INSIDE! Special Back to School Issue

# MD Environment

Maryland Department of the Environment

September 1998

## What's Inside...



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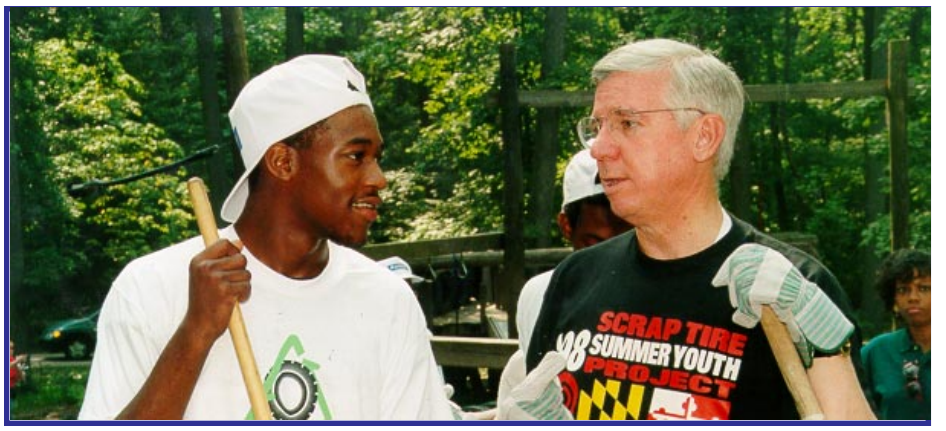
# Summer Youths Refurbish Scrap Tire Playground at Patapsco Valley State Park




Governor Glendening talks with a summer worker during a break at the Patapsco State Park Project.

Governor Parris N. Glendening and Lt. Governor Kathleen Kennedy Townsend late last month joined teens working to refurbish a scrap tire playground at the Patapsco Valley State Park in Baltimore County in a partnership with Sears/National Tire and Battery, State agencies and the Patapsco Valley community as part of the 1998 Scrap Tire Summer Youth Employment Project.

The Patapsco Valley Project is receiving support from Sears/National Tire and Battery (NTB), which initiated a national program known as Recycling Old Tires Aids the Environment or ROTATE to raise public awareness about scrap tire disposal and various options for recycling or reuse of recycled rubber. Approximately 50 teens participated along with volunteers from Sears/NTB, other State agencies and members of the Patapsco Valley community.

"While recycling scrap tires is the purpose of this project, its most important aspect is the character-building lessons learned about hard work, dependability and teamwork," Governor Glendening told the young people.

***"While recycling scrap tires is the purpose of this project, its most important aspect is the character-building lessons learned about hard work, dependability and teamwork," Governor Parris N. Glendening.***

The Lt. Governor also remarked on the summer youths from the Department of Juvenile Justice working as part of their court-ordered community service requirements. "Today's refurbishment not only gives young people a chance to beautify their State park, it demonstrates our resolve to hold juvenile offenders accountable for their action," Lt. Governor Townsend said. "Through this and other community work projects, juvenile offenses are 62 percent more likely to result in a sanction than they were four years ago."

The Patapsco Valley State Park playground was built in 1994 by more than 100 volunteers from community groups and the Maryland departments of Environment and Natural Resources, and the Maryland Environmental Service. It is the first scrap tire playground built as a cooperative effort between these State agencies.

*Youths continues on page 2*

# Conformity and Smart Growth ... How Do They Relate?

The Maryland Department of the Environment (MDE) works with the Maryland Department of Transportation and local government representatives to plan improvements to transportation systems in Maryland.

Air quality conformity is an important part of that planning effort. It balances the development of transportation systems with efforts to achieve and maintain clean air. Conformity is an important element of the MDE Smart Growth Plan because it can influence where new growth occurs through the constraints it places on transportation planning.

Conformity promotes the smart growth principles by requiring that vehicle emissions remain at or below limits set in regional air quality plans. These limits must be met in spite of potential growth in emissions due to projected growth in population and vehicle use. The emissions limits are maintained using technological controls and demand management techniques to offset emissions occurring due to growth. This leads to development of a more efficient transportation system.

Limiting emissions encourages transportation officials to concentrate additional highway construction in priority funding areas, to integrate solutions to transportation problems with community redevelopment, to emphasize alternative ways to travel such as walking, biking, or taking transit, and to reduce congestion. Smart growth can help establish development patterns that support these goals and reduce our dependence on automobiles.

**What is Conformity?**

Conformity is a federal requirement that makes sure federal actions do not compromise the progress of state governments in complying with federal air quality standards by funding or permitting projects and activities that increase pollution. Federal funds help pay for a majority of the transportation system modifications. The release of these funds to Maryland depends on whether the metropolitan transportation plans "conform" with emissions limits established in air quality plans called State Implementation Plans

*Conformity continues on page 3*

MDEnvironment

September 1998

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## Governor Glendening Selected by Fellow Governors to Chair NGA Natural Resources Committee

On August 4, Governor Parris N. Glendening was selected to serve as Chair of the National Governors' Association (NGA Committee on Natural Resources). The appointment of Governor Glendening came during the final day of the NGA's 90th annual meeting in Milwaukee, Wisconsin and is effective immediately.

"I am honored to have been selected by my fellow governors to chair the National Resources Committee," said Governor Glendening. "I look forward to working with my fellow committee members and all of the nation's governors to tackle tough and complex issues such as coastal zone management, ensuring compliance with the Clean Air Act, building state and federal partnerships for environmental protection and electricity restructuring.

"Maryland has been recognized as a national leader for our policies on Smart Growth and Pfiesteria," the Governor added."I hope to be able to apply what we have done here in Maryland at the national level through the NGA."

This past year, Governor Glendening served as one of two lead governors on technology and also was a member of the NGA's Committee on Human Resources and the Children's Task Force.

*Youths continued from page 1*

Governor Glendening pitching in with the 1998 Scrap Tire Summer Youth Employment Project workers.

NTB is purchasing 60 tons of crumb rubber from a Maryland scrap tire recycler. The crumb rubber is used as a protective cushion for the children using the scrap tire playground. The purpose of the project is to replace the old crumb rubber installed when the playground was built.

Twenty tons will be used at the Patapsco playground and the remaining 40 tons will be used at scrap tire playgrounds at Cunningham Falls State Park in Frederick County and Calvert Cliffs State Park in Calvert County.

Following in the tracks of last summer's Scrap Tire Project, the 1998 Project has been successfully completed with 20,000 tires collected and properly disposed/recycled. Over 30 tire dumpsites were cleaned up this summer on state forest and park properties in Allegany, Anne Arundel, Baltimore, Cecil, Frederick, Garrett, Howard, Montgomery and Washington Counties and the Town of Ocean City. All local government agencies involved agreed to supply transportation of the tires to a licensed tire disposal/ recycling facility.

The students are being paid through the State Used Tire Cleanup and Recycling Fund, which was established in 1991 and generates revenue from the collection of one dollar from every new tire sold in Maryland.

The Maryland Department of the Environment uses the funds for scrap tire removal, construction of scrap tire playgrounds, conducting demonstration projects and for implementing a licensing program for scrap tire haulers, recyclers and collection facilities.

## Celebrate National Pollution Prevention Week (September 21-25)

*by Laura Armstrong*

National Pollution Prevention Week, takes place this year September 21-27, is recognized around the country as an opportunity to highlight the environmental and economic benefits of looking "upstream" to stop pollution before its created. Over 180 facilities, including 36 in Maryland, have agreed to explore and implement ways their organization can prevent pollution and share their experience through the *Businesses for the Bay* program. This voluntary program aims to increase participation in pollution prevention and reduce the amount of chemicals released to the Chesapeake Bay watershed. Focusing on pollution prevention over waste treatment and disposal can prompt changes that often result in cost savings. As Tom Brice of Duron Paints reports, "The increased production of water-based coatings over solvent-based coatings and the improvements we've made to our procurement system are changes that will produce positive business and environmental results for years to come."

**What is Pollution Prevention (P2)?**

Goals
- Eliminate or reduce waste generation
- Prevent raw material and product losses
- Prevent spills and accidental releases

Benefits
- Reduces raw material and waste disposal costs
- Improves efficiency
- Reduces worker health and safety risks
- Reduces long-term liability
- Helps achieve compliance with environmental regulations

Techniques
- Process efficiency improvements
- Material substitution
- Inventory control
- Preventive maintenance
- Improved housekeeping
- In-process recycling and use of waste exchanges
- Increased electronic communication to reduce office waste

In addition to the positive recognition of being identified as a participant in *Businesses for the Bay*, members are also eligible for annual Excellence Awards presented to small, medium, and large businesses in each state by the Chesapeake Executive Council.

A wide variety of businesses have also volunteered to be mentors for the *Businesses for the Bay* program. These are individuals who have offered to make their pollution prevention technical knowledge and expertise available free of charge to businesses requesting assistance. As Grace Davison environmental engineer and *Businesses for the Bay* mentor Steve Dyer notes, "By sharing our best practices, we can collectively have a major impact on the environment."

Another category of participation, "Partners for Businesses for the Bay" has recently been added. This classification is intended for groups such as trade associations and chambers of commerce that wish to support the program by actively promoting it with their members.

You can join *Businesses for the Bay* by simply completing a Commitment Worksheet. Reporting forms asking you to provide an update of your activities and progress you have made will be sent every spring.

For more information and a copy of the Commitment Worksheet, contact Laura Armstrong, the Maryland Department of the Environment's Pollution Prevention Coordinator, at 410-631-4119 or Kelly Mecum, the Chesapeake Bay Program *Businesses for the Bay* Coordinator at 1-800-968-7229, ext. 719. You can also download a worksheet from the Chesapeake Bay Program's website located at: www.chesapeakebay.net/bayprogram.

Maryland's *Businesses for the Bay* are listed on the back page.

FREE POLLUTION PREVENTION INTERNET TRAINING FOR THE FIRST 40 MARYLAND BUSINESSES THAT SIGN UP

Learn how to navigate the web to access valuable pollution prevention information relevant to your business. Training will take place at the Maryland Department of the Environment, 2500 Broening Highway, Baltimore, MD 21224. Contact Laura Armstrong at MDE (410-631-4119)or larmstrong@,mde.state.md.us.

## Compliance Assistance – Hitting the Nail on the Head

On Maryland construction sites, superintendents focus on project schedules, material orders, punch list items, safety, and who has the "*Green Card*." Since 1980, for construction industry personnel, possession of a *Green Card* has meant that an individual has attended the Maryland Department of the Environment's (MDE) "*Responsible Personnel Training for Erosion and Sediment Control*" program. Construction personnel, knowledgeable about erosion and sediment control, help to ensure that quality implementation and maintenance occurs.

Rick Trickett and Fred Jones of MDE's Nonpoint Source Program conduct the four-hour "responsible personnel" training seminars. Personnel in several Maryland counties have also been certified as instructors and provide this training locally. Centered around erosion and sediment control and the negative impacts associated with sedimentation, the training provides participants with valuable information regarding proper construction management and the proper implementation and maintenance of control measures.

The program primarily focuses to earth-moving contractors, land development and engineering companies, and environmental organizations. Typically, the training is provided during the winter months when construction and earth-moving workload is light. However, on-site training is often provided on request for companies that have 25 or more employees.

Additionally, proactive companies have influenced the success of the training program. Although small earth disturbances are not monitored as closely, they are still obligated to abate sediment pollution. Many companies go the extra mile to safeguard their projects from enforcement action by providing the training to their employees. One such company is the Baltimore Gas and Electric (BGE) utility company. BGE has taken an active role in effective erosion and sediment control by providing a staff member, a certified instructor who conducts the training for its employees and subcontractors. BGE also expanded its efforts by co-producing a 28-minute video on erosion and sediment control with MDE. The cooperative effort allowed MDE to produce a much-needed resource at a low cost.

MDE's "*Responsible Personnel Training for Erosion and Sediment Control*" program provides a conduit for effective communication between state and local officials that enforce erosion and sediment control requirements and the construction industry personnel who implement these requirements at active construction sites. More than 15,000 people have attended the training program since its inception. For additional information, please contact Rick or Fred at (410) 631-3543.

# Cultivating Maryland's Future Environmental Leaders

***by Chris Fox***

Environmental education is flourishing in Maryland. There are over 50 high schools, community colleges, and four year college and university programs dedicated to environmental education. New programs, such as those underway at Sparrows Point High School, Charles County Community College, and Towson University, are being developed every day. Student interest in these programs is at an all time high, as evidenced by the Governor's Youth Environmental Summit held in May, which brought together over 900 high school students and teachers from across the state.

Environmental employment within the state is at an all time high as well. Nearly 1,000 organizations - private companies, government agencies, non-profit organizations and educational institutions - provide environmental jobs in Maryland. These 1,000 organizations provide employment for over 80,000 Marylanders. Of these 80,000 jobs, over half reside in the 800 or so private companies that make up Maryland's emerging environmental industry. The rapid growth of the Maryland Environmental Business Alliance is a testament to the interest and potential opportunities of this critical state industry.

At the same time, Maryland is faced with on-going and difficult environmental dilemmas. Continuance of air pollution problems in and around Baltimore, the emergence of pfiesteria, and the looming problem of global warming point towards the importance of skilled professionals to provide Marylanders with clean air to breathe and clean water to drink. Maryland's environmental companies, agencies, organizations and institutions need highly educated and skilled workers, both now and into the 21st century.

To meet this important workforce demand and fully capitalize on the unique opportunities associated with the development of new environmental education programs, the state should consider a "Statewide Environmental Education Development Strategy"or SEEDS. Such an initiative, involving environmental employers and educators from across the state, would work to strengthen the state's environmental curricula taking into account employer's needs, optimizing cooperative education and School-to-Career (STC) experiences for all students, rural and urban, and ensure credit and degree transferability between programs at different grade levels. Other states, such as North Carolina, have developed such a strategy and devoted considerable resources to its' implementation.

Education, along with policy and technology, are the tools society uses to solve pressing environmental problems. While environmental educators and professionals work to maximize use of natural resources such as water, energy, and land, we must remember that our most important natural resource is human skill, ingenuity and spirit and we must work towards optimal use of this critical resource to meet the challenges and opportunities of the 21st century and beyond.

***Chris Fox is the Director of the Environmental Project at Catonsville Community College.***

### Ground Water Flow Model

The Ground Water Flow Model is an excellent tool for educating the public on the basics of ground water flow. It has been an important part of Maryland Department of the Environment's (MDE) outreach efforts since 1991. The model is made by the University of Wisconsin at Steven's Point.

By using water and injecting colored food dyes into the model, basic ground water concepts can be demonstrated. Examples of concepts that can be demonstrated are: ground water flow from areas of recharge to areas of discharge; how ground water can be polluted; relationship between ground water and surface water; the different types of aquifer (water table and confined); effects of pumping a well on water levels; and artesian wells.

To arrange for a demonstration, contact John Grace at 410-631-3713.

***Conformity continued from page 1***

(SIPs). These limits, called mobile source emissions budgets, quantify the "carrying capacity" of a region for a particular pollutant. The emissions budget is the total of all motor vehicle emissions identified in the SIP that the area can produce and still comply with federal air quality standards for that pollutant. The limits are gradually reduced over time as the area nears its federal deadline to comply with the standard. Thus the carrying capacity equals the budget. MDE has established mobile source emissions budgets for carbon monoxide, and for volatile organic compounds and nitrogen oxides, compounds that contribute to ozone formation. Budgets are set for the Washington metropolitan region, the Baltimore metropolitan region, and Cecil County because it is part of the Philadelphia metropolitan region.

**How does this relate to the Governor's Smart Growth Initiative?**

Governor Glendening's Smart Growth initiative closely correlates with the concept of conformity. New transportation projects and sprawl are linked because additional development has the potential to increase emissions through increasing miles traveled.

Adding new lanes on highways accommodate additional cars and increases emissions. Providing highway access to metropolitan areas from more remote areas encourages residential development farther from job sites and other amenities. This increases trip lengths and adds emissions. If emissions increase, transportation plans may not conform to air quality plans. Federal transportation funds would be withheld, and most important, our air quality will be in jeopardy. The potential of new construction to add additional emissions to the transportation system is carefully considered before the new project is added to the transportation plan. In this way, conformity is a means to promote Smart Growth and inhibit sprawl.

Transportation plans have specific programs to manage the demand for new roads. Ridesharing programs are maintained in most of the metropolitan counties. Reinvestment projects in existing communities add amenities that encourage walking and biking. Traffic calming techniques protect pedestrians and bicyclists. These programs reduce trips and vehicle miles traveled. Emissions reductions from these programs help transportation plans remain within the emissions budgets and still allow planned growth.

The conformity process has proven that transportation and environmental agencies can work together toward the twin goals of efficient transportation systems and better air quality.

The Governor's Smart Growth initiative provides support to both these goals by identifying areas of planned growth and infrastructure development.

*In Maryland, thanks to passage by the General Assembly of Governor Glendening's "Smart Growth and Neighborhood Conservation" initiative, we are beginning to reverse the inefficient and often costly pattern of development that has been the standard in this country for the past half century. "Smart Growth" has three straightforward goals:*

- *To save our most valuable remaining natural resources before they are forever lost;*
- *To support existing communities and neighborhoods by targeting state resources to support development in areas where the infrastructure is already in place (or is planned) to support it; … and*
- *To save taxpayers millions of dollars in the unnecessary cost of building the infrastructure required to support sprawl.*

# Crash Course in Working "On the Water"

Last summer's Pfiesteria outbreaks and a growing focus on specific needs for current water quality data to address impaired rivers, lakes, and bays have expanded the Maryland Department of the Environment's (MDE) presence "on the water" throughout both the Chesapeake and its tributaries. This expansion, along with new tasks, requires the need for more training.

One area in which all staff has been trained is how to work in waters in which a suspected Pfiesteria event is occurring. Preliminary research indicates that, during such an event, contact with infected fish can cause human health problems ranging from rashes and respiratory problems to memory loss. Thus, while responding to such an event (collecting fish and water samples and estimating counts of affected fish),staff members must follow special safety procedures. These procedures include wearing protective gloves and clothing and respiratory masks. Given the typical hot weather in which such work is conducted, staff members also are trained in measures to prevent dehydration and to recognize signs of health problems due to heat and over-exertion.

Other training needs have resulted from MDE's contingency plans to use office workers to provide supplemental field support in the event that multiple fish-kill events occur at the same time. First and foremost, these staff members are trained in all aspects of safety, including what to do in the event of an accident. Their training also includes the basics of responding to a fish-kill event: identification of fish species, estimation of the number of fish involved, and collection of information related to a possible cause of the event. Because most fish-kill events are not related to Pfiesteria episodes, the staff members are also trained in making a distinction between causes, and following the correct chain-of-command communications protocols in the event that a Pfiesteria event is suspected.

But the training of new staff does not stop there. In order to conduct investigative surveys, field personnel need practical working skills in chemistry, hydrology, ecology, and related disciplines too numerous to count. They also need to be able to pull a two hundred pound sampling dredge off of the bay's bottom, 60 feet under the water's surface, in order to assess biological communities. After assessing the biological communities, they must be able to determine ecological impacts of activities such as channel maintenance dredging or effluent discharges. The field personnel also need to be able to visit an impaired and legally cited river or stream and later report their findings to MDE administrators.

To do all of this, these folks must be as comfortable "on the water" as the fish, which they regularly monitor, are beneath the water. This implies a need to be comfortable on a boat. In time, newcomers tend to view their boats with less romance and learn to consider them as stable, or not-so-stable, platforms on which to conduct the real tasks of the job. Thus, as people begin to focus more on the science at hand and less on their presence on a boat, they must be able to handle the boats both in the water and, in some cases, hauling them to the water. The most common vessels in the fleet are Boston Whalers, whose hulls and structural strength are widely regarded as reliable and safe. These boats are capable of reaching speeds of 50 miles per hour. That's fast on the water! They can deploy for nearly 12 hours of continuous running time, and are capable of hauling, and deploying thousands of pounds of scientific equipment, water samples, fish, oysters, and staff. They may not be comfortable, but they remain reliable in the extreme. Our people regularly trust these vessels out on the open bay in midwinter when seas can reach heights greater than six feet and the wind chill index routinely falls far below zero. In such weather, training for the event of a man or a woman falling overboard is taken very seriously. In addition to holding their scientific degrees, many of our field operations staff members make an additional effort to study for and retain Coast Guard issued Captain's licenses. All of these staff members have benefited from years of practical training provided by both formal educational programs and informal guidance from their seniors. This ideal combination of dedicated technical staff members, who are part scientist/part stevedore, along with state-of-the-art boats and scientific equipment, will help to render MDE's missions and mandate "On the Water" a continuing success.

# Learn About Stormwater Management at Fairland Park

As land development increases the amount of impervious surfaces such as roads and parking lots in an area, the amount of stormwater runoff from that area increases as well. This increase in runoff decreases the amount of rainfall that seeps into the ground, and increases the flow of water into nearby streams causing local flooding and stream channel erosion. Water quality is affected by the accumulation of trash, oil, and rubber from cars, fertilizers and pesticides applied to lawns, sediment from bare or poorly vegetated ground, and other pollutants entering streams, rivers, and the Chesapeake Bay. Inflow of sediment can cloud the water blocking sunlight from submerged plants. Sediment also settles to the bottom of streams clogging the gravel beds used by fish for laying eggs. Nutrients such as phosphorous and nitrogen from fertilizers enter the water and promote unusually rapid algae growth. As this algae dies, its decomposition reduces or eliminates oxygen needed by fish, shellfish, and other aquatic life for survival.

These are all examples of nonpoint source pollution, one of the major contributors to the degradation of quality in Maryland's waterways. Controlling nonpoint source pollution is the responsibility of Maryland's state and local governments. To help citizens, engineers, inspectors, and business leaders understand nonpoint source pollution, federal, state, and local governments joined together to create an "outdoor classroom." The Stormwater Demonstration Area at Fairland Regional Park began in 1987 as a cooperative effort involving the Environmental Protection Agency, the Maryland Department of the Environment, the Maryland National Capital Parks and Planning Commission, and the Prince George's County Department of Environmental Resources.

Fairland Regional Park is a 471-acre park providing areas for active recreation and open space preservation along the Little Paint Branch stream. The site of the stormwater demonstration area is a 65-acre reclaimed sand and gravel mine which was purchased in 1975. Reclamation of the mine began in the late 1970's and the first phase, the baseball field complex, was completed in 1985. Design for the stormwater demonstration began in 1987, and the first official tours were conducted in 1992. Examples of stormwater management and sediment and erosion control practices in use within Maryland are displayed along a walkway for easy access and viewing. These controls include:

The extended detention wet basin is one of the primary tools for stormwater management. Wet basins are one of the most reliable and attractive practices and offer many environmental benefits including habitat for waterfowl, wildlife, and warm water fish. Extended detention is the temporary storage of storm runoff within the wet basin,

followed by the gradual release of the excess water. The basin at Fairland Park has been designed to detain low intensity storms for approximately 20 hours and provides flood management for various high intensity storms for the 67-acre drainage area. The runoff discharge rate is controlled through an eight-inch pipe and a series of small weirs located within the riser structure.

Shallow marshes aid in the removal of excess nutrients, such as nitrogen and phosphorous, from stormwater runoff. Shallow marshes also increase wildlife habitat in the suburban environment, providing cover and food for an abundance of wildlife. Vegetation planted within the shallow marsh includes bulrush, arrowhead, pickerel weed, and yellow water iris.

Bioretention is a filtering system that uses trees, shrubs and grasses in combination with a sand filter to provide water quality management within urban areas. As plants grow, they drink water from the surrounding soil, removing pollutants as they do so. Low growing plants act as a filter for runoff when their foliage is dense and close to the ground. Also, the roots of trees and plants enhance the seepage of water into the ground, recharging groundwater. If used properly, bioretention systems protect water quality and provide shade and habitat.

Federal, state and local governments are in an ongoing process of implementing, evaluating, and upgrading stormwater management controls. Nonpoint source pollution must be controlled as part of Maryland's strategy to protect and restore the Chesapeake Bay and its tributaries. Tours of the Stormwater Management Demonstration Area at Fairland Park for schools or other groups offer an increased understanding of how this type of pollution is controlled. For more information on the stormwater management demonstration area, please call MDE (410) 631-3543.

# A Primer on Water Quality

Even the most casual observer of water quality has probably noticed a lake that has turned sickly green, or seen the surface covered with a thick green mat. This problem, called eutrophication, is when aquatic plants and algae grow excessively. It is just one of the issues being dealt with in MDE's Total Maximum Daily Load (TMDL) program. Along with eutrophication, the State has been dealing with several other water quality issues within its TMDL program such as nutrients, biochemical oxygen demand (BOD), and dissolved oxygen (DO), sediment, potential hydrogen (pH), and temperature.

One of the principal stimulants of eutrophication is the addition of excessive nutrients, particularly nitrogen and phosphorus, into the water. Nutrients can come from point sources such as municipal and industrial discharges, as well as nonpoint sources. Nonpoint sources are those that come off the land as stormwater runoff or from atmospheric deposition. Agricultural runoff can contain many nutrients from the mineral fertilizers and manure that have been applied to the fields. Urban nonpoint source nutrients can be traced back to runoff from fertilized lawns and golf courses. Eutrophication can cause turbidity problems, which reduces light penetration to the stream bed vegetation. Algae, which generate DO during the day, can deplete DO during the night to dangerously low levels. DO can also be consumed during aerobic decomposition of dead algae and other organic matter. This consumption of oxygen is termed BOD.

Temperature can also have an effect on water quality in the streams. Industrial and municipal discharges, lack of stream shading, and urbanization can cause high water temperatures. Higher temperatures cause increased algae growth and change the saturation value for dissolved oxygen in the water, both which decrease the DO concentration in the water. This affects organisms living in the waterways. Trout, for example, are very sensitive to temperature, and can even be killed when temperatures increase over long periods.

Sediment, like eutrophication, is another source of turbidity. Sediment enters a stream primarily through nonpoint sources. Wherever there are minimal amounts of ground cover, like grass, plants, trees, and shrubs, top soil is washed away with the rain runoff. Large amounts of sediment can come from places like construction sites and agricultural lands. Another source of sediment can be the stream itself. Increased urban development allows less rainwater to soak into the ground, and causes higher runoff volumes. This increased runoff enters the streams, erodes stream banks, and deposits excess sediment into the stream. Sediment can also build up in dam impoundments and decrease their usable span.

Toxic substances (typically heavy metals like copper and cadmium or organic chemicals like pesticides and oils) can enter streams through a variety of ways. Municipal and industrial plants discharge small amounts of toxic substances. Similar to other substances, toxics enter waterbodies through nonpoint source runoff. Pesticides people put on their lawns or the used motor oil that leaks onto the driveway can be washed into our storm drains and eventually be discharged into our waterways. Boats contribute toxics to our waterbodies through chipped paint, oil and gas from motors, and substances found in marine sanitary disposal systems. Several types of problems are associated with toxic substances. In the short term high levels of toxics can kill aquatic plants and animals, and in the long term they can have perilous effects on the growth and reproduction of aquatic animals and other animals that feed on aquatic life.

Aquatic plants and animals are also sensitive to pH. For example, in Western Maryland streams, where drainage from abandoned coal mines can decrease pH making it acidic, virtually no aquatic life can be found. Changes in pH can also occur due to natural causes. Certain vegetation (depending on the stage of its life cycle) can cause a change in pH making it basic or acidic. The water quality standard for pH is greater than 6.5 and less than 8.5 (neutral is 7.0). When pH becomes unbalanced - to high or to low, plants and animals can die leaving the stream barren.

Clearly, there are many contributing factors that impact the quality of our water. The challenge is to control those factors to protect our water resources while maintaining a modern economy and way of life.

**LANDFILL DEMONSTRATION**
Bonnie Berardelli, MDE demonstrates a new landfill model to cub scouts at the Four Rivers Cub Scout Day Camp in Anne Arundel County. The model shows how modern landfill systems differ from the land disposal methods in the past. Today, landfills are designed and constructed to manage the long-term disposal of trash without harming the ground, water or air. The landfill model is designed to demonstrate an active modern landfill cell and old-style dump. To schedule a demonstration, contact Ms. Berardelli at 410-631-3956.

**Governor's 1998 Solid Waste Management Task Force and Sub Committee Meetings**

| | |
|---|---|
| Monday, September 14<br>1:00 p.m. - 4:00 p.m. | Task Force<br>Room 449<br>Maryland Department of Agriculture<br>50 Harry S. Truman Parkway<br>Annapolis Maryland |
| Monday, September 21<br>1:00 p.m. - 4:00 p.m. | Report Drafting Subcommittee<br>Maryland Environmental Service<br>2020 Industrial Drive<br>Annapolis Maryland |

For information call Hilary Miller, Maryland Department of the Environment, Waste Management Administration at 410-631-3336.

The Governor's Solid Waste Management Task Force, whose members represent the public, local and state government, private industry, and the legislature, is examining issues related to siting and long term planning of solid waste management in Maryland.

The Task Force is developing draft recommendations for its report to the Governor due December 1, 1998 that will address the following topics: interstate transportation of solid waste; County and State management of waste facilities; public participation in the management and siting of facilities, regionalization, privatization, and long-term planning for future management in Maryland. Recommendations will be presented for public comment at the following regional meetings throughout the State:

Western Maryland
October 5, 1998 7:00 p.m.
South Hagerstown High
School Auditorium
1101 S. Potomac Street
Hagerstown, MD 21740

Central Maryland
October 7, 1998 7:00 p.m.
Catonsville Community College
Performing Arts Center Theatre – Building Q
800 S. Rolling Road
Catonsville, MD 21228

Eastern Shore
October 13, 1998 7:00 p.m.
Chesapeake College
Kent Humanities Building
Room H-117
Wye Mills, MD 21679

Southern Maryland
October 14, 1998 7:00 p.m.
Calvert Pines Senior Center
Main Auditorium
450 W. Dares Beach Road
Prince Frederick, MD 20678

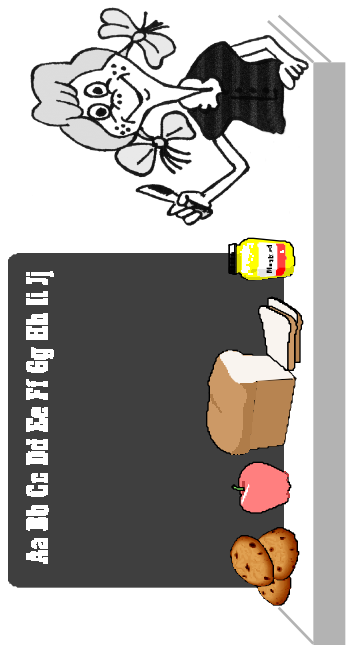
For more information, write to Ms. Hilary Miller, Maryland Department of the Environment, Waste Management Administration, 2500 Broening Highway, Baltimore, MD 21224, or call 410-631-3314

# IT's HERE!

## MDE's New Resource Guide'98

A supplement to *MDEnvironment* that provides you with a list of programs, contacts and web addresses for various non-profit businesses, government agencies and educational institutions that offer environmental education opportunities.
Look for this pull out supplement in this issue of the *MDEnvironment*.

## Building a Pollution Prevention Lunch



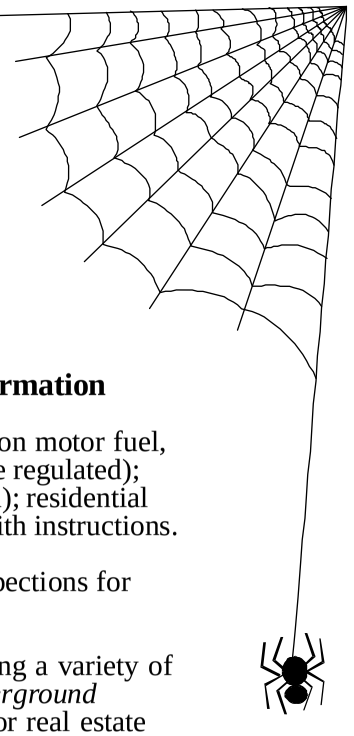

***Wash and re-use plastic containers every day.***
***Clean and recycle any aluminum foil or paper.***

| Instead of using this... | Use this... |
|---|---|
| Brown paper bag | Lunch box or re-usable insulated bag |
| Sandwich bags | Square plastic sandwich container |
| Paper napkins | Cloth napkin |
| Pre-packaged snack | Plastic re-usable container for snacks |
| Bottle soda or juice box | Thermos or re-usable jug |
| Plastic wrap | Wash and re-use plastic ware or use stainless |
| | Recyclable brown paper or aluminum foil |

**Maryland Participants in Businesses for the Bay**
***For more information, see Pollution Prevention Article on page 2***

Administrative Environmental Research, Inc.
Alliance for the Chesapeake Bay – Baltimore Office #
Aristokraft, Inc.
Baltimore Gas and Electric Company*
The Baltimore Sun*
Chemetals, Inc.*
Chesapeake Crematory, Inc.
Condea Vista Company*
Crown Cork & Seal Co., Inc.
CYTEC Engineered Metals
Duron, Inc.
E.A. Engineering, Science, & Technology
Eastalco Aluminum
Flour Daniel GTI
FMC Corporation*
Grace Davison*
Lever Brothers Company
Maryland Petroleum Council*
NASA – Goddard Space Flight Center*
Northrop Grumman Corporation
Page Environmental Consulting
Rosario's Restoration*
U.S. Army – Aberdeen Proving Ground*
Ward Machinery Co.*
Washington Metropolitan Transportation Authority* (9 facilities)
Worthington-Armstrong Venture
Zahnister's Yachting Center

*Mentor #Partner

### Oil Pollution and Tank Management Information

**Underground Storage Tanks (UST)** - Information on motor fuel, used oil and bulk heating oil storage (federal and state regulated); heating oil for direct consumptive use (state regulated); residential and farm UST systems and tank registration forms with instructions.

**Above Ground Tanks** - Information about self-inspections for outside and inside home heating oil tanks.

**Fact Sheets and Publications** - Facts sheets covering a variety of topics and the *Real Estate Professionals and Underground Storage Tank Booklet* which provides information for real estate agents/brokers who sometimes must deal with USTs on properties in Maryland.

**Permits, Licenses and Certifications** - Links to permit applications, general information and facts sheets about permits.

**Recycling Home Page** - Check the links to kid's pages for fun, recycling quizzes and games on the "Recycling Web Sites"page.

**www.mde.state.md.us**

MDE
**Maryland Department of the Environment**
**2500 Broening Highway**
**Baltimore MD 21224**

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