDA Forest Service Northern Research Station, New York, NY.
- McGuinn, C.P., 1999. An assessment of a vocational horticulture training curriculum at a school for juvenile offenders. Masters of Science Thesis. Virginia Polytechnic Institute and State University, Blacksburg.
- Meinhold, J.L., Malkus, A.J., 2005. Adolescent environmental behaviors: can knowledge, attitudes, and self-efficacy make a difference? *Environment and Behavior* 37, 511–532.
- Meléndez, E., Harrison, B., 1998. Matching the disadvantaged to job opportunities: structural explanations for the past successes of the center for employment training. *Economic Development Quarterly* 12, 3–11.
- Metis Associates, 2009. MillionTrees Training Program Participant Focus Group Summary Report. Prepared by Metis Associates for the NYC Center for Economic Opportunity, New York City, NY, pp. 11 pp.
- Moseley, C., 2006. Ethnic differences in job quality among contract forest workers on six national forests. *Policy Sciences* 39, 113–133.
- Moseley, C., Toth, N.A., 2004. Fire hazard reduction and economic opportunity: how are the benefits of the national fire plan distributed? *Society & Natural Resources* 17, 701–716.
- Muro, M., Rothwell, J., Saha, D., 2011. Sizing the clean economy: a national and regional green jobs assessment. The Brookings Institution, Washington, DC.
- Philadelphia Water Department, Retrieved September 25, 2012 from http://www.phillywatersheds.org/what.were.doing/green_infrastructure 2012. Green stormwater infrastructure.
- Pinderhughes, R., 2007. Green collar jobs: an analysis of the capacity of green businesses to provide high quality jobs for men and women with barriers to employment. The City of Berkeley Office of Energy and Sustainable Development, Berkeley, CA.
- Pindus, N.M., O'Brien, C., Conway, M., Haskins, C., Rademacher, I., 2004. Evaluation of the sectoral employment demonstration program. The Urban Institute, Washington, DC.
- Pudup, M.B., 2008. It takes a garden: cultivating citizen-subjects in organized garden projects. *Geoforum* 39, 1228–1240.
- Rademacher, I., 2002. Working with value: industry-specific approaches to workforce development. Aspen Institute, Washington, DC.
- Rice, J.S., Remy, L.L., 1998. Impact of horticultural therapy on psychosocial functioning among urban jail inmates. *Journal of Offender Rehabilitation* 26, 169–191.
- Sandler, L., Vandergrift, J.A., VerBruggen, C., 1995. From desert to garden: reconnecting disconnected youth. *Educational Leadership* May 1995, 14–16.
- Schusler, T.M., Krasny, M.E., 2010. Environmental action as context for youth development. *The Journal of Environmental Education* 41, 208–223.
- Schusler, T.M., Krasny, M.E., Peters, S.J., Decker, D.J., 2009. Developing citizens and communities through youth environmental action. *Environmental Education Research* 15, 111–127.
- Sheffield, B.K., 1992. The affective and cognitive effects of an interdisciplinary garden-based curriculum on underachieving elementary students. University of South Carolina College of Education, Columbia, Ph.D. Thesis.
- Sneed, C., 2000. Seeds of change. In: YES! Magazine, Fall 2000.
- Strauss, A., Corbin, J., 1990. *Basics of qualitative research grounded theory procedures and techniques*. Sage, Newbury Park, CA.
- Stone, E., 2009. The benefits of community-managed open space: community gardening in New York City. In: Restorative commons: creating health and well-being through urban landscapes. General Technical Report NRS-P-39, USDA Forest Service Northern Research Station, pp. 122–137.
- Taberner, C., Hernández, B., 2011. Self-efficacy and intrinsic motivation guiding environmental behavior. *Environment and Behavior* 43, 658–675.
- Westphal, L.M., 2003. Urban greening and social benefits: a study of empowerment outcomes. *Journal of Arboriculture* 29, 137–147.
- Wolf, K.L., 2003. Youth and mental health: work projects in urban green space. In: Kollin, C. (Ed.), *Engineering green: proceedings of the 11th National Forest Conference*. American Forests, Washington, DC.