

Eco-Ventures at the Earth Center

ABSTRACT

Youth need not only to be connected to learning in the natural world, but should be engaged in topics relating to nature and the environment. Young people do have the right and the responsibility to participate in decisions affecting their environment, and are capable of making valuable contributions to their communities and society. The Eco-Ventures at the Earth Center summer program provided an opportunity for youth in grades 5 through 7 to participate in outdoor, experiential learning with a focus on ecology and the environment. This summer experience for youth included hands-on learning through exploration, experimentation, debate and discussion. Throughout the program, youth participated in educational activities and discussions concerning environmental awareness and stewardship. Youth wrote and filmed public service announcements which were distributed to various media outlets. Youth developed personal environmental plans of action. Pre-post tests results indicated an increase in knowledge on topics addressed and a statistically significant increase in overall test scores. End of program observational evaluations indicated that youth developed teamwork, communication and decision making skills. A three-month follow-up survey showed that youth had reached their goals, were successful in making personal changes in their environmental impact, and had influenced the decisions of their families, friends and schools.

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Program of Distinction Category

Science, Engineering and Literacy

- Natural Resources Education
- Horticulture and Plant Sciences

Youth in Governance

- Youth Decision Making
- Youth Action
- Community Engagement

Sources of funding that support this program

- County funding provides equipment for experiments and habitat study, scientific testing supplies, video equipment and supplies, and also covers the salary for the Public Information Assistant who oversees the videography aspect of the program. County support for educational equipment and materials increased by 50% from 2007 to 2008.
- User fees cover insurance, food, transportation to field trip sites, program materials, promotional materials and recognition.

- Additional funding and in-kind contributions are received from the County Parks and Recreation Department, and County Department of Solid Waste. Funding from the County Public Works Department also provides a portion of the salary for the Rutgers University Cooperative Education students who work with the development and implementation of the program.

Program Content

Knowledge and Research Base

Environmental action can be defined as a deliberate strategy that involves decisions, planning, implementation, and reflection by an individual or group. Young people do have the right and the responsibility to participate in decisions affecting their environment, and are capable of making valuable contributions to their communities and society (Schusler and Krasny, n.d.). According to the New Jersey Department of Education, students best learn science by doing science. Science is not merely a collection of facts and theories but a process, a way of thinking about and investigating the world in which we live. The National Science Education Standards underscore the importance of citizens understanding the science underlying civic issues: In a world filled with the products of scientific inquiry, scientific literacy has become a necessity for everyone. Everyone needs to use scientific information to make choices that arise every day. Everyone needs to be able to engage intelligently in public discourse and debate about important issues that involve science and technology. And everyone deserves to share in the excitement and personal fulfillment that can come from understanding and learning about the natural world (National Research Council 1996). As noted by author David Sobel, youth today can experience "ecophobia", a fear of ecological problems and the natural world. A study conducted by Louise Chawla of Kentucky State University showed that the alternative to early teaching focusing on saving the world, is to first figure out what contributes to the development of environmental values in adults. Chawla indicates that most environmentalists attributed their commitment to a combination of two sources: many hours spent outdoors in a keenly remembered wild or semi-wild place in childhood or adolescence, and an adult who taught respect for nature. Youth need to not only be connected to learning in the natural world, but should have opportunities to be engaged in topics relating to nature and the environment. Youth engaged in environmental issues may develop understandings of environmental science and political process, and skills in scientific inquiry and civic engagement, all of which are crucial to participation in a democratic society. (Schuler and Krasny, n.d.) Youth can also develop a sense of ownership toward environmental issues on a personal level. Developing in-depth knowledge about issues, and personal investment in issues related to the environment can lead toward responsible actions and better decision making around environmental issues, and a personal commitment to resolving environmental issues. (Hungerford and Volk, 1990).

Needs Assessment

An online search of day camps in Middlesex County, New Jersey indicated that out of almost twenty camps, only one included environmental education, and none included opportunities for youth to participate in environmental action or advocacy. Although these camps included some outdoor learning opportunities, a deliberate focus on including environmental education was lacking, as was intentional programming for middle school age youth. It is critical to provide learning for this often overlooked middle school age group to motivate them become engaged in learning about science and the environment, and to provide opportunities for them to put what they have learned into action through advocacy and civic engagement.

Middle school age youth are primarily exposed to environmental education focusing on global concerns and tragedies such as climate change and destruction of the rainforests. When exposed to these issues, this age group feels powerless to address them. Local concerns of waste management, water quality, and energy conservation are concerns for these youth as well, but they are not provided with the knowledge or tools to deal with them. Youth in this age group need to learn about local environmental concerns, first by forming a connection with their environment through outdoor exploration and experimentation, and then by becoming involved in solving local issues. As David Sobel indicates, what we need, beginning in middle schools, is an orientation toward service. He notes that environmental projects that serve the community show students the relevance of what they are learning and give them an injection of energy and empowerment to address environmental issues. Thinking "I can't save the earth" is defeating, however giving youth a sense of accomplishment and purpose encourages them to continue their efforts in the future.

Providing this type of learning in a day camp setting offers many benefits. Middle school youth are exposed to environmental education in school, but this exposure most often is less than an hour a day and on a short term basis. A camp setting provides youth with the benefit of a week of more intensive, continuous learning in an outdoor setting, and opportunities to engage in cooperative learning with other youth who share their interests. As indicated by the American Camping Association, a camp experience helps youth develop compassion, contribution, commitment and character.

Program Goals and Objectives

The Eco-Ventures at the Earth Center program focuses on the following goals for youth participants:

- Youth will develop a basic understanding of ecological concepts and current environmental issues while learning in the outdoors.
- Youth will develop problem-solving, decision making and scientific inquiry skills, through participation in hands-on experiments, observation and exploration of the natural environment, and the analysis and interpretation of data.
- Youth will learn and practice effective communication techniques through development and filming of public service announcements.
- Youth will develop plans of action and set personal goals relating to environmental concerns.

- The program will utilize a multi-disciplinary team of faculty, staff and college students to plan and run a successful environmental summer program for middle school age youth.

Target Audience

The target audience for Eco-Ventures at the Earth Center is Middlesex County youth in grades 5 through 7 who are interested in science, ecology and the environment. Youth are recruited through a direct mailing to previous Extension program participants, through distribution of flyers at libraries and county youth programs, press releases, and information posted on county websites and local cable stations. Promotion is directed primarily toward current 4-H members and information is sent through direct mail and is included in the county 4-H newsletter. Approximately 50% of 2007 and 2008 program participants were 4-H members. For program participants not currently involved in 4-H, recruitment materials are distributed during the program, and efforts are made by 4-H staff to encourage them to further their involvement in environmental conservation and science by joining a county 4-H club in these project areas.

Type of Program

Special Interest/Short Term Program/Day Camp

Delivery Methods

The Eco-Ventures at the Earth Center summer day program provided an opportunity for youth in grades 5 through 7 to participate in outdoor, experiential learning focused on ecology and the environment. This summer environmental experience for youth included hands-on learning through exploration, experimentation, and opportunities for debate and discussion. Throughout the program, youth participated in educational activities and discussions concerning environmental awareness and stewardship.

Eco-Ventures started in 2007 as a three day pilot program and included the targeted maximum of 20 youth. Program topics included:

- Woodland and wetland habitat studies
- Waste management activities - "Mini-Landfill" Construction/"Take a Trip Through Your Trash"
- Environmental games to introduce carrying capacity and predator-prey relationships
- Study of aquifers and water quality through construction of an "Edible Earth Parfait"
- Environmental scavenger hunt
- Vermi-composting and compost pile construction
- Writing and filming of Public Service Announcements

Three Rutgers University college students (working as summer cooperative education students with the RCE of Middlesex County) served on the planning team with Extension staff and assisted with the design and implementation of the program. These students worked in partnership with staff to lead activities and assisted with the design of the program.

In 2008, the program was expanded to 5 days and included 30 youth. Fifteen of the 30 youth had participated in the 2007 program. The program also had a waiting list of 5 youth.

The 2008 program included the following topics:

- Waste management practices (field trip to a landfill and recycling center)
- Plant propagation and gardening techniques
- Water quality testing
- Invasive species identification and effects on natural communities
- Alternative energy (solar energy activities)
- Environmental games to introduce the concept of various animal adaptations
- Comparative habitat studies (woodland, wetland)
- Environmental scavenger hunt
- Environmental impact studies
- Writing and filming of Public Service Announcements

Three college students and one high school student again served as equal partners with Extension staff in the design and implementation of the program. In 2008, these students worked independently to develop and teach lessons and activities for the program.

Curricula and Educational Materials

The following curriculum and educational materials were used in the development of the program:

- Exploring Your Environment, Levels 1-3, National 4-H Cooperative Curriculum System, Inc.
- Entomology, Group Helpers' Guide, 4-H Cooperative Curriculum System Publication
- Science Discovery Series, Volumes 1 & 2, National 4-H Cooperative Curriculum System, Inc.
- Project WILD K-12 Curriculum & Activity Guide, Council for Environmental Education
- Junior Master Gardener Teacher/Leader Guide
- "Camouflage" Earth X-Press, Bovitz, Keywood, Rothenburger, McKee, (Pilot)

Materials were developed to utilize along with educational activities during the program including habitat and environmental impact data sheets, youth journals, personal environmental impact statement forms and public service announcement planning materials.

An Eco-Ventures at the Earth Center Program Manual that will provide a three year rotation of program topics and educational materials is in progress and will include all materials and resources utilized in the program.

Teamwork and Collaboration

- The program was a joint effort of the 4-H Youth Development and Agriculture Staff of Rutgers Cooperative Extension of Middlesex County.
- Three Rutgers University college students, and one 4-H teen assisted with the development, implementation and evaluation of the program.

- The Middlesex County Department of Solid Waste Management provided programming on recycling and vermi-composting.
- The Middlesex County Landfill and the East Brunswick Recycling Facility provided an in-kind contribution of tours and educational programming.
- The County Department of Parks and Recreation provided assistance with the site requirements for the program.
- The County Extension Public Information Assistant provided assistance with the educational programming on the writing and filming of Public Service announcement and managed the editing of those produced to send to various media outlets.

Program Evaluation

Methods

- Pre and post surveys on topics covered each year were given to youth participants the first and last day of the program.
- A Personal Environmental Impact statement is completed by youth the first day of the program and utilized when completing the end of program Plans of Action.
- An end of program evaluation is given to youth participants to assess the success of the program and whether educational objectives were reached.
- Youth complete Personal Plans of Action on the last day of the program and indicate two sets of environmental goals, one to implement immediately and one to implement within the three months following the program.
- Parents are sent an evaluation following the program to assess their satisfaction with the program and whether youth shared what they learned and their environmental plans of action.
- An observational assessment by Eco-Ventures program staff was conducted to determine whether youth were able to effectively work as a team, communicate with others, and write and deliver a clear message through public service announcements.
- A follow-up survey is sent to all youth three months after the completion of the program to assess their progress toward their goals, changes they have made in their personal impact on the environment, and if they have been able to influence their families, friends and communities to do the same.

Process Evaluation

In 2007, a goal of 20 youth participants was set for the program. This goal was reached. In 2008, the program was expanded to include a maximum of 30 students. Again, this goal was reached in 2008, with a waiting list of 5 youth. In 2008, 15 of the 30 participants had attended the program in 2007. 75% of participants and parents reported that they would like to attend the program again in the future, would like an advanced program for older youth to be developed, and would like to expand the program to two weeks.

Eco-Ventures program staff met each day during the program in 2007 to assess the success of each day's activities and to plan for the next day. Following the program in 2007, program staff reviewed the end of program evaluations and

determined that a five day program would provide an opportunity to include more subject matter and to allow for more time for the PSA portion of the program.

Due to these changes, the Eco-Ventures program staff determined that youth were successful in communicating and working in teams to result in the production of public service announcements with a clear environmental message. Public Service announcements produced in 2008 were more functional and practical for use by media outlets due to increased time dedicated during the program to writing and production of these PSAs.

The program was a strong collaborative effort of faculty, staff and students and each person on the planning team had a role in the teaching and running various aspects of the program. In 2008, college students who participated on the planning team for the program were able to not only provide input on the planning of the program, but worked independently to develop and teach lessons and activities for the program. These students reported that their involvement in the program made them "more effective with teaching scientific subject matter to youth" and helped them learn what motivates youth to learn. They indicated that they feel "more confident in planning and teaching programs to youth" and understand methods and strategies for utilizing experiential and inquiry based learning. Students also reported that their involvement in the design and teaching during the program resulted in a greater ability to participate in college classes and take part in class discussions and public speaking projects.

Outcome Evaluation

Results of the 2007 and 2008 Pre-Post Surveys are listed in Appendix A. Overall scores from pre to post tests in both years showed a significant increase. Scores for each topic also increased indicating that youth developed a better understanding of the topics introduced by the end of the program.

End of program evaluations for 2007 indicated the following:

- 95% of participants planned to share knowledge gained.
- 90% of participants were interested in learning more about the topics covered.

A three month follow-up survey was developed and sent to participants to assess progress toward goals, and measure changes in behavior as a result of participation in the program. The follow-up survey showed that 89% of youth changed their attitudes and behaviors toward the environment, and 89% had a positive influence on the environmental behavior of others.

Youth reported that as a result of their participation in the Eco-Ventures program they:

- Recycle more often.
- Encourage parents to conserve by using energy efficient light bulbs in their homes.
- Built a compost pile at home.
- Turn off lights when they leave a room and lower the heat in their homes.
- Reuse shopping bags.
- Organized a neighborhood litter pick-up

End of program evaluations also showed that youth were satisfied with the program design, program components and educational focus. Over 2/3 of participants

indicated they would like to participate in the program again in 2008, and those who would "age out" of the program in 2008 indicated that they would like to return in 2008 in a leadership capacity.

Evaluations were also sent to the parents of youth participants one week following the completion of the program. Comments included:

- "My child was enthusiastic to return to the program each day."
- "My child did not stop talking about how much fun he had and can't wait to return next year."
- "My daughter said she learned more during camp than she did during the whole school year in science class."

End of program evaluations for 2008 indicated the following:

- 100% of participants plan to share knowledge gained.
- 96% of participants were interested in learning more about the topics covered.
- 89% of participants indicated that the program activities were easy to understand.

The majority of personal plans of action written by youth focused on encouraging family members and friends to conserve water, cut down on usage of plastic and conservation of energy.

2008 follow-up surveys are currently being collected and results can be included at a later date.

Results from parent evaluations were as follows (with a 75% return rate for parent evaluations):

- 100% of parents felt that their child was treated with respect during the program.
- 94% of youth participants shared what they learned and personal goals with their parents

Comments from parents included:

- "It is a great program; it inspires young people to think about nature and the environment, their relationship to it and their ability to influence it in a positive way."
- "They have gained a great deal of information and have put their knowledge to action."

Communication to Stakeholders

Press releases sent to media outlets were successful in generating interest in the program. In 2007 and 2008, 2-3 feature articles appeared in local and regional newspapers which included photographs of the program and interviews with youth participants and program staff. Public service announcements were produced and shared with local cable stations, specifically Piscataway Community Television. They were sent to program participants and county legislators and will be placed on the Extension website (<http://www.co.middlesex.nj.us/extensionservices>). The program was visited by County and State Administrators during the last day of the program. Program evaluation results were shared with state and county administrators and program donors. Youth participants received a copy of the Public Service announcement CD after return of the three month follow-up survey.

Evidence of Sustainability

Efforts are in place to maintain a three year cycle of programming in order to offer new topics every three years. This will allow for youth in grades 5 through 7 to learn different environmental topics each year of their participation, and encourage youth to continue with the program for a three year cycle. This three year rotation is in place so youth attending the program from 5th through 7th grade can experience various topics each year of their participation. Plans are to continue the rotation of this three year cycle with continuous recruitment of new participants. Due to requests from participants, efforts are also in place to develop a leadership based program for youth who have “aged out” of the Eco-Ventures at the Earth Center program.

Replicability

Any and all aspects of the program can be easily replicated as long as necessary components are in place (Appendix F). Various activities and schedules have been shared at the NAE4-HA Conference, and a state level Extension conference. Plans are to develop a program handbook for use by those interested in replicating the program.

Rationale and Importance of Program

The Eco-Ventures at the Earth Center program provides an opportunity for middle school aged youth to not only learn about ecology and the environment, but to take their interest and knowledge in this subject and turn it into action, behavior change and environmental advocacy. With few out of school science programs for youth in this age group, Eco-Ventures at the Earth Center provides them with a base of science skills, a connection to learning in the outdoors and a sense of empowerment to make a difference in their impact on the environment. This can lead to the motivation and confidence to further their involvement in science throughout high school and college. Providing an opportunity for these youth to work with high school and college students, and extension professionals also provides an understanding of the continuum of learning that is possible through high school and college in this subject.

References

- Exploring Youth Environment, Levels 1-3. (n.d.) National Cooperative Curriculum System, Inc. <http://www.4-hcurriculum.org/catalog.aspx?cid=215&c=Exploring%20Your%20Environment>.
- Fox, B. (2006). Water Quality Indicators, Virginia Cooperative Extension.
- Hungerford, H.R., Volk, T. (1990). Changing learner behavior through environmental education. *Journal of Environmental Education*. 21(3).
- National 4-H Council Science, Engineering and Technology Mission Mandate (n.d.), Retrieved from <http://www.fourhcouncil.edu/scienceengineeringtechnology.aspx>
- National Research Council (NRC). (1996). National science education standards. Washington, DC: National Academy Press. Retrieved from http://www.nap.edu/catalog.php?record_id=4962.
- NJ Department of Education, Core Curriculum Content Standards, (2002, July). Retrieved from <http://education.state.nj.us/cccs/>.
- Project Wild K-12 Curriculum and Activity Guide. (2000). Council for Environmental Education, Houston, TX. www.c-e-e.org.
- Schusler, T., Krasny, M. (n.d.) Youth Participation in Local Environmental Action: Integrating Science and Civic Education, Retrieved from http://www.gardenmosaics.cornell.edu/pgs/aboutus/materials/Youth_Participation.pdf.
- Sobel, D. (1996). *Beyond Ecophobia: Reclaiming the Heart in Nature Education*, The Orion Society and the Myrin Institute.
- The ABC's of Environmental Education. (2006). Environmental Protection Agency, Retrieved from <http://www.epa.gov/region5/publications/abcs2006-optimized.pdf>

Appendices

Appendix A

Pre-Post Survey Results

Paired T-test of Pre-Post Survey Results

	n	Pre-Test Mean (Number Correct of out 8 questions)	Post-Test Mean (Number Correct of out 8 questions)	Standard Error of Difference	t	df	Significance
2007	19	2.63	5.89	0.470	6.9366	18	0.0001
2008	28	1.32	7.82	0.347	18.7350	27	0.0001

2007 Pre-Post Survey Topics:

Question	% Correct Pre- Survey	% Correct Post-Survey
Why do you need to circulate air through a compost pile?	53% (10)	84% (16)
What does GPS stand for?	47% (9)	100% (19)
Vermicomposting is the process of turning food into compost using ----?	5% (1)	95% (18)
What is leachate?	16% (3)	89% (17)
How long does it take for plastic to decompose?	16% (3)	63% (12)
In what habitat would mosquito larvae be found?	47% (9)	58% (11)
What makes a plant an invasive species?	37% (7)	95% (18)

*** One question included in the survey was "thrown out" as the topic was not covered to time constraints.*

2008 Pre-Post Survey Topics:

Question	% Correct Pre- Survey	% Correct Post-Survey
Name one type of plant propagation other than seeds.	3% (1)	68% (19)
Name 3 materials that can be used as mulch.	14% (4)	86% (24)
Name one common invasive plant species in NJ.	7% (2)	86% (24)
The healthiest pH range for a pond or lake is ...	36% (11)	93% (26)
What is the most common thing found in landfills?	13% (4)	96% (27)
Name one difference between a dragonfly and damselfly.	3% (1)	86% (24)
In what area would the blue pickerel fish be found?	23% (7)	96% (27)
What are the negative consequences of an <i>algal</i> bloom?	3% (1)	79% (22)
Name one animal that you would find in a lake environment, but not in a pond environment.	10% (3)	68% (19)

Appendix B

Eco-Ventures at the Earth Center Logic Model

Situation	Inputs	Outputs	Short-Term Outcomes	Medium-Term Outcomes	Long Term Outcomes
<p>Youth want and need to feel a sense of purpose in addressing issues that affect them, and in most cases feel powerless to address environmental issues. Giving them the opportunity to address environmental issues gives them a sense of accomplishment and purpose, and encourages them to continue in their efforts in the future.</p>	<ul style="list-style-type: none"> • Ecology and environment-al education resources including curriculum materials • 4-H Staff • Extension Agriculture Department Staff • College students High School students Pre-post tests and evaluation materials • Curriculum focused on ecology and the environment • Financial support 	<ul style="list-style-type: none"> • Collaboration of Extension staff and college students • Activities and program materials developed to address ecology and the environment • Strategies to develop teamwork, communication and decision making skills in youth • A hands-on, educational, summer program for middle school youth that includes outdoor learning, habitat exploration, civic engagement, environment-al action and advocacy. 	<ul style="list-style-type: none"> • Increased knowledge of topic areas presented during program. • Gain in participants' skills in decision making, teamwork, and cooperation • Change in attitudes about environmental impact. • Increased interest in becoming involved in environment-al issues, advocacy and civic engagement • Documented interest in learning more about the ecology and the environment 	<ul style="list-style-type: none"> • Youth make changes in their impact on the environment. • Youth share what they learned with family and friends. • Youth incorporate what they learned at the program into their daily routines, e.g. recycling, and composting. • Youth search for additional opportunities to learn about environmental issues. • Youth come back to program as participants or as youth leaders. • Youth experience successes at school to and attribute this to learning experienced at program. 	<ul style="list-style-type: none"> • Youth make changes in environmental impact in families, schools and communities. • Youth become involved in and take leadership in environmental groups in school and the community. • Public Service announcements developed by youth are used by media outlets and there are indications that the PSA message is adopted by viewers. • Eco-Ventures at the Earth Center philosophy and program methods are replicated in other states.

Appendix C
2007 Program Photographs



Youth participate in a pond study.



Constructing a mini-landfill



Learning about vermi-composting



Oil Spill Clean Up Activity Announcements



Filming Public Service

Appendix D
2008 Program Photographs



Water quality testing



Habitat study



Environmental Health Assessment Center



Trip to Recycling Center



Plant propagation Activity



Filming Public Service Announcements

Appendix E

Sample Program Schedule

2008 Eco-Ventures Schedule

Monday, August 25th

9:00 – 9:15	Introductions and Welcome
9:15 – 9:30	Intro Games
9:30 – 9:45	Pre-Survey and Personal Impact Statements
9:45 - 10:00	Set up Solar Prints Activity
10:00 – 10:15	Short Overview of Hike and Habitat Studies
10:15 – 11:30	Habitat Hike/Invasive Species Intro
11:30 – 12:00	Lunch
12:00 – 1:00	Habitat Hike Intro and Activities
1:00 – 2:00	Solar Energy Activities (collect solar Prints)



Tuesday, August 26th

9:00 – 9:15	Welcome and Intro to Day's Activities
9:15 – 10:15	Camouflage Activities, Animal Track ID
10:15 – 10:30	Break
10:30 – 12:00	Pond and Lake Study
12:00 – 12:30	Lunch
12:30 – 1:00	Water Quality Testing
1:00 -2:00	Woodland Study



Wednesday, August 27th

9:00 – 9:15	Welcome and Intro to Day's Activities
9:15 – 10:00	Plastic and Packaging Activity
10:00 – 11:30	Travel to Landfill and Landfill Tour
11:30 – 12:00	Lunch
12:00 – 1:30	Travel to Recycling Center and Tour
1:30 – 2:00	Discussion



Thursday, August 28th

9:00 – 9:15	Welcome and Intro to Day's Activities
9:15 – 10:00	Vegetable Garden Tour and Harvesting
10:00 – 10:15	Break
10:15 – 11:30	Environmental Scavenger Hunt
11:30 – 12:00	Lunch (Waste Free Lunch!!!)
12:00 – 12:45	Planting and Transplanting
12:45 – 2:00	Video introduction and Video script writing



Friday, August 29th

9:00 – 9:15	Intro to Day's Activities
9:15 – 10:30	Entomology Intro, Collection and Activities
10:30 – 10:45	Break – Healthy Smoothies
10:45 – 11:15	Environmental Games
11:15- 11:45	Video Practice and Editing of Scripts
11:45 – 12:15	Lunch
12:15 – 1:30	Video Filming
1:30 – 2:00	Post Tests, Evaluation and Recognition

Appendix F

Criteria for Successful Replication of Program

The following components will assist with the development of a successful environmental education and civic engagement program for middle school age youth:

- A planning committee for the program that includes faculty, staff, college and high school students, that have interest and experience in environmental education and youth development
- Environmental education curriculum and resources to support program topics
- Program site that offers an opportunity for exploration of various habitats
- Indoor facility for program activities and in case of inclement weather
- Funding to support the program – a combination of user fees, in kind contributions (for speakers or outside presenters), and local, county or state level program support
- A plan for promotion and recruitment for the targeted age group
- Program registration materials
- Program plan that includes opportunities for outdoor exploration of various habitats, hands on experimentation focusing on different environmental topics, and opportunities for discussion and debate while utilizing experiential learning philosophy
- Inclusion of video component of the program through development and filming of public service announcements by youth
- Program evaluation materials – including pre-post tests focusing on program topics, and end of program evaluation
- Component of the program that includes assisting youth in developing short and long term goals that can be used as a plan of action for environmental action