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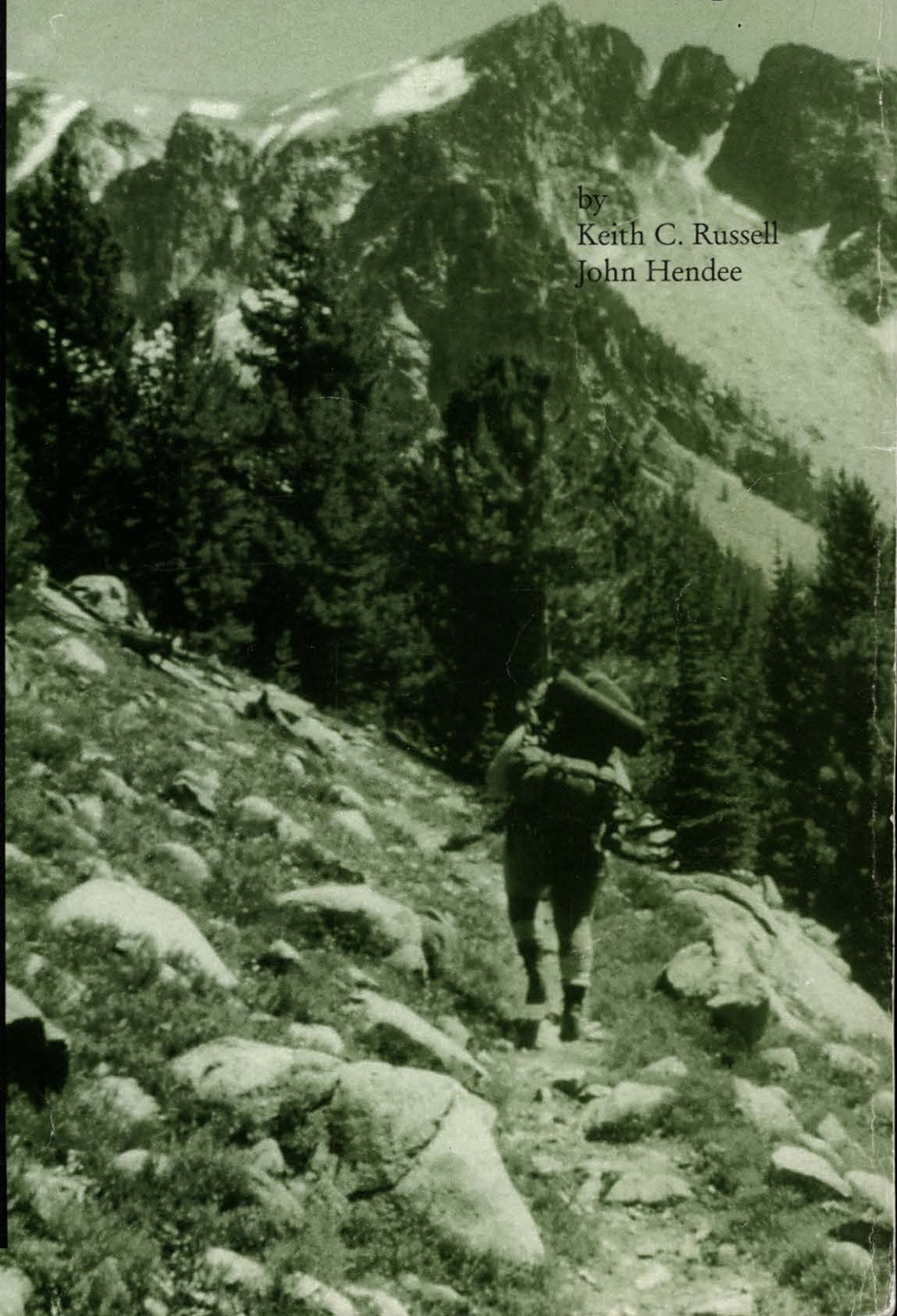
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Testing Wilderness Discovery

A Wilderness Experience Program for
Youth-at-Risk in the Federal Job Corps

by
Keith C. Russell
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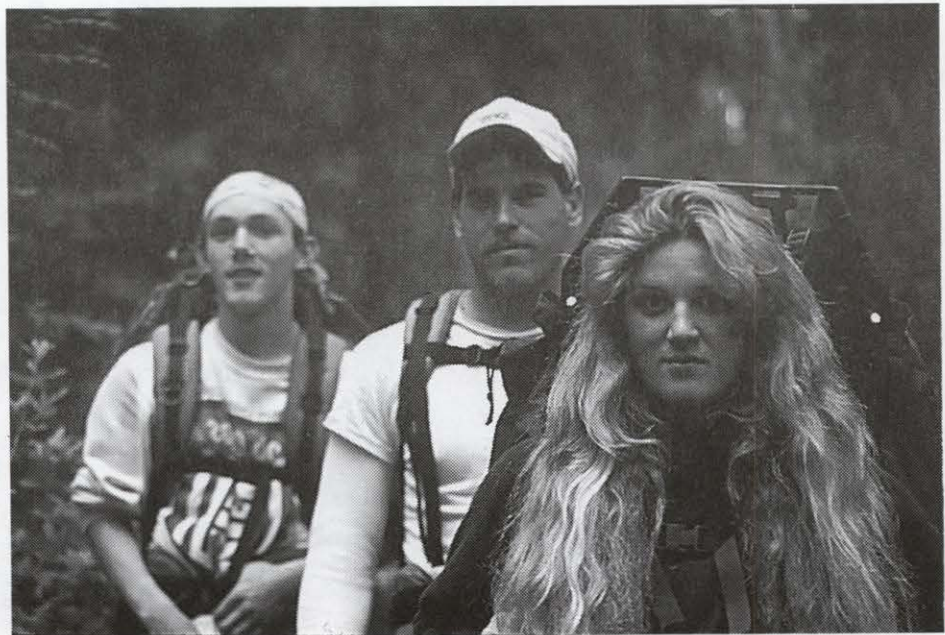
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Wilderness Discovery was developed by the University of Idaho Wilderness Research Center to help youth-at-risk in the federal Job Corps.

Introduction

Wilderness Discovery (WD) is a wilderness experience program specifically designed to empower and strengthen the skills and motivation of youth-at-risk in the federal Job Corps. Wilderness Discovery was developed in 1993 when the University of Idaho Wilderness Research Center ran six seven-day trips at the Curlew Job Corps Center. On the strength of positive results in that feasibility test, we implemented a two-year pilot program and study during which we ran thirty-nine additional trips at four Job Corps centers: Curlew Job Corps Center on the Colville National Forest in Washington, 1993-95; Trapper Creek Job Corps Center on the Bitterroot National Forest in Montana, 1994-95; Timberlake Job Corps Center on Mt. Hood National Forest in Oregon, 1994-95; and the downtown Atlanta Job Corps Center, running trips on the Nantahala and Cherokee National Forests in North Carolina and Tennessee, 1995. This paper presents the results of evaluating the two-year pilot program and study, including 38 trips in 1994-1995 and results from the six trips in 1993 during the feasibility study.

The downtown Atlanta Job Corps Center has about 400 students, with approximately 90 percent being African American women, ages 16-24. We brought Wilderness Discovery to Atlanta to test the effects of a wilderness experience program on inner-city minority youth, many of whom had not been outside an urban environment. The young women at the Atlanta Job Corps, many with children, posed a new challenge to Wilderness Discovery, with nearly all of them being from intense urban environments without any previous exposure to wilderness. We were pleasantly surprised at how well they liked the experience and to see the positive impact it seemed to have on them. Trapper Creek Job Corps Center continues to run Wilderness Discovery and is the focus of an ABC one-hour television documentary on Job Corps and Wilderness Discovery called "Miracle at Trapper Creek."

Job Corps

Job Corps is a flagship program of the U.S. Department of Labor, established in 1964 to alleviate the severe unemployment, education, and social problems faced by disadvantaged youth in the United States, especially those who live in poverty areas. The program is targeted at youth 16-24 years old, of which 84 percent are high school dropouts with a seventh grade average reading level and no formal job training (Navarro, 1990). Problems with high school dropouts and unemployment are increasing as the population of youth considered at risk continues to grow. Although youth employment rates are rising due to favorable economic conditions, unemployment rates for 16-to-19-year-olds remain near 20 percent overall and over 40 percent for black youths (Reich, 1994). The major goal of the Job Corps is to prepare eligible youth for future employment by providing opportunities at more than 130 residential centers for students to obtain a high school equivalency certificate (GED), receive vocational training, and develop social skills. Job Corps trains eligible youth for employment by providing training in skill trades such as building maintenance, carpentry, business/clerical, culinary arts, welding, masonry, forestry, and others. Young people who generally have

A key goal of the study was to determine if participation in Wilderness Discovery by Job Corps students would lead to reduced termination rates, enhanced performance in vocational and educational training, and behavior that would increase their life prospects upon graduation.



not completed their education and are unemployed are actively recruited through Job Corps recruitment offices.

Job Corps enrollees generally have low levels of education, a high incidence have had brushes with the law prior to enrolling (Mathematica, 1985). The Job Corps approach to rehabilitation of youth is holistic, offering a group of extremely needy young people a viable alternative to the streets, to welfare, to crime, and to life-long unemployment. Although students can stay in Job Corps for up to two years, the national average length of stay is 203 days (Navarro, 1990). This limited average length of stay compared to the two years that is made available is largely due to a high rate of early terminations rather than graduations. Navarro (1990) reports that 34 percent of student enrollees age 16 left Job Corps within 90 days of entering the program. Previous studies indicate that students who stay in Job Corps at least 180 days and complete their vocational training are most likely to obtain job placement (Navarro, 1990). Furthermore, Navarro (1990) concludes in the study of average length of stay that:

“There is a significant correlation between the average length of stay, matched employment with vocational training, measured achieved learning gains, and program completion. Centers who ranked high in matched employment with vocational training, number of students who attained GED, achieved learning gains, and program completion ranked high in average length of stay” (p. 97).

Reducing early termination rates, increasing education and vocational training completion rates, and otherwise enhancing student performance are Job Corps priorities.

Thus, a key goal of the study was to determine if participation in Wilderness Discovery by Job Corps students would lead to reduced termination rates, enhanced performance in vocational and educational training, and behavior that would increase their life prospects upon graduation. We anticipated such effects if Wilderness Discovery increased self-esteem and sense of personal control, as reported in other studies of wilderness experience programs and especially in studies of youth-at-risk.

Investing in Youth-at-Risk in Job Corps Youth-at-risk is a term that is widely used with many different definitions in the literature. The range of young people aged 16-19 who could be considered “at-risk” could be as high as one in four (Davis-Berman & Berman, 1994). The problems associated with this expanding population of needy youth are evident. One of every 12 high school students has attempted suicide one or more times in the past year (Ibid.). The rate of adolescent suicides has tripled in the last 30 years and is now the third leading cause of death in this age group (Berman and Jobes, 1991 in Davis-Berman & Berman, 1994).

These disturbing statistics are made more revealing by the estimate that 70 to 80 percent of young people with clinical and mental disorders may not be getting the mental health services they need (Tuma, 1989 in Davis-Berman & Berman, 1994). Traditional treatment, such as hospitalization, can engender passivity and learned helplessness and can actually be more restrictive than helpful in treating the disorder.



Job Corps provides education, vocational training, and social skills for young people to earn and keep a job in the competitive labor market today.

Youth-at-risk are incurring, or have the potential to incur, direct costs to society in terms of transfer payments, reduced output of goods and services, reduced tax payments, costs associated with drug and alcohol abuse, and criminal activity (Mathematica, 1985). Investment in rehabilitating youth-at-risk by using the therapeutic values of a wilderness experience might help reduce or avoid such costs (Levitt, 1988). This could be especially true if the youth-at-risk are enrolled in an ongoing educational, training program such as Job Corps, with a wilderness experience program aimed at supplementing its effectiveness by enhancing self-esteem and sense of personal control.

Job Corps provides education, vocational training, and social skills for young people to earn and keep a job in the competitive labor market today. By providing training to young people at-risk, society is avoiding the potential long-term costs associated with criminal detention, drug/alcohol abuse, and welfare payments that await so many young people at-risk who head down a self-destructive path.

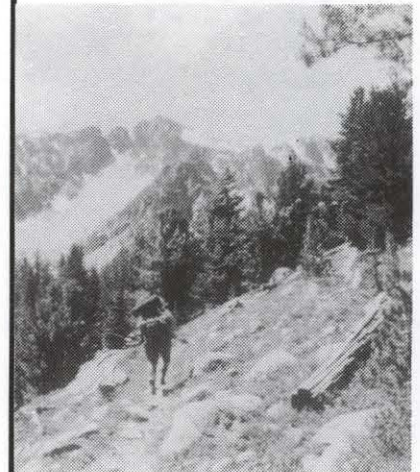
It is estimated that there are as many as five million youth who fit the general characteristics of youth-at-risk, and of that population less than 5 percent of youth eligible for Job Corps are participating in the program (McCarthy, 1995). The investment made by the public and private sectors, and the increasing demand for the Job Corps program, illustrate that the United States is willing to and will continue to invest in youth-at-risk.

Wilderness Discovery in Job Corps

Wilderness Discovery was designed to supplement Job Corps training with a soft skills, low-stress, low-risk wilderness experience designed to improve self-esteem, cooperation, social skills, and to empower and strengthen the ongoing training students are already receiving. The focus of a Wilderness Discovery experience is a 20-25 mile, seven-day backpacking trip, including camping for six nights on the trail, sharing of camp and cooking chores, and completing some work to give back to the wilderness in appreciation for the experience. Most students had never backpacked before Wilderness Discovery (92%), reinforcing the notion that a wilderness experience is a unique experience for economically disadvantaged young people.

Objectives of the Wilderness Discovery program:

1. To help individuals improve self-esteem and awareness by applying and expanding the Job Corps social skills curriculum in a wilderness living situation, thereby providing opportunities for students to experience multiple successes in learning, cooperation, communication, and sharing.
2. To teach basic wilderness skills so students can comfortably live and travel in balance with nature and with each other in a natural environment (take care of themselves and cooperate). The lessons learned in Wilderness Discovery have the potential to become metaphors for daily life and support life-long leisure skills.



A Job Corps student hikes up a trail in the Bitterroot National Forest in Montana.

3. To enable students (through alone time, journaling, and individual and group processes) to clarify their current situations, patterns, personal identity, and roles in society, thereby creating opportunities for new visions and possibilities for success and achievement to emerge.
4. To help each individual develop some kind of vision to help guide them through Job Corps and beyond, to secure employment and move toward personal goals embracing a more productive and rewarding role in society.
5. To provide a quality wilderness experience for economically disadvantaged youth who normally lack such opportunities, including exposure to new life experiences and increased awareness of the environment.
6. To gain experience operating Wilderness Discovery for its refinement and potential future adoption at other Job Corps centers and to help make Job Corps more effective.

Contact with the wilderness was emphasized by using tarps for shelter in lieu of tents, no flashlights or watches to foster living by natural rhythms, and a primarily vegetarian, low-sugar and low-caffeine diet. All forty-five trips were in national forests, with most of them in designated wilderness and a few in roadless areas.

Group circles were conducted daily, giving students a chance to speak out and for leaders to assess how they were doing individually and as a group. The opportunity to practice social skills in a neutral environment was a powerful experience for the students. Fears, hopes, dreams, and goals were shared with the group in an open and non-threatening setting. A community ethic evolved and the group became a family. Completion of the trip culminated with discussions of what they had learned and what metaphors could be taken back to their daily lives at Job Corps.



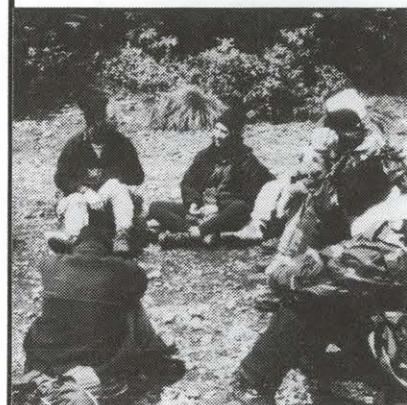
Design of Wilderness Discovery: A Soft Skills Approach

In the development and implementation of Wilderness Discovery, we emphasized a "soft skills" approach to individual and group processes, focusing on helping students expand their sensitivity, insight and awareness, and to reflect on and evaluate their patterns of behavior, values, beliefs, and motivations. This is in contrast to a "hard skills" or challenge adventure approach emphasizing competition, stressful exercise, and significant risk—real or perceived. Hard skill challenge adventure activities may include such things as marathon hikes, rock climbing, ropes exercises, traversing snowfields, and major river crossings. Soft skills include both group and individual activities such as community circles, group and individual problem solving, reflection, alone time, and guided and introspective journal writing (Hendee and Pitstick, 1993, Pitstick, 1995).

We believe that soft skills are critical to a positive wilderness experience for Job Corps students—a component that students can effectively utilize in their individual efforts to succeed in Job Corps and their eventual return to society. Such students typically have had few success experiences, have little mental discipline, and are often in poor physical condition, despite robust appearances. To push them beyond their ability (hard skills) is to risk another perceived failure. So we sought to make WD a soft skills program with just enough rigor to stretch students to full awareness of their physical being and moderate fatigue to burn off stress and facilitate awareness of self and others. In this condition the potential for insight, self evaluation, and cooperation is heightened. At such a "growing edge" (Hendee & Brown, 1987), students can reflect on what their current patterns of behavior are doing to their lives and what their potential for growth and achievement could be.

Community Circles

Community circles are at the heart of Wilderness Discovery soft skills, and emerged during the refinement of WD in 1994-1995 as part of the governing process where students and leaders decided together how to handle various situations as they evolved and determined what should be done to deal with a given situation. Community circles are an integral component of a soft skills approach. They provide an environment for at-risk youth to practice social skills, goal setting, and address personal or group issues that might arise on the trip. Circles are held at least twice daily (after breakfast and after dinner) and three or more group circles in a day might be common. As the name implies, all members of the group sit in a circle for the purpose of sharing or exchanging information. We utilized a "talking stick" (sometimes called the power object) whereby only the group member with the stick was allowed to speak. This served two purposes: first, the use of the stick creates space within the group for every individual to be heard (i.e., to find their respective "voice"); and second, the use of the stick helped all other group members develop their listening skills. At every circle, every member of the group was given the opportunity to speak and to share whatever ideas they deemed important. It was remarkable how eagerly most students embraced the circle processes; for some, it was a rare opportunity to talk about issues in their lives as well as listen to other student's issues.



We utilized a "talking stick" (sometimes called the power object) whereby only the group member with the stick was allowed to speak.

Any member of the group could call a circle at any time. The most common circles dealt with safety issues (which will be described in more detail shortly), while other circles were used as "check-ins" on how everyone was feeling, such as during a lunch break or while on a long hike. Often circles evolved into group sharing of reflections on such things as their relationship with Job Corps, their goals for the future, their feelings about the Wilderness Discovery experience, how to organize and prepare for the next activity such as meal preparation and cleanup, work details, free time, and so forth. While there is usually some risk that the circle process might be abused, such as being dominated by a few people, students quickly learn that every member of the group shares in the responsibility for making the circle work. This is one of the earliest forms of "community" that Job Corps students experience while on a Wilderness Discovery trip, an experience to which they readily responded—perhaps because of deficits in previous experiences and feelings of safety and belonging in their own life histories. It was common for students to declare after about four days "hey, we are like a family now."

Students were first exposed to the use of circles as part of the Wilderness Discovery experience at the pre-trip meeting, usually held the night before leaving for the wilderness. During this circle, each student was asked to share with the group their particular reasons for wanting to go on the trip as well as their previous backpacking experience, if any. Students were reassured that there were no "right" or "wrong" answers for wanting to go on a Wilderness Discovery trip.

Group circles empower students in many ways and provide excellent opportunities for students to practice most of the fifty social skills they've been exposed to in Job Corps. Many students begin their Wilderness Discovery experience with the expectation that no one really cares or is interested in them as a person, or is willing to listen to them. This expectation stems from their life experience. Yet, invariably, within the first two or three days of the trip they began to realize that people (leaders and their peers) are listening, that people are responding to their concerns. The use of the circle facilitates this kind of personal discovery.

Thus, circles are used for much more than just safety issues or dealing with negative behaviors. The circle is a highly effective and safe environment for trip members to check in with each other, to share aches and pains, and high and low points of the day. Other circles provide the space for reflection. In listening to the stories of other students, they become aware that they share a great deal in common with each other, an awareness they often lacked prior to the trip. Other circles empower the group to talk about teamwork, how teamwork impacted the days activities, and any metaphors being experienced in the wilderness. Other circles empower students to share hopes, dreams, and visions, as well as fears for the future. The circle is also the safe space where the group can explore the "return"—the inevitable and necessary return to daily life with its stress and struggle.

Safety Circles

The safety circle warrants review as the single most important circle of the Wilderness Discovery experience. The safety circle is based on the idea that accidents in the wilderness don't just happen, but are in some sense a plea or a

[In the safety circle] each person also has an opportunity to express any doubts or reservations about themselves or any other member of the circle.

cry for help. One of the functions of the safety circle is to persuade everyone present that we care about ourselves and each other, that we accept responsibility for the safety of ourselves and each other.

Though the particular format or content may vary from trip to trip, the purpose is always the same. In the safety circle, every member of the trip (including staff) has an opportunity to explicitly commit themselves to personal safety and to the safety of each and every single member of the circle for the duration of the trip.

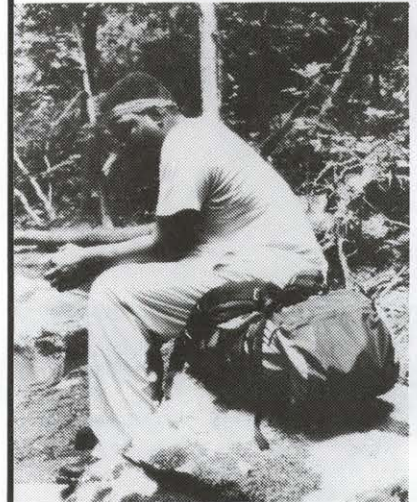
The procedure and purpose of the safety circle and the theory behind it is explained to participants. Then the more common accidents, injuries, and illnesses associated with backpacking are reviewed, such as strains, sprains, and bruises due to falls, blisters, obstacles, water crossings, lack of attention on the trail or in camp, and lifting/removing packs. The need for personal hygiene is stressed, as well as natural dangers such as ticks, snakes, and bear. Students are reminded that safety concerns, no matter how "minor," should be reported to and recorded by designated staff.

Any first aid background that a leader, intern, staff member, or student participant has should be shared with the group at this time. The leader should remind the group that safety issues take precedence over all other activities, and that the trip leader's decisions about safety issues (after careful consultation with others) will be the final word. Beginning with the leader, every member of the circle makes a statement accepting full responsibility for the safety of every member of the circle and publicly commits themselves to not having an accident on the trip. Each person also has an opportunity to express any doubts or reservations about themselves or any other member of the circle.

Not only is the safety circle crucial to the physical well-being of all participants, it also engages Wilderness Discovery participants psychologically. For example, students begin to develop both a sense of their personal identity within the group (i.e., taking individual responsibility for personal safety) as well as a sense of group identity (i.e., accepting responsibility for the safety of each other).

Alone Time

Another soft skill is alone time. Two full layover days are normally scheduled into each Wilderness Discovery trip. Additionally, there are often two or three hours of available time at the end of each hiking day. Students are strongly encouraged to use at least part of this time to be alone, to simply "tune in" to where they are and what they are experiencing—to sit alone and watch, listen, smell, and feel the pulse of nature and their own relationship to it. For some students, this is an opportunity to catch up on sleep (especially early in the trip) while taking advantage of the opportunity to spend time by themselves and be alone. Attunement to nature and its healing, decompressing, and inspiring effects is a key goal of Wilderness Discovery. Further, it is only by getting in touch with oneself and developing self-knowledge during alone time that one can better understand how they can relate to the group.



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Journaling

Guided and introspective journal writing is another type of soft skill. Participants in Wilderness Discovery are given a journal at the beginning of each trip as part of their basic equipment. Throughout the trip they are encouraged to express themselves in writing. There is often initial resistance to this activity, usually because of poor penmanship, lack of spelling abilities, and difficulty in expressing themselves. Yet, as their trust in both the program and the leadership grows, many students find themselves enjoying the opportunities to write.

Students are sometimes guided in their journaling with suggested topics to reflect on and write about, such as how they think their wilderness experience might affect them when they return to Job Corps, or to describe what they thought they had learned about themselves and other group members while in the wilderness. At other times, students were simply encouraged to write about whatever was important to them at that point in time. Their writing provided a rich source of data on the meaning to them of participating in Wilderness Discovery. Over the three years of operating Wilderness Discovery, we discovered that, while suggestions of topics to reflect on and write about may be okay to get journaling started, an open-ended approach is best once the students get comfortable recording their thoughts and insights. Quiet time in the natural environment stimulates thinking, creating many ideas to write about. It's also a time to reflect on personal feelings/insights and to describe them.

Individual and Group Problem-Solving

Another soft skill component of Wilderness Discovery is individual and group problem-solving. One characteristic of youth-at-risk is a history of repeated failure. In fact, many students arrive at Job Corps with the acquired expectation that they will fail no matter what they do. The wilderness environment is uniquely suited for creating opportunities for success. For almost all Job Corps participants, being in the wilderness is a totally new experience. Learning how to successfully load and carry a pack, pitch a tarp, build a fire, filter water, cook on portable stoves, carry out a "bear hang," and dozens of other basic wilderness skills provided students with almost continuous opportunities to develop new skills and immediately see (evaluate) the results of their efforts. Feedback in the wilderness environment is seldom ambiguous. Remaining dry in a rain shower in the middle of the night under a well pitched tarp is a joyful experience, whereas the adverse consequences of having been careless are immediate and unforgiving. Staying dry through the night was a simple, but effective, reminder to each student of their degree of success in learning to properly set up camp.



Each student was provided a journal and given time and encouragement to write about their wilderness experience.

During the two layover days, students were encouraged to go "dayhiking" in groups of three without a staff member. Our "rule of three" was based on the assumption that students in groups of three were more likely to make positive or appropriate decisions than groups of two, and also made outings of mixed-gender groups possible. Though additional rules might apply to day hikes based on student conduct, situation, and terrain, students were empowered to make decisions for themselves, i.e., where should we go? how do we get there? can we have a good time without violating our commitment to safety? can we find our way back to the base camp? Thus, students were required to deal with issues of accountability and responsibility for their behavior. Empowering students to make decisions in the wilderness gives them the opportunity to put responsibility into practice in a new environment away from their prevalent culture, which requires new thinking and initiative. Again, learning and implementing basic wilderness skills provided virtually unlimited opportunities for group and individual problem-solving. Careful facilitation of these opportunities by Wilderness Discovery staff ensured that the students had many chances to experience success.

A final key point is that the students loved these opportunities to work together and create simple plans for a short outing, addressing such basics as "should we take water?"; "do we need a water filter?"; "how will we know when it is time to come back?"; etc. The metaphor of planning and successfully carrying out group activities and outings in the wilderness can be directly transferred to activities back at their center.

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Wilderness Discovery Field Effects

Introduction

We were interested in how participating in Wilderness Discovery affected students. What did they learn? How did it affect their social skills? Did completing Wilderness Discovery enhance self esteem, and if so, how might it be a positive influence on their lives and society? Did completing this experience enhance their performance in Job Corps and, thus, make them more employable? Did it reduce early terminations?

We analyzed student journals, post-trip exit- interviews, compared termination rates of participants with matched control groups, and critiqued every trip with a WD Steering Committee of Job Corps staff. At the end of the summer, we completed a focus group process with WD Steering Committees at each center to elicit a consensus of their expert judgments about the perceived benefits of WD.

We were also interested in field effects data that reflected the characteristics and accomplishments of the individual trips and collective totals. Data were recorded in WD leader journals for every trip at each center including: participant characteristics, trail encounters with other parties, miles covered hiking, trail conditions, and work hours expended on trails and campsites. This information illustrated some of the impacts WD was having in the field, and was helpful in planning and coordinating travel and identifying needs for wilderness rangers in each district. Table 1 shows summaries of field data gathered from 38 Wilderness Discovery trips at four centers during 1994 and 1995.

Field Effects: Trips, Participants, and Work Completed

An average of five trips per year were operated from each of the four centers during 1994-1995, with a total of 38 trips for the pilot program, representing 252 days in the field (Table 1). Each Wilderness Discovery trip was planned for seven days, but some days in the field were lost due to logistical problems and inclement weather.

A total of 314 students participated in Wilderness Discovery, more than half of them female, with the number of female participants greatly increased with the addition of the Atlanta Job Corps Center, where over 80 percent of the participants were female. Trip capacity was nine students, except in some locations in the East where total party size was limited by wilderness regulations to ten people, thus requiring trips to be limited to seven students plus the leader, assistant, and a Job Corps staff person. The fact that the average trip had only eight students reflected a consistent pattern of losing one or two students between the sign-up/orientation meeting and departure the next day. This was especially the case in the Atlanta Job Corps Center where many students lived off-center and had difficulties finding baby-sitters and getting time off part-time jobs—adding to the list of occasional no-shows upon departure. Other reasons for students dropping out at all centers included changing their minds, not wanting to miss an opportunity to go for home leave, and for some, the fear of an unknown experience.

The 38 Wilderness Discovery trips at the four participating centers in 1994-1995 covered over 679 miles of wilderness trail, an average of eighteen miles per trip.

We always invited a Job Corps staff person to go on each trip and a total of eighteen Job Corps staff participated in Wilderness Discovery, about one half of them female (eight). The participating Job Corps staff held positions ranging from an executive secretary in Atlanta, the alcohol and substance abuse specialist at Trapper Creek, to counselors and teachers at each center. The general response of the staff participating was extremely positive and many of them were very positively impacted. The staff members were able to interact with the students in an entirely different manner while taking the time to look at their own lives and roles at the center in a different light.

Most of the Wilderness Discovery student participants were young, averaging about 18 years of age. Seventy-seven percent of the students were 20 years or younger (Table 2).

Length of Stay in Job Corps As indicated in Table 3, the vast majority of Wilderness Discovery participants had been at Job Corps less than twelve months and more than half of them had been there six months or less. The average length of time students had been in Job Corps before going on Wilderness Discovery was 5.6 months.

Total Trip Miles and Work Completed The 38 Wilderness Discovery trips at the four participating centers in 1994-1995 covered over 679 miles of wilderness trail, an average of eighteen miles per trip (Table 4). What Wilderness Discovery leaders began to learn is that each trip called for different levels of physical and mental stimuli for students to achieve an optimum, given the mix of students on that trip. Leaders then began to design trips around those students' abilities and needs. For example, one trip of a particularly robust group at Trapper Creek in Montana covered a distance of 36 miles, while in Atlanta, a trip with a very different student population covered only thirteen miles—both of these trips pushed their participants to comparable physical and mental levels. We found that the Job Corps students were generally in poor physical condition and had a limited view of what they could do. According to their journals, they accomplished more physically and mentally than they thought possible.

Important wilderness work was completed by Wilderness Discovery participants. During the course of each seven-day trip, an average of twenty-five person hours of work was completed. At twelve dollars an hour, that is equivalent to \$11,436 value of work done by Wilderness Discovery in the field. Wilderness Discovery was not designed to be a "work program" in the sense of Civilian Conservation Corps (CCC) and the Student Conservation Corps (SCA). For Wilderness Discovery, work was a therapeutic/personal development activity through which leaders encouraged the ideal of "giving something back to the wilderness." The students responded well to this ethic and enjoyed doing the work even on layover rest days. It was also common for students to express their desire in group discussion, to "give something back to society," for the educational and vocational training they were receiving in Job Corps. The work component also gave the students a very tangible representation of what kind of impacts humans make in the wilderness when they do not employ a "Leave-No-Trace" ethic. The positive difference they made to damaged areas was readily apparent and they could see the positive impact from a hands-on approach of taking responsibility for their actions.



Students were encouraged to give something back to the wilderness by completing some wilderness work to show their appreciation.

Work projects completed included: site rehabilitation (e.g., removing permanent fire pits, dismantling sites too close to water sources and trails, etc.); garbage clean-up, both on the trail and at established campsites; and trail rehabilitation (including restoration and maintenance of water bars, removal of down trees and limbs, and clearing overgrown brush on trails). Coordination with the National Forest Ranger District where trips took place was crucial to accomplishing meaningful tasks, both for the Ranger District and the students. Wilderness Discovery has the potential to do an important amount of valuable work, without it being a "work program." Students enjoy and identify with the "wilderness stewardship" opportunities and see the need for direct "hands-on" action in rehabilitating trails and campsites. The work also provided many good learning opportunities for leaders to facilitate important environmental education discussions.

Student Effects: Journaling

Students were given journals and asked to keep a record of their experience during the seven-day backpacking trip. We gave them time during layover days and after meals, when they could think about pressing issues in their lives and record their thoughts. We found that students with higher reading and writing abilities were more comfortable in their writing and reflections on the experience, and thus wrote more words and reflective comments. Other students, who focused less on their journals, revealed rich insights about their experience through the exit-interviews.

Journal entry . . .

"The moon is almost full. The fire tickles the cold night air. The calm peace about the camp allows me to have clear thoughts. It is a nice feeling, for I haven't had a chance like this for over eight months. I can wonder about the stars in the sky, I can wonder about myself, I can wonder about the others sleeping (or just waiting for their turn), or I can wonder where my home really is. Is it here in the forest, or is it where I screened in from? The last 7 days has really made me wonder. I might also wonder why I have conflicts with other students. Is it them or is it me?"

There are other important variables to be considered when analyzing student journals because many things influenced the extent and quality of journaling. For example, some leaders, while within the framework of WD protocol, may have placed a different emphasis on journaling. Weather and trail conditions, the social dynamics of the group, and the time of year were also factors (trips earlier in the season had more insects and extreme weather than those later in the season). Such factors, individually or collectively, played a role in providing a suitable environment for quality journal writing. Nevertheless, journaling was a regular activity on all WD trips.

There were two approaches used to analyze student journals. The first was an intense content analysis of each student's journal, using a grounded theory approach to address the question: *What are the meanings of participating in a Wilderness Discovery experience from the perspective of the students?* This approach by Pitstick (1995) was used in analyzing content of journals on six WD trips in 1993, with a similar approach used on the journals from 32 trips in 1994-1995 (Russell and Hendee, 1996).

A second approach gathered quantitative information by tabulating an estimate of the number of words written by each student and the number of "reflective comments" made by each student. Reflective comments are defined in this study as any statement or phrase which, rather than just describing their experience or events of the day, reflected some kind of insight into their lives. Common themes were also identified in both of these analyses.

Results Since students begin their wilderness experience in the culture of the Job Corps center, they feel a sense of anticipation and uncertainty. Students begin to leave this culture behind, however, before even leaving the Job Corps center by their willingness to limit themselves to the equipment list provided. Safety issues predominate in the Wilderness Discovery experience and are discussed in great detail prior to leaving the trailhead, alleviating at least some of the pre-trip anxiety.

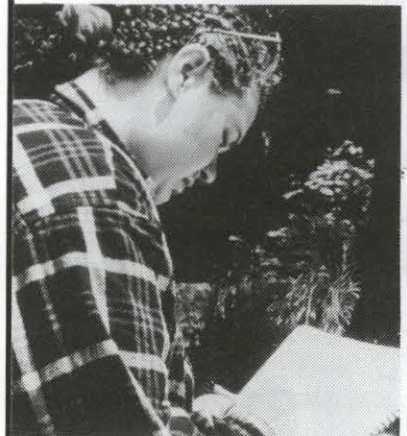
Beginning the trip, students are challenged by a variety of unfamiliar physical stimuli including, for most, intense physical exertion. Their ability to complete the first day's hike surprised many students and set the stage for repeated success experiences throughout the wilderness trip. As the days passed, students became increasingly adapted/attuned to the wilderness environment, themselves, and other members of their group. The transition was greatly facilitated by soft skills activities, including alone time, reflection, self-discovery, and group reflection. Adaptation/attunement also occurred because of repeated successes, an ever-increasing sense of community, and the opportunity to learn new things that were practical and relevant (e.g., respect for the wilderness, basic backpacking skills, minimum impact camping). A focus on the "return" helped student participants understand the relationship between their wilderness experience, their lives in Job Corps, and the future as they perceived it.

Thus, the meaning of the Wilderness Discovery experience to Job Corps participants is greater than the sum of its parts. Each student, despite numerous similarities, found his or her own unique *meaning* in the wilderness experience, and each student found his or her own unique way of sharing that meaning either in their journals, the interviews, in group circles, or through their behavior by contributing positively to the community with which they experienced the wilderness.

The most obvious distinction from the data is the clear difference between male and female participants. Across all four centers, females consistently wrote more than males and had more reflective insights than the male participants. Another notable finding is the number of words students at Timberlake Job Corps wrote, particularly in 1994. The women at Timberlake wrote more than twice as much as the overall average (Table 5). These results may reflect leaders' emphasis on journaling, the number and percentage of women who participated in WD at Timberlake (27%), meaning that a few women who wrote a lot can affect the overall average. The overall results were very positive, indicating students participated in journaling and felt that it was a worthwhile exercise to help them focus on issues in their lives.

Student Effects: Exit-Interviews

At the conclusion of every Wilderness Discovery trip, each student responded to questions about their Wilderness Discovery experience in a private recorded interview. The interview was one-on-one with the leader and took place at the trailhead immediately following the conclusion of each trip. We wanted to hear the story of their experience and what they had learned when it was still fresh in their minds and hearts.



... students participated in journaling and felt that it was a worthwhile exercise to help them focus on issues in their lives.

The interview was later transcribed and descriptive statistics were tabulated for interview items having objective responses, such as yes or no. Any responses that were narrative were content-analyzed to identify consistent themes and then analyzed across centers using cross tabulations to search for patterns. These exit-interviews yielded rich insight about the student's experience and provided valuable feedback to help us evaluate the strengths and weaknesses of Wilderness Discovery.

The questions started broad, asking students if they felt any different about themselves or the group members because of the experience. The interview then moved to more direct questions about what particular things students learned on their Wilderness Discovery trip and how they planned to apply those to their lives at Job Corps. The objective responses, combined with content-analysis of the narrative responses, tell a story of pride in achievement through fulfilling a goal, new friendships, and a clearer vision of why they are in Job Corps and the possibilities for their future.

Results The exit-interviews provided valuable feedback on Wilderness Discovery from the students' perspective. It gave them a chance to tell their story of what they learned and experienced from seven days of traveling and living in balance with nature and ten other individuals in the rugged wilderness. The stories revealed pride in achievement, pain and blisters, cooperation and caring, and overcoming fear to be able to say, "I made it." The following conclusions are based on the analyses of exit-interviews of Wilderness Discovery participants at four Job Corps centers.

1. Wilderness Discovery was different from what students expected (93%). This was true despite a two-hour pre-trip meeting in which the trip was described in detail, fears and expectations were discussed, and an equipment list was passed out. The primary reason given was that the hiking was more difficult than expected (48%), followed by statements that they enjoyed it more than anticipated (18%). Students were challenged physically and mentally more than anticipated, yet WD was more fun for most than they thought it would be.

2. When asked to describe the high points of the experience, swimming (32%), completing climbs to enjoy the view from a ridge or summit (27%), and working together as a group to achieve community-oriented goals (16%) were the top three highlights. These high points reflect the notion that students realized that the hard work was worth it when rewarded with a swim, a beautiful view, or the satisfaction of working together. The hard work in the group circles throughout the week taught the rewards of achieving group goals and coming together to form a "community" or "family."

Two dominant themes were described as low points: wilderness conditions, such as the ever-present hills (42%) and the weather (23%), and complaining—other people complaining or whining (14%). Based on our experience, Job Corps students are generally not in good physical condition. Most had never experienced wilderness or hiked with a backpack and were challenged with hiking at altitudes of up to 9000 ft. On many trips, it rained six out of the seven days, and on some trips students even had a chance to build snow people. Having students describe the low points of the experience helped them in



The stories revealed pride in achievement, pain and blisters, cooperation and caring, and overcoming fear to be able to say, "I made it."

Tables & Figures



Table 1. Wilderness Discovery data summary for 1994-1995 at Curlew, Timberlake, Trapper Creek, and Atlanta Job Corps Centers

	Timberlake Mt. Hood National Forest	Curlew Colville National Forest	Trapper Creek Bitterroot National Forest	Atlanta Cherokee National Forest	TOTAL
Total # of Trips	11	11	10	6	38
Total # of Days	74	75	66	37	252
# of Male Participants	70	73	67	6	216
# of Female Participants	19	28	25	26	98
# of Total Participants	89	101	92	32	314
Staff-Male	6	8	6	1	21
Staff-Female	1	3	7	3	14
Staff-Total	7	11	13	4	35
Total Trip Miles	190	206	210	73	679
Work-Person Hours	298	300	235	120	953
Work-Pounds of Garbage	108	103	71	56	338
Work-Sites Rehabilitated	14	24	22	14	74
Work-Trees Cleared	6	69	24	8	107
Work-Miles of Trail Rehabilitated	20	121	115	16	152

Table 2. Age of Wilderness Discovery participants

Participant Age	Timberlake Mt. Hood National Forest	Curlew Colville National Forest	Trapper Creek Bitterroot National Forest	Atlanta Cherokee National Forest	TOTAL
16	8	18	14	2	42
17	21	13	17	8	59
18	17	17	16	4	32
19	9	18	13	4	44
20	13	11	13	5	42
21	6	3	10	0	19
22	8	2	4	6	20
23	3	7	4	2	16
24	2	2	0	1	5
25	2	0	3	0	5
Totals	89	91	94	32	284
Average Age	19.00	18.60	18.96	19.45	19.05

Table 3. Participant time in Job Corps prior to their trip, Wilderness Discovery 1995

Time in Job Corps (months)	Timberlake	Curlew	Trapper Creek	Atlanta	TOTAL
<1	0	5	5	0	10
1-3	4	14	12	14	44
3-5	11	11	6	6	34
5-7	12	7	7	4	30
7-9	6	6	8	2	22
9-11	4	1	4	2	11
11-13	4	0	1	1	6
13+	3	7	2	3	14
Total	44	49	45	32	170
Average (months)	6.8	5.6	5.4	4.8	5.6

Table 4. Trip miles and work completed, Wilderness Discovery 1994-1995

	Timberlake Mt. Hood National Forest	Curlew Colville National Forest	Trapper Creek Bitterroot National Forest	Atlanta Cherokee National Forest	TOTAL
Trip Miles Total	190	260	210	73	679
Work-Person Hours	296	300	235	120	953
Work-Pounds of Garbage	108	103	71	56	338
Work-Sites Rehabilitated	14	24	22	14	74
Work-Trees Cleared	6	69	24	8	107
Work-Miles of Trail Rehabilitated	20	121	115	16	152

Table 5. Number of words and reflective comments per student (all students and female students only) in student journals and backpacking experience for Wilderness Discovery participants at four Job Corps centers, 1994-1995

Journal Analysis	Atlanta	Curlew	Timberlake	Trapper Creek	Average
Number of Words Ave/Trip	377.9	292.5	542.3	354.0	391.6
Number of Reflective Comments Ave/Trip	1.9	1.7	1.6	1.5	1.5
Number of Words <u>Female Students</u> Ave/Trip	384.5	533.0	980.7	378.0	569.1
Number of Reflective Comments <u>Female Students</u> Ave/Trip	2.2	2.7	3.0	1.8	2.2

Table 6. Termination rates of Wilderness Discovery participants vs. controls at Curlew 1993, Curlew 1994, Timberlake 1994, and Trapper Creek 1994 Job Corps Centers

	Curlew 1993 N (%)	Curlew 1994 N (%)	Trapper Creek 1994 N (%)	Timberlake 1994 N (%)	Totals
Treatment Terminated	12 (26.7)	10 (22.7)	15 (33.3)	11 (26.8)	48
Treatment Not Terminated	33 (63.3)	34 (87.3)	30 (66.7)	30 (73.2)	127
Control Terminated	19 (42.2)	15 (34.1)	18 (40.0)	11 (26.8)	63
Control Not Terminated	26 (57.8)	29 (65.9)	27 (60.0)	30 (73.2)	112
X2	2.411	.2373	.5117	1.000	
P=	.12047	.2373	.5117	1.000	

Table 7. Comparison of the percent reduction in termination rates of Wilderness Discovery participants vs. controls at Curlew 1993, Curlew 1994, Timberlake 1994, and Trapper Creek 1994 Job Corps Centers

Job Corps Centers	Percent of Group Terminated		Difference	Reduction in Termination Rates
	Participants	Controls	Total	Total
Curlew 1993	27	42	15	36%
Curlew 1994	23	34	11	32%
Trapper Creek 1994	33	40	7	18%
Timberlake 1994	27	27	0	0
Average Reduction in Termination Rate	27.5	35.8	8.3	23.2%

Table 8. Comparison of reason for termination at Trapper Creek, Timberlake, and Atlanta Job Corps Centers, summer 1994 Wilderness Discovery

Reason for Termination	Trapper Creek		Timberlake		Curlew		Totals	
	WD	Control	WD	Control	WD	Control	WD	Control
Resignation	7	5	1	0	3	2	11	7
AWOL	2	4	4	8	2	4	8	16
Disciplinary Discharge	2	5	4	2	5	6	9	15
Medical	4	3	2	0	0	0	6	3
Parent Approved Termination	0	1	0	1	0	3	0	4
TOTAL	15	18	11	11	10	15	36	44

Table 9. WD Steering Committee members' reasons supporting benefits to students participating in Wilderness Discovery by categories across centers

Benefit Category	Case 1: Curlew	Case 2: Trapper Creek	Case 3: Atlanta	Case 4: Timberlake
<u>Accomplishment</u>	Students realized they had more capability than thought-sense of accomplishment	- Sense of accomplishment - Realize importance of experience	A sense of accomplishment	Self-esteem from accomplishment
<u>Appreciation/ Exposure to New Experience</u>	Opportunity to experience something they would have missed	Learned camping skills and wilderness travel	Exposure to an outside and different experience	Developed new leisure skills
<u>Challenge</u>	Stretch comfort level	Learned about their limitations and interests		
<u>Communication</u>	Ability to speak to authority figures	Learned practical skill from teamwork	Learned to express feelings better	- Made new acquaintances - Developed leadership skills
<u>Reflection/ Introspective</u>	Opportunity to reflect on and deal with personal issues	Ability to be introspective and reflective	Neutral environment to confront personal issues	Gained insight into themselves and other students
<u>Self-Confidence</u>	Self-confidence and peer acceptance	Increased participation and enthusiasm-More confident	Self-Confidence	Sense of confidence
<u>Self-Esteem</u>	Self-esteem-ability to speak up for themselves	Learned respect for themselves and each other		Self-esteem for accomplishment
<u>Teamwork/ Cooperation</u>	- Opportunity to help others - Male and female on equal footing - Other students seen in a different light	Learned practical skill in teamwork	- Opportunity for sharing and caring for each other - Learned the importance of teamwork - Learned acceptance of others	- Enhanced trust in themselves and others - Developed leadership skills
<u>Trust/Respect for Authority Figures</u>	Increased maturity; "More human"	Learn respect for the wilderness and each other	- Respect the staff more - Openness to others	Enhanced trust in themselves and others
<u>Wilderness/Env. Awareness</u>		Awareness of wilderness as a positive experience		Enhanced env. and wilderness awareness

Table 10. Three multiple scenarios of benefit variables

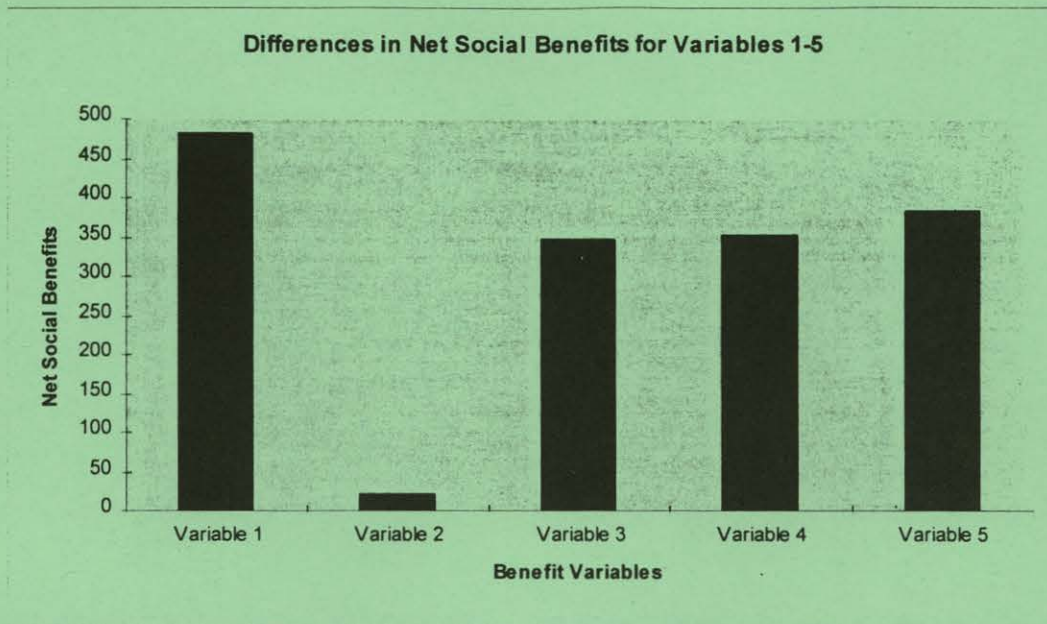
<p>Multiple Combination of Variables: Scenario 1 Variable 1--Output Produced by Corps members 2% Variable 2--Reduced Dependence on Welfare Programs 2% Variable 3--Reduced Criminal Activity 1% Variable 4--Reduced Drug/Alcohol Abuse 1% Variable 5--Reduced Utilization of Alternative Services 5% (Early Terminations)</p>	<p>Multiple Combination of Variables: Scenario 2 Variable 1--Output Produced by Corps members 3% Variable 2--Reduced Dependence on Welfare Programs 3% Variable 3--Reduced Criminal Activity 2% Variable 4--Reduced Drug/Alcohol Abuse 2% Variable 5--Reduced Utilization of Alternative Services 5% (Early Terminations)</p>
<p>Multiple Combination of Variables: Scenario 3 Variable 1--Output Produced by Corps members 5% Variable 2--Reduced Dependence on Welfare Programs 3% Variable 3--Reduced Criminal Activity 2% Variable 4--Reduced Drug/Alcohol Abuse 3% Variable 5--Reduced Utilization of Alternative Services 5% (Early Terminations)</p>	

Table 11. SCANS personality qualities required for all potential workers

Personal Qualities	Description
Responsibility	Exerts a high level of effort and perseverance toward goal attainment
Self-Esteem	Believes in own self-worth and maintains a positive view of self
Sociability	Demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings
Self-Management	Assesses self accurately, sets personal goals, monitors progress, and exhibits self-control
Integrity/Honesty	Chooses ethical courses of action

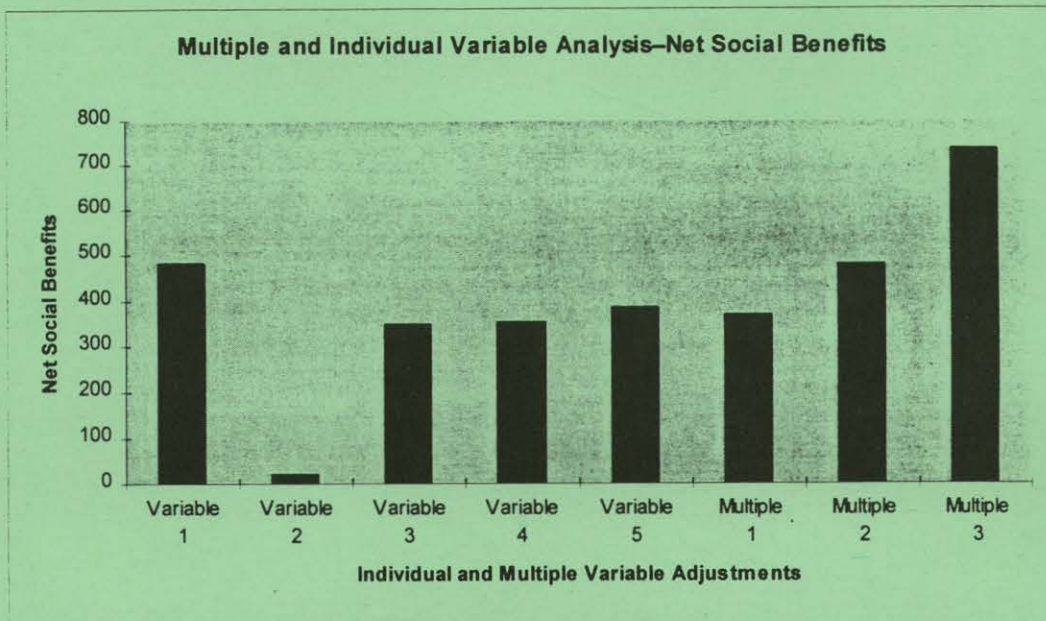
Source: Law, 1994, p. 250

Figure 3. Differences in net present values of additional benefits resulting from a 5% simulated increase in each of the five Mathematica (1985) model variables



*Variable 1-Enhanced Employability; Variable 2-Reduced Dependency on Welfare Programs; Variable 3-Reduced Criminal Behavior; Variable 4-Reduced Drug/Alcohol Abuse; Variable 5-Reduced Use of Alternative Programs (Reduced Early Terminations).

Figure 4. Increase in net social benefits for Scenario 1, Scenario 2, and Scenario 3 representing multiple combinations of adjusted variables, compared to changes in net social benefits of each of the five individual variables



*Variable 1-Enhanced Employability; Variable 2-Reduced Dependency on Welfare Programs; Variable 3-Reduced Criminal Behavior; Variable 4-Reduced Drug/Alcohol Abuse; Variable 5-Reduced Use of Alternative Programs (Reduced Early Terminations).

processing their achievement and showed them how the hard and challenging experiences make the good experiences even better.

3. A community ethic evolved during Wilderness Discovery. The students returned from every trip feeling good about the group and the new friends they made (96%). Students stated that they had gotten to know the members of their group better (53%) and, in many instances, said the group had become a family (20%) and had achieved group goals. WD participants were able to communicate in a more open manner and felt comfortable discussing and sharing feelings with other students in the group.

4. Wilderness Discovery participants felt they learned valuable lessons they would bring back to the center and apply to their daily lives (96%). Communicating with other students and authority figures in a more open and non-judgmental manner (33%) was noted by students as a lesson learned on WD, and one they would like to apply to their interactions in the dorm or with Job Corps staff. Others stated that they were more confident and motivated (22%) after achieving success on Wilderness Discovery and felt they had accomplished something (14%). The sense of accomplishment that comes from completing as formidable a task as WD will also accompany students back to Job Corps, encouraging their desire to complete their trade or move up in their educational standing.

5. Getting away from the stress of the day-to-day routine of Job Corps was seen by students as the most important benefit of visiting the wilderness (35%), followed closely by having respect for nature and other people (30%). Many of the students felt that the time away was much needed to reflect on their life and get to know themselves (11%), as well as their role in Job Corps and to set goals for the future. The tranquillity of the wilderness granted them peace and quiet, returning students to Job Corps feeling renewed and refreshed. WD participants also noted that wilderness had taught them to respect and appreciate nature as well as other things and not to take things for granted (10%). They took this notion a step further applying the metaphor of respect and caring to other people as well. This parallel is a wonderful insight gained by students, illustrating the impact the wilderness can have on people.

6. Job Corps students think Wilderness Discovery is a good program for Job Corps (100%), and many reasons were given to support this universal view. It gave them a chance to think about their role in Job Corps and their future (25%), and to get away from the stress of Job Corps and provide time to think (18%). They felt it helped students' attitudes and motivation (17%) and gave them a chance to find themselves (13%). It also gave students the opportunity to see the wilderness, who would not otherwise have the chance (12%). These were the reasons given by the students to support their 100 percent positive view that WD is a good program for Job Corps.

7. Ninety-two percent of students participating in WD had never been on a wilderness backpacking trip before, ranging from 98 percent at Atlanta to 87 percent at Curlew. When asked why, 87 percent of the students said they never had the chance, but only 4 percent said they never wanted to have such an experience. Thus, Wilderness Discovery provides a wilderness experience to

The hard work in the group circles throughout the week taught the rewards of achieving group goals and coming together to form a "community" or "family."

economically disadvantaged youth who otherwise would not have the opportunity. When given the chance, Job Corps students eagerly volunteered for Wilderness Discovery. The program was not able to accommodate all the students who applied because of limited space and resources.

Reducing Early Terminations

To address the question: *What are the effects of participation in Wilderness Discovery on length of stay in Job Corps?* we carried out a treatment vs. control experiment comparing WD participants with a matched control group of student non-participants. The idea was to see whether participating in Wilderness Discovery, for whatever reason or result (such as heightening motivation, enhancing self-esteem, improving clarity of goals, etc.) would result in students staying in Job Corps longer and/or completing their educational and vocational training.

We deferred selecting the control group until the Wilderness Discovery program had concluded for the summer to insure that all physically capable Job Corps students had an equal opportunity to participate in WD. Selecting a control group prior to the conclusion of the summer program would have made students selected as non-participants ineligible to participate in Wilderness Discovery. Students selected for the non-participant control group at the end of the summer were not told of their selection.

The control groups were chosen using stratified random sampling procedures (Ferguson, 1971). For example, at the Curlew Job Corps Center in 1993, three student master rosters were used, one each from the beginning, middle, and end of the summer, to classify every student on any of the three rosters according to the following characteristics: gender, age (in years and months), and length of stay at the Curlew Job Corps Center (in total number of days). These Curlew 1993 data are explained in more depth and reported in Pitstick (1995). Students appeared on a roster only if they were actively enrolled in Job Corps. New students arrive every two weeks and those terminated from Job Corps do not appear on the following month's roster. The data were then sorted into two categories: Wilderness Discovery participants and Job Corps students who did not participate in the wilderness program, i.e., treatment and control groups in the experimental design.

Results Reductions in early (premature) terminations by WD participants, compared to matched control groups, were found in three of four tests, with one exception: Timberlake 1994, having equal termination rates between participants and non-participants. The average reduction in termination rates for Curlew 1993 and 1994, Timberlake 1994, and Trapper Creek Job Corps 1994 was 23.2 percent. At all centers, there was a 50-percent reduction in AWOLS and at all but Timberlake 1994, there was a reduction in disciplinary discharges. Curlew had reductions in disciplinary discharges in both 1993 and 1994. Tables 6, 7, and 8 present termination data for Wilderness Discovery participants compared to matched non-participants at three participating Job Corps centers for 1994 and 1995.

The reductions at Curlew may reflect experience plus refinement and support for the WD program, since it operated there for two years. Key staff

An average reduction in early (premature) termination rates of 23.2% was found between WD participants and control groups.



members at Curlew members at Curlew were instrumental in the development and implementation of Wilderness Discovery during the summer of 1993. Many of these people were involved in the summer 1994 program as well, and brought their experience and infectious level of enthusiasm and commitment with them. Staff support on center was a major factor at all centers in the success of the program.

Reasons for Terminations of WD Participants Timberlake and Trapper Creek Job Corps Centers in 1994 were operating Wilderness Discovery for the first time. There are many details that must be fine-tuned when first bringing Wilderness Discovery to a center. Based on our knowledge gained from running 45 Wilderness Discovery trips over a three-year period at four Job Corps centers, we believe the following factors may have limited the reductions in termination rates for WD participants at Timberlake and Trapper Creek Job Corps Centers.

The meager reductions at Timberlake may have been affected by the fact that some of the students were immigrants from other cultures around the world. Timberlake has a very successful English as a Second Language (ESL) program, thus attracting a diverse group of immigrants to the center. Some of the participants spoke little or no English and communicating Wilderness Discovery's goals and objectives presented unique challenges to Wilderness Discovery leaders.

The type of students who were chosen for the trips may also have affected termination rates. Some students were given Wilderness Discovery as a last chance effort to remain in Job Corps and were, therefore, at a greater risk of terminating. Other variables may include quality and style of WD leadership, Job Corps staff involvement with Wilderness Discovery, proximity to urban areas, and so forth. But even at Timberlake, the termination rates were the same, not higher than controls.

Another factor that affected termination rates was the method used in choosing Wilderness Discovery participants and matched control groups. Tests of statistical significance between Wilderness Discovery participants and control data does not seem fully applicable since randomness did not entirely apply. Student participants in the program were not randomly selected. Rather, they were self-selecting (they had to volunteer to participate) and were then further selected by members of the steering committee who used various criteria and reasoning to select participants. These criteria included sex, age, length of stay in Job Corps, student performance (e.g., vocational training, education, social skills training) as well as behavior/disciplinary problems (including alcohol and/or other substance abuse). For every model (i.e. "good") student chosen for participation in WD, a student struggling with their role in Job Corps was also chosen.

Non-participant samples (controls) were drawn approximately four to five months following completion of Wilderness Discovery at each center using a stratified random sample technique based on sex, age, and length of stay in Job Corps. We did not use additional variables such as vocational trade or behavioral variables to select non-participants that may have been discussed before selecting WD participants.



Wilderness Discovery students make new friends and socialize with students whom they would not normally interact with at the center.

Focus Group Evaluations by Job Corps Staff

We wanted to determine what Job Corps staff thought about Wilderness Discovery. This was their opportunity to evaluate the program based on their observations and judgments about Wilderness Discovery student participants back on center. The perceived effects of Wilderness Discovery on the students by Job Corps staff was invaluable in evaluating Wilderness Discovery. The logic of using WD Steering Committees is based on their qualifications as experts who could make objective professional judgments about what they perceive the program's effects to have been. They are professionals in working with youth-at-risk in Job Corps. They are also familiar with the students' histories prior to entering Job Corps and prior to participating in Wilderness Discovery, and have had the chance to evaluate changes in behavior, positive or negative, at the center. Finally, such expert judgments are the basis for all operational and administrative decisions in Job Corps, so we wanted to test WD against that practical criteria.

WD Steering Committee Focus Group Process At the end of the Summer 1995, WD Steering Committees of Job Corps staff participated in an exercise to evaluate the success of Wilderness Discovery at their respective centers. A modified delphi technique was used. The group provided individual ratings in response to a question followed by a discussion, with comments visibly recorded on large flip-chart paper. Question probes were used after the first rating to generate discussion surrounding the reasons given by Job Corps staff for their ratings.

For example, a staff member working as the student standards officer is in constant contact with students who are getting into trouble. He may have knowledge different from that of a vocational instructor who deals with students while teaching vocational trades. Together, two such Job Corps staff members can pool their knowledge, thereby providing a more complete composite view of students' reactions to WD and the entire Job Corps program. Expanded to include up to seven different staff members, with opportunity for discussion and reconsideration of individual responses to each question about WD, consensus expert opinions and judgments emerged that have strong validity. This is strengthened by the notion that such processes are the basis for most judgements in Job Corps.

Results With data from these procedures, it was then possible to compare the emerging categories of perceived benefits of WD across all four centers and look for consistencies. After many passes through the data, a new table was generated using consistent categories across all centers, and phrases were placed in the table (Table 9).

Expert judgements by staff are the basis for all operational and administrative decisions in Job Corps. Therefore, we tested WD against that criteria using a focus group process to document staff perceptions of perceived effects of WD on students.

The categories were then subdivided along a continuum of complexity (more simple to more complex) to explore and illustrate the full meaning of the phrases suggested by the focus groups. Figure 1 illustrates the spectrum of complexity for the benefit category: communication. For example, the phrase “made new acquaintances” is a fairly simple form of communication, referring to the students talking to students they normally would not and is seen as a good start in developing social skills for many Job Corps students. Here the students are moving away from peer acceptance and social standards of who is “cool” and “OK” to talk to, and communicating with other new acquaintances with whom they feel comfortable. Hence, the placement of the “made new acquaintances” phrase on the simple end of the complexity continuum.

On the other hand, increasing students’ ability to speak to authority figures illustrates communication at a more advanced level, which could have important positive impacts on getting and holding a job in the future. Thus, it was placed on the more complex end of the spectrum. Other benefit categories contain similar phrases placed on the complexity spectrum to better describe the benefits perceived by staff and give the benefit category relative magnitude.



A Wilderness Discovery
Steering Committee.

Benefit/Cost Analysis of Wilderness Discovery as an Adjunct to Job Corps

Introduction

The idea that net social benefits to society could result from including Wilderness Discovery as an adjunct to Job Corps was tested using a simulation model of benefit and cost estimates to society by Job Corps that was developed by Mathematica (1985). Using this model, potential increases in the flow of benefits to society from Wilderness Discovery as a supplement to Job Corps are simulated and projected. These projections were based on our study data, that is, reductions in termination rates, which were reinforced by analysis of student journals, exit-interviews, and WD Steering Committee focus group consensus responses, which all addressed enhanced performance by WD participants. These findings are consistent with reports from other studies we found in an extensive review of the literature on wilderness experience programs (Friese *et al.*, 1996).

We looked at the potential net social benefits to Job Corps, and in turn society, of a reduction in early terminations combined with enhanced student performance at centers

A focus group method exploring economic benefits was devised to link the benefits of participating in WD with the Mathematica (1985) benefit/cost model. Specific questions were asked of Job Corps staff in a focus group exercise to test the hypothesis that direct links between benefits of Wilderness Discovery can be related to the Mathematica (1985) model. The questions asked of the WD Steering Committees linked their observations of post-WD student performance at centers to five critical benefit variables in the Mathematica (1985) benefit/cost model and also addressed the larger question: What were the benefits of Wilderness Discovery to the students who participated, compared to those who did not participate, in Wilderness Discovery? The responses to that question formed the benefit categories, which are summarized in alphabetical order below:

- Accomplishment
- Appreciation/Exposure to New Experience
- Challenge
- Communication
- Healthy Environment
- Reflection and Introspection
- Self-Confidence
- Self-Esteem
- Teamwork /Cooperation
- Trust and Respect for Others and Authority Figures

The Mathematica (1985) model was chosen because it was created to estimate the net social benefits from investments in Job Corps. The model's assumptions concerning the benefits and effects of Job Corps on the life trajectories of students parallel our assumptions about Wilderness Discovery's effects on participants.



A 23-percent average reduction in early (premature) terminations was found at three participating Job Corps centers. Data from student journals, exit-interviews, and Job Corps staff consensus observations from the focus group support the notion that students are returning from Wilderness Discovery with a more positive attitude. Analysis also revealed that WD students are more motivated in their educational and vocational training, and are more focused on their role in Job Corps and their future direction. These findings focused our attention on the potential benefits to Job Corps, and in turn society, of a reduction in early terminations combined with enhanced student performance at centers.

A Benefit/Cost Model of Benefits from Wilderness Discovery

Thus, a model of potential net social benefits from investing in Wilderness Discovery as an adjunct to the Job Corps was created. The analysis of net social benefits from Wilderness Discovery are reported in greater detail in a master's thesis by Russell (1996). The findings from this economic analysis are also reported in Russell, Hendee, and Hall (1996). Based on the average 23-percent reduction in termination rates by Wilderness Discovery participants, combined with student journal and exit-interview findings, and the perceived post-trip enhanced performance of WD participants perceived by staff—all linked to the Mathematica (1985) model by judgments of WD Steering Committees of Job Corps staff—the potential benefits to society of Wilderness Discovery as an adjunct to Job Corps were simulated and projected as outlined in Figure 3.

The model presented in Figure 3 describes the underlying rationale and process for the sensitivity analysis in which the perceived effects of Wilderness Discovery on five critical variables in the Mathematica (1985) benefit/cost model were simulated and projected. There were two methods used in simulating effects of Wilderness Discovery on the Mathematica (1985) model. 1) The five benefit variables were adjusted upward incrementally by 1, 2, and 5 percent under very conservative assumptions of positive impacts on them by participation in WD. This simulation revealed the relative contribution of each variable to increased benefits, estimated in annual dollar returns per student (Figure 4). 2) Because the five benefit variables are related and interactive, all of the variables were then simultaneously adjusted in different but logical combinations, but never by more than five percent (Figure 5).

Studying the model, one can see the interactive effects of all the benefit variables together stemming from the impact of Wilderness Discovery on (1) reduced early terminations, with benefits then also flowing from (2) enhanced employability and thus, (3) reduced dependence on welfare, (4) reduced criminal behavior, and (5) reduced drug/alcohol abuse. For example, the findings of the study suggest WD reduces early terminations, thus variable 5 (reduced utilization of alternative services) was increased by 5 percent. The literature strongly suggests that students who remain in Job Corps long enough to complete their educational and vocational training are more employable. Variable 1 (output produced by Corps members) was then increased 2 percent reflecting this relationship. Variables 3, 4, and 5 were also increased based on this logical dynamic relationship among variables.

The variables in the Job Corps cost benefit model are related, i.e., (1) reduced early terminations leads to (2) enhanced employability, thus (3) reduced dependence on welfare, (4) reduced criminal behavior, and (5) reduced drug/alcohol abuse. We calculated the net social value of each of the variables.

This analysis suggests a potential increase in net social benefits 1.36 times the cost of providing Wilderness Discovery to Job Corps students. . . (\$500 vs \$367 per student)

Individual Variables In an analysis to identify how sensitive the model is to the individual variables, we found that variable 1 (enhanced employability) when adjusted upward by 5 percent, results in a \$480 increase in net social benefits annually per Corps member. When also adjusted by 5 percent, variable 3 (reduced criminal activity) and variable 4 (reduced drug/alcohol abuse) each yield about \$350 of net social benefits, and variable 5 (reduced early terminations) yields an increase in benefits to society of about \$375 annually per Corps member. Variable 2 (reduced dependence on welfare) yields few net social benefits in the model, an increase of about \$20. This sensitivity analysis illustrates the relative importance individually of the benefit variables in driving the model's net social benefits. Thus, substantial increases in net social benefits are realized from each variable (Figure 4).

Multiple Variables In the second analysis, the collective increase in benefits from logical combinations of increases in variables was explored by simultaneously adjusting three multiple scenarios of benefit variables. Table 10 shows the incremental adjustments made to each individual variable.

Adjustments to the benefit variables were made for each of these scenarios, creating an increase in net social benefits. Figure 5 presents individual and multiple adjustments to illustrate the changes in benefits from including multiple variable interactions.

The analysis of net social benefits clearly illustrates the strength variable 1 (enhanced employability) has in driving the Mathematica (1985) model. For example, Figure 5 shows that net social benefits are greater for a 5- percent increase in variable 1 (\$480) than for multiple scenarios 1 and 2, respectively, where a modest increase in variable 5 of 5 percent is coupled with 2 and 3 percent increases in variable 1. But multiple scenario 3 shows a substantial increase in net social benefits of \$730 due to the 5 percent assumed increase in variable 1. This illustrates how important the notion of employability, the primary goal of Job Corps, is to increasing net social benefits.

The variables are interrelated. Thus, if one variable is affected by participation in WD, then multiple variables could potentially be affected. Based on this logic, the potential of investing in a program like WD as an adjunct to the federal Job Corps is great and could enhance the benefits to society already being attained by Job Corps. For example, enhanced communication, self-esteem, motivation, and cooperation are some of the benefits students gain who participate in WD and will carry back with them to their Job Corps center when they complete their training. This makes students more employable, thus affecting all other variables in the model that are related to employment.

Benefit/Cost Analysis of WD as an Adjunct to Job Corps

The next question in the simulation of Wilderness Discovery as an adjunct to Job Corps would be: *Do the estimated benefits of Wilderness Discovery as an adjunct to Job Corps exceed the costs?* It is possible to do a benefit/cost analysis of the benefits in dollar returns of WD as an adjunct to Job Corps, over the variable costs per student associated with providing the wilderness experience program. The variable costs of providing WD per Corps member are

estimated at \$367 dollars per student per trip. This is a benchmark estimate that the University of Idaho Wilderness Research Center prepared as a basis for presenting proposals to individual centers interested in offering the wilderness experience program to their students. But the multiple scenarios in the foregoing analysis project a simulated increase in social and economic benefits of an average of \$500 per Corps member per year from participation in WD. This provides a benefit/cost ratio of 1.36 (\$500/\$367), indicating in this simulation that WD would pay for itself through the surplus of simulated benefits over estimated costs. This analysis suggests a potential increase in net social benefits 1.36 times the cost of providing Wilderness Discovery to Job Corps students, under the conservative assumptions of the foregoing simulation of benefits and estimated costs.

Discussion

The substantial benefits in this sensitivity analysis and simulation rest on: positive findings from student journals and exit-interviews, which were consistent with other findings of studies reported in the literature; a reduction in early termination rates of WD participants compared to non-participants; and post WD benefits observed by Job Corps staff. The benefits were all linked to the Mathematica (1985) benefit/cost model by WD Steering Committee consensus expert judgments in a focus group exercise based on their perceived effects of WD on Job Corps student participants compared to non-participants. Thus, the study findings regarding WD participation were linked to the Mathematica (1985) model, which was then used to simulate benefits.

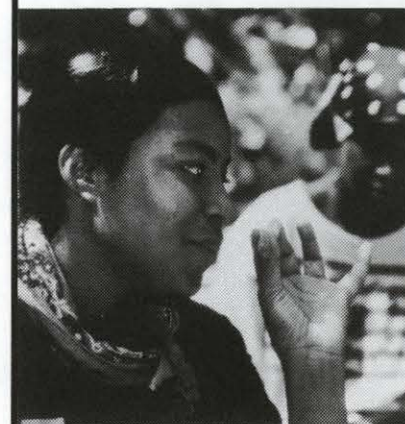
Wilderness Experience Programs and the Future Job Market

Wilderness Discovery directly targets social skills that Job Corps students use in social interactions on center and will need in the real world upon completion of their training. Even more complex social skills are being required by employers as jobs evolve and change. Three quarters of new entrants in the job market will be qualified for only 40 percent of the new jobs created between 1982 and the year 2000 (Law, 1994). What are the new competency skills that will be required by the emerging labor force in the 21st century? Law (1994) suggests that education needs to meet the following goals in order to adequately train young people for today's job market:

- the willingness to take initiative and perform independently
- the ability to cooperate and work in groups
- competence in planning and evaluating one's work and the work of others
- understanding of how to work with persons from different backgrounds
- the ability to make decisions (p. 234)

The United States Secretary of Labor's Commission on Achieving Necessary Skills (SCANS) specified that upon graduation from high school all potential workers should possess:

- the ability to work as a team and negotiate
- thinking skills, enabling them to detect and to solve problems
- high personal qualities, enabling them to work well with others (Law, p.240, 1994)



Do we invest in the education that will prepare a growing population of young people at risk to meet the challenges of a growing and changing economy or let them slip through the cracks to become permanent members of the underclass?

Table 11 further illustrates the personal qualities that all workers should possess to achieve success in the workplace (Law, 1994, p. 250). These skills are being called for by academicians, and political and business leaders all over the world. They emphasize basic social skills that are often overlooked in traditional education, but are emphasized by being part of the daily routine in wilderness experience programs. By providing an opportunity to practice and apply these skills in a non-threatening environment, WD helps Job Corps students develop abilities to set and achieve goals they thought were impossible and to break down traditional barriers that inhibit students from solving problems, cooperating, and communicating with each other in an open, honest way. The development of these skills can help students complete their educational and vocational training in Job Corps and better prepare them for the difficult task of obtaining and keeping a job and beginning a productive life.

Raizen (1991) characterized two different types of futures for American workers. The better educated can expect expanding opportunities and rising real wages, while the poorly educated face a future of poverty and constricting opportunities. For society and adolescents, the choice they need to make now is clear. Do we invest in the education that will prepare a growing population of young people at risk to meet the challenges of a growing and changing economy or let them slip through the cracks to become permanent members of the underclass? The goals and objectives of Wilderness Discovery are to help students complete Job Corps, get and keep a job so they have a better chance to lead a productive and healthy life—to be producers of social and economic benefits and not consumers of benefits through public assistance.



*"I'm setting my dreams
on the stars and reaching
for all that is in me and
I'm going to find the
sunlight as I work at it
day-by-day. I've learned
a lot about myself on this
trip and have discovered
what I truly want out of
my life and the ways
I'm going to use it to
make this happen."*

Conclusions

From the above evidence, we drew eight conclusions as a result of the pilot program and study:

1. Wilderness Discovery is a feasible adjunct to the larger Job Corps program. The success of the Wilderness Discovery program at the Curlew, Timberlake, Trapper Creek, and Atlanta Job Corps Centers during the summers of 1993-1995 clearly demonstrates the feasibility of conducting week-long backpacking trips for students enrolled in Job Corps. We safely took over 350 inexperienced Job Corps students on 45 week-long backpacking trips. Procedures were developed and refined with feedback from center staff, students, and members of the steering committee. The Wilderness Discovery program really worked. By the end of this pilot program and study it was a routine part of the respective Job Corps center, as well as a topic of interest and conversation by students and staff.

2. Wilderness Discovery supports Job Corps' goals and supplements Job Corps academic, vocational, and social skills curricula. First, reductions in early and involuntary termination rates among participants implies that the Wilderness Discovery program enhanced student motivation for staying in Job Corps. Second, data from student participant journals, exit-interviews, plus Job Corps staff focus group evaluations of student participants are consistent with the literature on effects of wilderness experience program participation. This evidence collectively supports the notion that Wilderness Discovery provided many benefits such as enhanced self-esteem, motivation, and social skills.

Third, Job Corps staff embrace Wilderness Discovery and collectively believe that the wilderness experience is an effective supplement to the ongoing training the students receive. This was determined through an intense focus group process that elicited consensus responses by WD Steering Committees of Job Corps staff as to the effects of Wilderness Discovery on student participants compared to non-participants.

Fourth, the Wilderness Discovery program provided Job Corps students with outstanding opportunities to practice, refine, and talk about Job Corps social skills. We were surprised by the number of students beginning each trip who believed that social skills were irrelevant in their lives. By the end of the each trip, nearly every student holding this belief had changed his/her mind. The key to this change, we believe, was the multiple opportunities to utilize, evaluate, and benefit from the social skills being taught at Job Corps. Students discovered that it was necessary to use a variety of social skills (communication, cooperation, respect for each other and the environment, etc.) in order to make it through the trip. In the context of the wilderness, unlike the center classroom, students discovered the relevance of social skills in ways that were personally meaningful, which had immediate repercussions and feedback to them.

3. The soft skill approach embodied in Wilderness Discovery works well for Job Corps student participants. The use of multiple soft skills during wilderness trips proved extremely effective. Individual activities (alone time, reflection, and journal-writing) and group activities (community circles, team problem solving, and shared responsibilities for both individual and group safety) provided

... students discovered the relevance of social skills in ways that were personally meaningful, which had immediate repercussions and feedback to them.

students multiple opportunities to make discoveries about themselves, each other, and the wilderness.

As they acquired new insights into themselves, each other, and the wilderness, student participants also discovered multiple opportunities to apply their insights. In other words, the discoveries were often immediately relevant to the students. Evidence of this could be seen in each group as they worked to become a functioning community, willingly shared responsibility for tasks through increased teamwork and cooperation, and discovered for themselves that issues could be resolved in the circle without resorting to old behaviors and habits.

4. The wilderness setting (naturalness, solitude, remoteness) is vital to Wilderness Discovery's goal of leaving the culture behind. From the students' perspective, key wilderness features included naturalness, solitude, remoteness, scenery, and the absence of influences that perpetuate poor behavioral patterns back at the center. The absence of dominant cultural influences in the wilderness setting created the psychological and physical space necessary for students to utilize the various soft skill activities to gain new insights into themselves, their relationships with each other, their relationships with Job Corps, and their hopes for productive and rewarding lives. Thus, a wilderness setting (naturalness, solitude, remoteness from cultural influences) is a crucial component of the Wilderness Discovery experience.

5. Positive effects from student participation in Wilderness Discovery are documented. Key findings from the Wilderness Discovery pilot program and study were that participants developed enhanced self-esteem, a spirit of teamwork, cooperation and communication, and a greater appreciation for how the Job Corps can help them meet their individual goals. Early and/or involuntary termination rates were reduced by up to 35 percent, and nearly every student participant discovered that their abilities vastly exceeded their expectations about themselves. With each new success encountered during the trip, their confidence and sense of self-esteem grew. We can, therefore, speculate metaphorically that in some difficult future life situation there will be at the least the potential for students to recall their wilderness experience and remember, "Hey, I can do this. I've overcome difficulties before!"

6. Simulations using the Mathematica (1985) benefit/cost model for Job Corps suggest surplus benefits over costs for Wilderness Discovery as an adjunct to Job Corps. The WD Steering Committees of Job Corps staff, through a focus group process, linked benefits of participating in WD to critical benefit variables in the Mathematica (1985) benefit/cost model. Wilderness Discovery, by providing the chance for new insights, practical experience in cooperation and social skills, and enhanced self-esteem, is likely to increase the retention rate of students in Job Corps, which furthers their social development and performance in educational and vocational training. Studies by Mathematica (1985) show that completing Job Corps leads to increased future employability. This leads to a reduction in: (1) criminal activity; (2) drug and alcohol abuse; and (3) dependency on welfare.

Thus, WD as an adjunct to Job Corps has the potential to increase benefits to society through the enhanced productivity of Job Corps students—an increase

... in some difficult future life situation there will be at the least the potential for students to recall their wilderness experience and remember, "Hey, I can do this. I've overcome difficulties before!"

that our simulation suggests would well exceed the cost of providing Wilderness Discovery, with conservative estimates simulating a benefit/cost ratio of 1.36.

7. Wilderness Discovery received unanimous support by students as a good program for Job Corps and positive endorsements by Job Corps staff for its numerous benefits. Job Corps students think Wilderness Discovery is a good program (100%) and many reasons were given to support their universal view. It gives them a chance to think about their role in Job Corps and their future, and get away from the stress of Job Corps while having time to think. Students felt that it improved their attitudes and motivation, and gave them a chance to find themselves. All these reasons, plus the view that it helps students experience the wilderness who would not otherwise have the chance, support their 100 percent positive view that WD is a good program for Job Corps.

8. Wilderness Discovery is ready for more widespread implementation, with focus on addressing issues such as early terminations, development of student leadership and social skills, and evaluation of long-term effects. The University of Idaho Wilderness Research Center, as a conclusion to this two-year Wilderness Discovery pilot program and study, is designing a Wilderness Discovery orientation book and manual of operations for Job Corps and others interested in a soft skills approach to the wilderness experience.

Wilderness Discovery has been carefully conceived and implemented as a low risk, low stress, soft skills wilderness experience. The success of Wilderness Discovery is contingent upon careful and complete integration of the protocols and safety guidelines upon which the program was designed. This requires specific training. There are always elements of risk present in any wilderness experience program, though these risks are greatly minimized by proper training, experience, and adherence to program protocols.

Short-term benefits are demonstrated, the extent to which they become long-term benefits is speculative and warrants follow-up. While most studies of wilderness experience programs reveal similar findings, such as strengthened self-esteem, the degree to which such effects last and how they relate to other life performance have been the topic of only a few studies. The need for a long-term study to assess the effects of the Wilderness Discovery experience is obvious. The Job Corps program represents an enormous commitment of financial and human resources by the federal government for youth-at-risk from poverty backgrounds. Long-term data and analyses are needed to assess the impacts and effects of both the Job Corps (Reich, 1994) and the Wilderness Discovery program as an effective adjunct to Job Corps goals and objectives.

A long-term study could address key questions such as the degree to which enhanced self-esteem and motivation last; how long students reflect on and utilize success metaphors from their Wilderness Discovery experience; how students adopt wilderness recreation (or more outdoor recreation) as part of their lifestyle; how and to what extent Wilderness Discovery supplements Job Corps training and education in helping students escape the cycle of poverty; and how a wilderness program can help participants forge more positive, long-term relationships through enhanced social skills.

Wilderness Discovery received unanimous support by students as a good program for Job Corps and positive endorsements by Job Corps staff for its numerous benefits.

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