

## PUBLIC EDUCATION

DNREC offers citizens in the Piedmont Basin a wealth of opportunities to obtain information regarding environmental conditions in their watershed, from public meetings and workshops to Earth Day activities, river cleanups, seminars, and forums. Local citizens can also take advantage of programs in state parks that provide recreation and environmental education. Brochures and pamphlets are available from all divisions. Public participation is encouraged in DNREC programs and is the essential ingredient in citizen monitoring programs to protect the health of streams and wetlands. Initiatives addressing environmental issues, such as the Whole Basin Management Plan, need input and advocacy from citizens in order to succeed.

The “Departmental Overview” in the *Mission of the Department of Natural Resources and Environmental Control* states that DNREC “increasingly must respond quickly and effectively to . . . an increasingly more aware and environmentally concerned public.” Further, if people are the primary cause of a deteriorating environment, then people must be informed about the consequences of their actions and their need to become involved.

DNREC’s mission to preserve and protect the natural resources is facilitated by offering a wide variety of educational programs for citizens of all ages. These programs that explore and interpret our natural resources are designed to be fun, educational and multidisciplinary while encouraging environmental stewardship.

Three divisions in DNREC have full-time coordinators who conduct educational programs. All divisions have educational components which conduct public outreach at the Delaware State Fair, Earth Day and other events. Workshops are also conducted for clients who need specific information to meet regulations.

### Educational Programs

DNREC offers teachers, youth leaders, and students in the Piedmont Basin, and throughout Delaware, a variety of environmental education resources. These resources, in the form of teacher training, special programs, curricula, volunteer programs, and printed and audio/visual materials, address a broad range of environmental issues including pollution prevention, habitat and wildlife, water quality, specific ecosystems, and aquatic resources.

#### *Project Wet*

National Project Wet is an interdisciplinary water education program intended to supplement an educator’s existing curriculum. Its goal is to facilitate and promote the awareness, appreciation, knowledge, and stewardship of

water resources through the dissemination of classroom-ready teaching aids. Teachers K–12 can obtain the guides by attending in-service workshops (2.5 credit).

#### *Project Wild*

This internationally recognized curriculum supplement addresses the issues of habitat and wildlife and man’s relationship to the natural world. The hands-on activities develop not only science skills, but other disciplines such as social studies, language arts and math. Teachers K–12 can obtain the workbooks by attending in-service training (2.5 credit).

#### *Aquatic Wild*

This curriculum is the “wet” version of Project Wild, focusing on aquatic habitats and wildlife. Participants must have completed Project Wild as a prerequisite. Teachers receive 2.5 in-service credit.

#### *Three R’s for the 90s: Reduce, Reuse, Recycle*

This Delaware-specific curriculum supplement is geared to a K–8 audience and addresses the concept of pollution prevention through recycling, reusing and reducing our waste streams. Hands-on activities develop multi-disciplinary skills. Teachers and youth leaders receive materials after completion of in-service training (2.5 credit).

#### *Water Quality*

The Water Quality Education Program addresses wastewater treatment, surface water, groundwater and water conservation and is geared toward a K–12 level. Corporate sponsors adopt a school and provide funds for participating teachers to receive a resource guide, video, student guides and related handouts at a three-hour workshop on each unit topic.

#### *State Park Environmental Education and Interpretive Field Studies*

The statewide environmental education and interpretive programs are flexible activities suited to the grade level of the student. These programs are offered on-site at most state parks, in the classroom, or at other requested locations. These studies encourage an environmental ethic in our natural, cultural and historic world, and stress small group interaction. Programs are designed for public and school groups and teachers. The program content and topics can be readily adapted to integrate with previous classroom studies. Groups may attend for an hour, a day, or at some parks, overnight. Teacher training with in-service credit is also available.

#### *Aquatic Resource Education*

This new program is housed at the Aquatic Resource Education Center on Route 9 near Smyrna. Programs have been developed to address such topics and issues as fisheries management, wetlands education, fishing skills, and

aquatic resources management. These programs are available for teachers, youth and school groups. A boardwalk over the marsh was completed in 1996 as well as a pavilion for instruction and lunch.

### *Boating Safety*

A new Delaware law requires all persons born after January 1, 1978, to successfully complete a boating safety course prior to operating a vessel in Delaware waters. Courses are offered statewide and cover topics such as ebb and flow of tides, rules of the road, and potential hazards from weather.

### *Hunting Safety*

Persons born after January 1, 1967 must successfully complete a hunter safety course in order to purchase a Delaware hunting license. Topics of the course include, in addition to firearm safety, landowner relations, ethical behavior, wildlife identification and conservation laws.

### *Speaker's Bureau/Resource Experts*

DNREC can provide personnel to address youth groups or classrooms on a host of topics. For more information, contact the Office of Information and Education at (302) 739-4506.

### *Good NaturEd News*

This newsletter, published three times each year, is a guide to environmental education resources available in Delaware and nationally. The publication is distributed to all public school teachers in the state.

### *Technical Water Quality Monitoring*

Be a scientist—join a Water Quality Monitoring Program that provides reliable baseline physical/chemical data. Technical programs are being conducted on several Delaware waterways. Volunteers range from high school students to retired chemists. Initial training and follow-up sessions insure quality control in sampling procedures.

### *Electronic Bulletin Board*

The Department operates a portion of the Department of Public Instruction electronic bulletin board system. Teachers and students can access information about Delaware's natural resources, teaching materials and programs and activities through a personal computer and a modem.

## **Volunteer Programs**

These programs are a great way to involve students and youth group members in outdoor, hands on activities that are educational and beneficial to our environment.

### *Stream Watch*

This program, operated in conjunction with the Delaware Nature Society, trains volunteers to assess water quality in

ponds, rivers and streams around the state using basic water testing kits, visual and biological surveys.

### *Adopt-a-Wetland*

Groups can learn more about wetland habitat and work to enhance these valuable areas by adopting a wetland area.

### *Coastal Cleanup*

This one-day event, held each fall, teaches participants the problems caused by litter in aquatic environments.

### *River Cleanups*

Each spring, the Department sponsors a river cleanup in conjunction with Earth Day.

### *Envirothon: A High School Environmental Challenge*

The Envirothon is a competitive, problem-solving, natural resource event for students to educate them about the environment. High school students are meeting this challenge every year. They are now more concerned and informed about the world around them.

## **Education Facilities**

The message of DNREC park brochures invites visitors to come "relax and enjoy nature at its best; escape to tranquil beauty of forest hills, cool green leaves, and rushing streams." As visitors hike trails and observe wild flowers, songbirds, deer, and other wildlife, a sense of responsibility to preserve Delaware's natural wonders develops. White Clay Creek State Park, in the Piedmont Basin, is an example of a partnership forged among private citizens, government agencies, conservation organizations and corporations to protect the natural resources of the White Clay Creek valley.

Several DNREC-owned properties, including both land and buildings, have been identified as areas that can be used for environmental education purposes. These areas are open to the public and are available primarily free of charge. Designated usage, availability, location, and/or educational features are listed below. Volunteers are welcome to assist with projects and programs.

- ◆ *Bellevue State Park.* (Parks and Recreation). Interpretive programs for general public, youth groups, and special populations; summer day camps; seasonal programs for special populations.
- ◆ *Brandywine Creek State Park and Nature Center.* (Parks and Recreation). Open year-round to the public. Exhibits; enclosed wildlife observation area; interpretive programs for school groups (K-12), general public, youth groups, summer day camps for youths; two self-guided interpretive trails; two designated nature preserves with trails; 12 miles of nature trails; within the park containing various habitats (Piedmont) available for nature study.

- ◆ *White Clay Creek State Park, White Clay Creek Visitor Center and Possum Hill Preserve Center.* Year-round interpretive programs for year-round visitors; 560 acres within park containing various habitats (Piedmont) available for nature study; 1700 untouched acres (White Clay Creek Preserve); year-round programs for the public and school groups.

## **Public Participation and Advocacy**

If the natural resources of Delaware are to be preserved, then the public must be made aware of the problems and participate in the plans and tactics for environmentally sound solutions. DNREC encourages citizens to become stewards of their watersheds by taking part in workshops, public meetings and hearings, Earth Day activities, the University of Delaware's Coast Day, Delaware State Fair, and other environmental education events. DNREC uses various media to reach the public and encourage their participation and input on various issues.

### *Citizen Monitoring*

*Stream Watch Technical Monitoring.* Citizens work with DNREC scientists, monitoring selected sites using chemical methods. Data will be used to build models for determining total minimum daily loads of the watershed.

### *Newsletters from Conservation Organizations*

Newsletters keep citizens informed of current issues and ways they can interact with agencies and legislative bodies to express their opinions.

### *Brochures*

Brochures such as the Clean Water Series, Water Quality Nonpoint Source Pollution Fact Sheets, Managed Forests, and Clean Water instruct citizens in environmentally sound methods of protecting the environment and preventing pollution.

## *Workshops and Conferences*

The Landowners' Watershed Protection Conference sponsored by Delaware Nature Society and the Statewide Water Resources Conference organized by the Delaware League of Women Voters are examples of events focused on critical issues and how consensus can be reached and action taken to protect and improve water quality and supply in the state.

## *Special Events*

Each year thousands of Delawareans make saving the environment part of their routine lives as they participate in efforts to enhance the beauty of roads, highways, beaches, rivers, and streams. The departments of Natural Resources, Agriculture, and Transportation, and the Federation of Garden Clubs sponsor programs such as "Get The Drift and Bag It," "Help Keep Delaware Clean," "Operation Wildflower," "The Planting of the Green," and river cleanups.

## *Cooperative Agreements*

DNREC has cooperative agreements with many organizations. This often results in advocacy for Best Management Practices and recommendations to improve the quality of natural resources. An example is the recent agreement with Winterthur to establish a comprehensive plan for managing and conserving its physical and natural resources, developing expanded non-museum program opportunities, and integrating Winterthur plans with the larger area. This will result in a master land-use plan that will establish overall conservation land management practices and guidelines, site-specific natural area recommendations, facilities expansion and replacement guidelines, and an implementation strategy for selected environmental programs. This planning process will take place in four phases in the next three years. Cooperation between DNREC and Winterthur staff will result in consolidation of efforts to preserve sensitive areas and achieve goals of both organizations.