

IMG2005 Search for Excellence Application

Name of MG Program: Anne Arundel County Master Gardeners, Maryland

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Category: Innovative Projects

Project Title: *Down and Dirty: Rehabilitating the Chesapeake Bay Landscape One Garden at a Time*

Description of Project: This program is an innovative and workable solution for nutrient reduction required in the *Chesapeake 2000* interstate agreement. It is about educating people on how to easily reduce nutrient inputs to the Chesapeake Bay using native vegetation, and teaching them how to reconcile their landscape with natural ecological processes. The program teaches and encourages environmental stewardship at all levels of education and participation. By the spring of 2003, it had evolved into a major educational outreach to all levels of the community. In 2003 1200 ft² of poor sandy soil at the Anne Arundel County Public Schools (AACPS) Outdoor Education Center was converted to a vibrant native plant garden. Based on the success of 2003, the project was expanded to 3600 ft² at the publicly visible, and much more distressed urban area of the AACPS Board of Education.

The program seeks to develop environmental stewardship in all areas of Anne Arundel County education. This includes primary (grades 1 and 5), middle (grade 8), secondary (Horticulture Program), and special education (Old Mill High School). The goals are to (1) establish native plant demonstration gardens in regularly used locations, (2) create learning experiences from growing native plants in school greenhouses to actual development, design and installation of native plant gardens, (3) create demonstrations on environmentally sound landscaping techniques, (4) teach students environmental stewardship, (5) develop teacher awareness and training, (6) create demonstration/learning sites for public outreach, (7) Create outreach programs for the community such as talks, and plant lists, (8) promote a workable scheme for partnerships between the AACPS and the Anne Arundel County Cooperative Extension Master Gardener (MG) program to improve environmental learning and education at all age levels, (9) develop a program for teaching life skills to teenaged special education students, and (10) save maintenance costs for AACPS.

To achieve these goals we (1) created classroom exercises on soil, plants, native plants, ecology, and garden maintenance, (2) developed hands-on learning experiences by providing tools and materials, (3) made 3 PowerPoint programs about Native Plants (*Going Native*), Plant Ecology (*Reconciling Nature*), and Soils (*The Real Dirt on Soil*) (given to Garden Clubs, MG Intern Training, and Homeowner Associations in county), (4) obtained parent volunteers to assist the students in plantings, (5) made a garden plan for the sites, (6) directly obtained grants totaling \$7500.00 over 2 years (from the Chesapeake Bay Trust, and Unity Gardens), and (7) helped the AACPS Outdoor Education Program secure a grant from the National Oceanic and Atmospheric Administration to expand the native plant/environmental stewardship program across all schools in the county.

Anne Arundel County is, like all counties in the metroplex area, highly impacted by suburban development, disappearing open space, and diminishing farmland. Master Gardeners developed the garden designs, did grant writing, procured supplies, and plants. The AACPS organized the student participation, site preparation, and provided greenhouse facilities. This entire effort was supported by outside grant funding and aided by volunteers. The garden designs were done by the Carroll County Master Gardeners. Designs at both sites included full sun, partial shade and full shade garden components. Native plants used were those native to the Anne Arundel County and described in the publication, "*Native Plants for Anne Arundel County*," by Elinor Gawel of the AA County Environmental Planning Division.

There is a four fold purpose for this project (1) to educate students, teachers, parents and county residents on proper soil preparation, planting techniques, non-invasive wildlife control, and native plants, (2) to address the Chesapeake 2000 agreement where we develop useful nutrient run-off and infiltration management control methods, (3) to enhance the landscape of an area using native vegetation, and (4) to demonstrate a quiet, friendly approach to environmental stewardship.

Native plants and proper soil conditioning provide a cost effective, and environmentally sound, limited infiltration device (LID) for use in reducing nutrient inputs to run-off and ground water infiltration. The locally adapted native vegetation (1) grows naturally in a planting area, (2) is important to wildlife, (3)

has disease and drought resistance, (4) needs less maintenance, and (5) holds the local soils in place better than the non-natives. By reaching out to the schools with their students and teachers, we have a very quiet, positive way of spreading the environmental stewardship message throughout the county.

Results: The team interacted with over 750 students during the preparation and planting process of the 4800 ft² of landscape beds. In addition, another 200 students have harvested seeds from the growing native plants and propagated them in the Technical School North greenhouses. These plants were used in the plantings, and to revitalize the plantings at the Outdoor Education Center and the Board of Education (BOE). Parents, employees and residents of the county have commented to us about the beauty of the garden, and the interest shown by their children in what they did. In the first year, the organic condition of the soil rose 40%, and the phosphate reduced by 10%.

Conclusions: It is important to find and work with an environmentally knowledgeable person in your school system. Be prepared to write grant applications, as it is a way to get financial assistance as well as a project evaluation. Finally, never hesitate to research and apply for awards. This will, also, help you to evaluate your program.

Master Gardeners involved: Roosevelt Caldwell, John Foerster, Kay Ford, Jane Ingwersen, Alice Mutch, Marietta Schreiber, Andrea Williams, Judy Wilson, Don Lipscomb (Carroll County.), Marie Mikulak (Prince Georges County)

Simplicity: The projects were simple in design, emphasizing building a garden for the purpose of teaching and demonstrating how to rehabilitate the run-off and ground waters entering the Chesapeake Bay. Elements of gardening using native plants, compost, and mulching are universal gardening concepts. In this program, they were applied for a sound environmental purpose, control of nutrient run-off. Actual measurements of the impacts were done using before and after soil sampling.

Practicality: The projects were designed to need little maintenance, or extensive watering. Design elements, education and outcomes were all aimed at being universally applicable.

Originality/Creativity: These gardening projects were designed to educate not only school students, but the public. It was a way to teach about win-win ecology. This is ecology using the theme of rehabilitation rather than restoration or reservation. We could emphasize the clean-up needs for the Chesapeake Bay by simply demonstrating the use of native plants.

Goals: We developed a program of hands-on learning, and public involvement oriented toward teaching responsible environmental stewardship while focusing on the expressed mission of both organizations: AACPS Outdoor Education Program: "...to provide outdoor education experiences for students, teachers and parents in which they develop knowledge, skills, and environmental sensitivity."

AACCE Master Gardeners: "...to educate...about effective and sustainable horticulture practices that build healthy gardens, landscapes, and communities."

Impacts: Measurable (funding, client satisfaction, awards)

Funding:

- After the project was reviewed by funding agencies, the Master Gardeners directly received 5 grants for this project totaling \$6,300.00. With our help, two additional grants were given to 2 schools (West Annapolis Elementary, and Annapolis Middle) for an additional \$1200.00
- With our help, additional funds were developed by the Arlington Echo Staff from making and selling rain barrels, and
- With our support an educational grant to AACPS was received from the National Oceanic and Atmospheric Administration.

Client Satisfaction:

- Based on surveys collected (n=224, number of schools=5) from students participating in the program, there is a 94% approval of the program.
- Teacher participation has increased from 10 schools to 20 schools (200%).

Awards:

- Tawes Environmental Award (MD State award received in 2004),
- Association of Natural Resource Extension Professionals (ANREP) for 3 national awards in 2004 (Innovative Program, Partner, Poster Presentation),
- Maryland first place in the 2004 Master Gardener Conference Search for Excellence, and
- 3rd place as the National Garden Crusader Award for Education by Gardeners Inc.

Cost Savings:

- Finally, we estimate that the master gardeners in this project have saved the county a man-year of effort resulting in a savings of about \$52,000.00 in wages and benefits;

- converted 4800 ft² of neglected school grounds into pocket parks saving \$500.00 year in maintenance cost;
- provided life skill training to 20 special education students per year, and
- allowed environmental stewardship to become a means of completing “service to the community hours” for graduation (200 students).

Nutrients:

- organic concentration up 40%; and
- phosphate concentration down 10%

Intrinsic:

- Approval of all aspects of the education and site conversions by Anne Arundel County Board of Education, Office of the Superintendent;
- Approval of land use plans by the County Schools Maintenance Director;
- Watching and helping special education students blossom with confidence and interest as they helped us prepare the beds for planting; and
- Watching older students “teach” younger students how to plant and be more environmentally aware.

Number Impacted:

950 Students, 125 parents, 25 teachers, plus we have presented this information at The ANREP Bi-annual Meeting (May 2004), The Bioscience Conference at the U. of Maryland November 2004, The Schoolyard Habitat Conference, November 2004, the Water Resources Conference in Baltimore (Nov. 2004), and the 2004 Master Gardener Regional Conference in Baltimore (Oct. 2004).

Other Community Groups:

- Folger-Mckinsey Elementary School (5th Grade)
- Linthicum Elementary School Teacher (5th Grade)
- West Annapolis Elementary School Teacher (1st Grade)
- West Meade Elementary School Teacher (5th Grade)
- Annapolis Middle School (8th Grade)
- Old Mill High School Special Education Program
- Center of Applied Technology North-Horticulture Program
- Arlington Echo Outdoor Education Center
- Anne Arundel County Board of Education-Public Relations
- Carroll County Cooperative Extension, Master Gardener Program
- Prince Georges County Cooperative Extension, Master Gardener Program

Budget (actual costs over 3 years):

<i>Item</i>	<i>Chesapeake Bay Trust</i>	<i>Unity Gardens</i>
Plants	4500.00	1500.00
Mulch (pine bark)	400.00	100.00
Compost	300.00	100.00
Materials (fertilizer, tools, etc.)	300.00	200.00
Soil Sampling	100.00	100.00
<i>Total</i>	<i>5600.00</i>	<i>2000.00</i>

Other Pertinent Information: A Manuscript is _ complete on this program. It will be submitted to the *Journal of Extension*.