

# ENVIRONMENTAL SYNOPSIS

## The Chairman's Corner

Rep. Scott E. Hutchinson, Chairman



The Joint Legislative Air and Water Pollution Control and Conservation Committee (committee) recently released its report "Oil and Gas Leasing Activities on Commonwealth-Owned Lands". The report was issued pursuant to House Resolution 394 of 2003.

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The resolution was adopted in response to a policy proposed by the Pennsylvania Department of Conservation and Natural Resources (DCNR) in its draft final State Forest Resource Management Plan (SFRMP), unveiled in 2003, that would have terminated all future leasing of shallow natural gas reserves beneath Commonwealth-owned lands.

The report contains four recommendations regarding DCNR's oil and gas leasing policy:

-- DCNR should retain the proposed ban on new oil and gas well sites and roads in bioserve areas, old growth areas and wild and natural areas, allow limited use along steep slopes and high recreation impact areas (including buffer zones appropriate to such areas), but continue to grant waivers in buffer areas where greater environmental benefits occur;

-- DCNR should replace the proposed blanket ban policy with one that would accommodate natural gas exploration and production in all geological horizons beneath State Forest lands under controlled conditions established in the leases;

-- DCNR should adopt a lease structure that provides economic viability for gas production while ensuring protection for the state's forest reserves. Leases should reflect the Pennsylvania Department of Environmental Protection's rules and regulations as closely as possible and ensure confidentiality of proprietary information contained in the leases;

-- DCNR should adopt a modified bonus and fee structure reflecting nationwide industry norms, in order to facilitate broad-based participation in the lease bidding process.

(continued on page 8)

# NOTES FROM THE DIRECTOR

CRAIG D. BROOKS, EXECUTIVE DIRECTOR

The United States Army has recently found that it can benefit from a little fluff. An emerging technology that can turn common household garbage into a nutrient-rich soil amendment called “fluff” - or a composite plastic-like lumber - is the brain child of a Tennessee-based nursery equipment company.

Thanks to the Army Engineer Research and Development Center’s Construction Engineering Research Laboratory, and the National Defense Center for Environmental Excellence Program, the Army has been creating “fluff” and lumber material from its municipal solid waste (MSW).

MSW represents a costly and significant portion of a military installation’s waste stream. The Army generates about 3 million tons of waste from military bases at an estimated disposal cost that far exceeds \$140 million. Because of this, the Army became interested in helping bases to divert large amounts of MSW from landfills.

The conversion process from MSW to usable product has three phases and begins at the raw waste pile where materials are separated, shredded and then pulverized to reduce the size of the materials. The pulverized materials are then sent through a hydrolyzer which “cooks” the material under high pressure and high temperature steam to break down and sanitize the waste materials.

The material is then pressed to form a cellulose pulp mix of organics and fines, such as bits of metal, aggregate and glass. The dried, coarse pulp mix is collected and extruded into products similar to composite plastic lumber, landscaping timbers and tongue-and-groove boards.

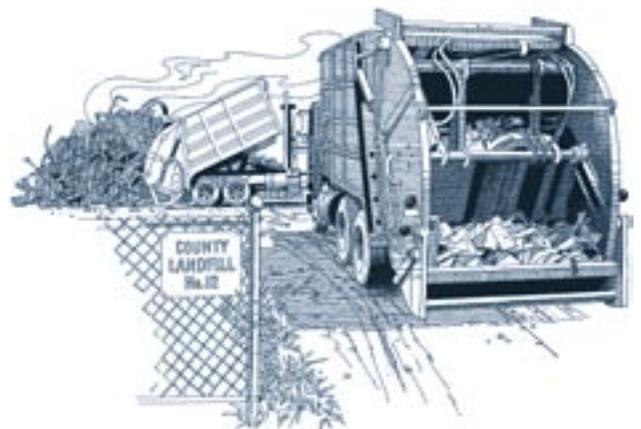
Alternatively, a two-step process is used to create the “fluff” by removing the fines and converting the material into a cottony pulp material that has been useful as a soil amendment because of its organic base and relatively high nitrogen content.

To date, the Army has tested and demonstrated the system at Ft. Campbell, Kentucky and Ft. Benning, Georgia. The demonstrations proved the composite planks can be used as an alternative, low-grade product for agricultural, industrial, civil engineering and residential industries.

In addition, a recent study by Auburn University suggests that the fluff can supplement traditional horticulture materials such as pine bark and peat moss.

While the Army is conducting additional testing on the material and end-products for benignancy and future uses of the material, the technology was awarded the R & D 100 Award last year as one of the 100 most technologically significant products introduced into the marketplace over the past year. Not only has it been a benefit to the military, it has the potential to offer immediate MSW costs and disposal solutions to cities across the country.

**The “fluff” technology captured an R & D 100 Award in 2005 as it made its way into the marketplace**



# RESEARCH BRIEFS

Each month, the committee's staff researches and prepares a number of "briefs" on several topics relevant to the Joint Conservation Committee's mission. Very often, these briefs include references to reports and further research on the topics so that readers may pursue issues on their own.

## GAO Report Criticizes Chesapeake Bay Program

– Tony M. Guerrieri, Research Analyst

According to a report by the U.S. General Accountability Office (GAO), the Chesapeake Bay Program has aggressive goals for cleaning up the bay but does not have comprehensive, coordinated implementation strategies to attain those goals. The GAO report, "*Chesapeake Bay Program: Improved Strategies Are Needed to Better Assess, Report, and Manage Restoration Progress*", also criticizes the program for using a process that has led to negative trends being downplayed and environmental achievements being overstated.

The Chesapeake Bay Program was created in 1983 and is a partnership among the U.S. Environmental Protection Agency (EPA), Maryland, Virginia, Pennsylvania and the District of Columbia, with efforts spearheaded largely by the EPA's Chesapeake Bay Program Office. It now includes Delaware, New York and West Virginia, as well as 11 federal agencies and a commission representing the watershed state's legislatures. In 2000, these parties agreed to a detailed plan – known as Chesapeake 2000 – which sets forth five broad restoration goals that the signatories agreed to accomplish by 2010.

The Bay Program has over 100 measures to assess progress toward meeting certain restoration commitments and providing information to guide management decisions. However, according to the GAO, the program has not yet developed an integrated approach that would allow it to translate these individual measures into an assessment of overall progress toward achieving the broad restoration goals outlined in Chesapeake 2000. For example, while the Bay Program has appropriate measures to track crab, oyster, and rockfish populations, it does not have an approach for integrating the results of these measures to assess progress toward the agreement's goal of protecting and restoring the bay's aquatic life.

The "State of the Chesapeake Bay" report, which is published every two to four years to provide the public with a snapshot of the bay's health, is the Bay Program's primary mechanism for reporting the bay's status. The GAO report suggests that these reports do

not effectively communicate the bay's current conditions because they focus on the status of individual species or pollutants instead of providing an integrated assessment of ecosystem health.

In addition, the credibility of these reports has been questioned because the program has commingled three types of information: monitoring data of current conditions, results of program actions, and the results from computer model predictions of future Chesapeake conditions, without clearly distinguishing among them. As a result, the public cannot easily determine whether the health of the bay is improving or not. Moreover, the lack of independence in the Bay Program's reporting process has led to negative trends being downplayed and a rosier picture of the bay's health being reported than may have been warranted. The report notes that the program has recognized that improvements are needed and is developing new reporting formats.

### The report states that a comprehensive, coordinated and achievable implementation strategy is needed

From 1995 through 2004, the restoration effort received about \$3.7 billion in direct funding from 11 key federal agencies, the states of Maryland, Pennsylvania, and Virginia, and the District of Columbia. The states typically provide 75 percent of the direct funding. These funds were used for activities that supported water quality protection and restoration, living resource protection and restoration, and stewardship and community engagement. An additional \$1.9 billion in indirect funding was also provided for activities that affect the restoration effort.

The Bay Program does not have a comprehensive, coordinated implementation strategy to better enable it to achieve the goals outlined in Chesapeake 2000. Although the program has adopted 10 key commitments to focus partners' efforts and develop plans to achieve them, some of the plans are inconsistent with each other or are perceived as unachievable by program partners.

The report, however, also noted that limited assur-

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ances about the availability of resources beyond the short term further complicate the Bay Program's ability to effectively coordinate restoration efforts and strategically manage its resources. The GAO cites a 2003 Chesapeake Bay Commission report that estimated the restoration effort faces a \$13 billion funding gap to achieve the goals outlined in Chesapeake 2000.

The GAO recommends that the Chesapeake Bay Program improve and revamp its assessment and reporting approaches and develop a comprehensive, coordinated implementation strategy that is achievable, given the program's limited funding. It also suggests that the office's reports undergo independent review to verify their accuracy and clarity.

According to the GAO, the signatories to the Chesapeake 2000 pact generally agreed with the report's recommendations, and the EPA's Chesapeake Bay Program Office already is taking steps to address several of the concerns presented in the report.

Copies of the 93-page report can be found on the GAO's website <http://www.gao.gov/new.items/d0696.pdf>.

## Report Encourages Federal Role in E-Waste Recycling

– Craig D. Brooks, Executive Director

A new report by the investigative arm of Congress is calling for an increased federal role in the recycling of electronic waste. The General Accountability Office (GAO) report, *“Electronic Waste: Strengthening the Role of the Federal Government in Encouraging Recycling and Reuse”*, calls for the U. S. Environmental Protection Agency (EPA) to take the lead role in crafting legislation for a national system to finance e-waste recycling and for federal agencies to participate in the e-waste recycling initiatives.

According to GAO, more than 100 million computers, monitors and televisions become obsolete every year, and the numbers continue to grow. If not properly managed, however, the report suggests that these used electronics have the potential to harm the environment and human health. Although the research is unclear as to the extent to which toxic substances may leach from used electronics into landfills, EPA nonetheless identifies lead, mercury and cadmium (which e-waste contains) as priority chemicals targeted for reductions in the waste stream. GAO suggests that these chemicals, typically found in computers and monitors, do not break down when released into the environment and can be dangerous, even in small quantities. The Resource Conservation and Recovery Act allows households

and those that generate small quantities of hazardous waste, including used electronics, to dispose of them in landfills. The report argues, however, the fact that electronics are often shipped to countries that do not have modern landfills is reason enough to increase e-waste recycling. In addition, used computers contain precious metals such as gold, silver and platinum that can often be extracted with financial benefits and less impact on the environment.

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### The main issue, the report states, is the financing of electronic recycling

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At issue, according to the report, is how to finance electronic recycling. That is because there is currently no federal financing system to overcome the often high costs of reuse and recycling of e-waste. GAO suggests that e-waste has been hampered by the lack of a national financing system because consumers have the more convenient option of simply throwing these products in a landfill. Without a fundamental change in the incentive structure affecting their decisions, consumers will continue to choose disposal as a preferable option for dealing with used electronics in the overwhelming number of states that allow such disposal. The report adds that following the current patchwork of state e-waste recycling laws often places a substantial burden on manufacturers, retailers and recyclers. Electronic recyclers are often forced to charge fees to recover the costs of recycling electronics.

According to the report, EPA has spent about \$2 million on several voluntary programs to help overcome factors that discourage e-waste recycling and reuse. The Federal Electronic Challenge leverages government purchasing power to promote environmentally friendly purchases, operation, and maintenance and end-of-life management of used electronics. Several pieces of federal legislation have also been introduced that aim to create a national e-waste recycling system. The House bill H.R. 425 would impose upfront fees on the sale of computers and other electronic devices to fund a recycling program. The Senate bill S. 510 would provide businesses and consumers with tax credits for recycling electronic devices.

The GAO report is available at <http://www.gao.gov/new.items/d0647.pdf>.

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## Report Outlines Potential Impacts of Climate Change on New Mexico

– Tony M. Guerrieri, Research Analyst

A report by a New Mexico interagency working group warns of the potentially significant environmental and economic changes the state may experience as a result of climate change and greenhouse gas emissions. Convened by the New Mexico Environment Department (NMED), the interagency working group prepared the report, *“Potential Effects of Climate Change on New Mexico”*, to examine how greenhouse gases will impact New Mexico in the next half-century. Staff from seven state agencies reviewed the latest peer reviewed scientific studies on how climate change is affecting the world, the West and New Mexico in particular.

The report assesses potential impacts on the state’s water resources and snow pack levels, outdoor recreation and tourism, infrastructure, agriculture, forests and rangelands, environmental quality and human health.

Global average temperatures have increased by one degree Fahrenheit over the last century. Climate models predict a further increase of six to 12 degrees Fahrenheit by the end of the 21st century. The arid American West, including New Mexico, appears to be particularly susceptible to the effects of climate change.

In New Mexico, no other effect of climate change is as significant as how it endangers the state’s already scarce snowpacks and water supply. According to the report, it is very likely that more winter precipitation will fall as rain instead of snow, periods of snowpack accumulation will be shorter, and mountain snowpacks will be smaller. Warming earlier in the year very likely will melt snowpacks earlier in the season. Peak water flows would occur much sooner than the summertime peak water needs of cities, farmers and ranchers, and others. Water supply systems which have no storage or limited storage may suffer seasonal shortages in summer.

Reduced water supply and decreased crop yields resulting from climate change have the potential to seriously affect the agricultural economy in New Mexico. More than one-half of the farmland acres in New Mexico are irrigated. The major crops in the state are sorghum, wheat and hay. The report states that climate change may cause wheat yields to drop between 10 percent and 30 percent and sorghum yields by seven percent to nine percent as temperatures rise beyond the

tolerance levels of the crop.

New Mexico’s production agriculture is a \$1.6 billion annual industry, two-thirds of which comes from livestock, mainly cattle. The vast majority of ranching operations in New Mexico depend completely on the range to support their cattle. Ranching is vulnerable to climate change in part because it is dependent on a good forage base, which requires proper timing and amount of rainfall. Purchasing alternative feeds is generally too expensive, according to the report.

Infrastructure systems sensitive to climate include those for flood control and drainage, climate control in buildings (e.g., air conditioning), electrical power distribution, sewage, water supply and transportation. The report suggests a potential increase in flash flood intensity may impact flood-sensitive structures such as flood control and drainage systems, including roadway and railroad bridges and culverts. Water use restrictions may adversely affect the functioning of sewage systems.

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### **The effect of climate change on an already tenuous water supply is of paramount importance in New Mexico**

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Reduced opportunities for outdoor recreation will not only impact the quality of life for New Mexicans, but also will likely harm the state’s economy because outdoor activities are a major attraction to tourists, according to the report. Warmer winter temperatures are likely to severely reduce opportunities for snow sports, and ski resorts will suffer economically. Lower water levels in lakes and rivers will adversely impact water sports such as boating, angling, and whitewater rafting. Periods of high fire hazard may further restrict access to wildlands for picnicking, camping, hiking, hunting, birdwatching and other outdoor activities.

Climate change is also likely to increase air pollution in New Mexico, the report warns. Warmer temperatures and more air stagnation episodes are projected to increase ozone (smog) levels. Wildfires and dust storms associated with drought are likely to increase particulate air pollution. Episodes of extreme heat are expected to become more severe and much more frequent, resulting in increases in heat-related illness and mortality.

The report acknowledges the many uncertainties in predicting climate but offers itself as a useful guide for a range of precautionary measures, the foremost of which is an effort to reduce emissions of greenhouse gases.

The 47-page New Mexico Climate Change Advisory Group report is available at [http://www.nmenv.state.nm.us/aqb/cc/Potential\\_Effects\\_Climate\\_Change\\_NM.pdf](http://www.nmenv.state.nm.us/aqb/cc/Potential_Effects_Climate_Change_NM.pdf).

## **Pace of Hazardous Sites Cleanup Holds Steady**

**– Craig D. Brooks, Executive Director**

**T**he Superfund Program continues to make progress in the cleanup of contaminated sites across the United States. A report released by the U.S. Environmental Protection Agency (EPA) shows that cleanup work was completed at 40 Superfund sites in 2005, a number that has remained steady over the past three years. In its annual summary for 2005, EPA confirmed cleanup work has been completed at a total of 966 sites since the Superfund program began in the early 1980's and represents 62 percent of the top priority sites ranked on the National Priorities List (NPL).

EPA conducted 665 ongoing cleanup projects at 422 sites and funded new work at 17 projects across the country. Superfund also continued to prepare for future cleanup efforts by listing 18 new sites and proposing 12 sites to be added to the NPL.

The Comprehensive Environmental Response, Compensation and Liability Act, which was signed December 11, 1980, requires response actions that permanently and significantly reduce the dangers associated with serious releases or threats of releases of hazardous substances. These actions can only be completed at sites listed on the NPL, which currently contains 1,245 sites. Although the number of sites cleaned up in the last three years remains steady, it does actually show a decline from years prior to 2003. In the fiscal year 2000, EPA reported completing cleanup on 87 sites, on 47 sites in fiscal year 2001 and on 42 sites in fiscal year 2002.

According to EPA, as the superfund program matures, the size, complexity and cost of sites under construction also increase. In 2005, 50 percent of the budget for long-term, ongoing cleanup work was committed to just 11 sites. The cost of the 17 new projects listed in the report totaled nearly \$70 million in appropriated funds, state cost-share contributions and resources from settlements with potentially responsible parties.

Overall, the Superfund program obligated \$524 million in fiscal year 2005 for construction and post-construction activities and for conducting and overseeing emergency response actions. Of this amount, \$440

million, including \$235 million from appropriations, was spent on construction and post-construction projects from appropriated funds, state cost-share contributions and potentially responsible parties. Approximately \$120 million was obligated for conducting more than 400 emergency response and removal actions to address immediate and substantial threats to communities.

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### **According to the report, EPA's emphasis on funding ongoing work has made less funding available for new construction projects**

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Due to EPA's priority to fund ongoing work, the report shows that less funding was available for new construction projects. EPA did not have the resources to fund nine new construction projects that were ready for construction, but efforts are continuing by adding new sites and priorities to the NPL. While EPA listed 18 new sites on the NPL, they also removed 18 sites and partially deleted five other sites. During 2005, EPA secured more than \$1.1 billion in private party commitments which will be added to the special funding accounts. Of this amount, potentially responsible parties agreed to conduct more than \$857 million in future response work and to reimburse EPA for \$248 million in past expenditures. These financial agreements with potentially responsible parties reflect an increase in dollar amounts from previous years. In 2004, for example, EPA secured \$680 million in cleanup commitments and costs from parties responsible for toxic waste sites.

More information on the 2005 superfund report is available at [http://www.epa.gov/superfund/news/pr\\_112205.htm](http://www.epa.gov/superfund/news/pr_112205.htm). and <http://www.epa.gov/superfund/action/process/numbers05.htm>.

### **News to Use in the Environmental Synopsis... share it with a friend**

The *Environmental Synopsis* is issued monthly.

The newsletter examines timely issues concerning environmental protection and natural resources.

If someone you know would like to receive a copy of the *Synopsis* each month, please contact the committee office at 717-787-7570.



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# ON THE HORIZON . . .

A LOOK AT UPCOMING EVENTS

✓ **Monday, April 3, 12 noon, Room 205, Matthew J. Ryan Building – Environmental Issues Forum.** Karen McCalpin, President of External Affairs for the state office of PA CleanWays, will discuss PA CleanWays' efforts to prevent and clean up illegal dumping across the state of Pennsylvania.

✓ **Monday, June 12, 12 noon, (location to be announced) – Environmental Issues Forum.** Jim MacKenzie, President and Operations Manager of Octoraro Native Plant Nursery, will present “Going Native – Opportunities for Using Native Plants in Pennsylvania” describing his work with Pennsylvania native plants, the unique native plant habitat his firm has created and the relationship of his work to statewide water resource and conservation planning.

**Environmental Issues Forums are open to the public. Please call the committee office at (717) 787-7570 if you would like to attend.**

# COMMITTEE CHRONICLES . . .

REVIEW OF SOME MEMORABLE COMMITTEE EVENTS

Audubon Pennsylvania was a recent presenter at one of the committee's Environmental Issues Forums.

In the photo at right, the organization's Paul Zeph, project director of Audubon's Kittatinny Ridge Project, describes the project as well as the organization's "Important Bird Area" program, of which the Kittatinny Ridge is an integral part.



Below left, Audubon PA Executive Director Tim Schaeffer talks about Audubon's presence in Pennsylvania, and displays its blaze orange hat for hunters.

In photo at right, committee Chairman Rep. Scott Hutchinson (left) chats with Zeph (center) and Schaeffer (right) following the forum.



It is the committee's belief that the recommendations will allow for DCNR to continue its practice of multiple resource management on the 2.1 million acres of State Forest land in Pennsylvania. The recommendations will allow for mineral operations on DCNR-owned land that are in accordance with sound conservation practices and which are fully compatible with other uses and values including timber, wildlife, forests, recreation and water resource management.

Further, the recommendations also allow for an ecologically safe opportunity to capitalize on the clean energy provided by natural gas, and maintain the revenue provided by the Oil and Gas Fund which has helped to finance the creation of eight new State Parks, supplement and expand 31 others, and purchase forest land. According to the report, that revenue amounts to \$3 million - \$4 million annually.

The report also notes that DCNR and a Gas Industry Work Group (GIWG) have been meeting for the past two years to work on possible changes to DCNR's standard oil and gas lease agreement to reduce operational and access problems on State Forest lands, and have agreed upon several recommended changes, which are supported by the committee.

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**Check out the complete text of the "Oil and Gas Leasing Activities on Commonwealth-Owned Lands" report on the committee website at <http://jcc.legis.state.pa.us>**

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The proposals include a new dispute resolution section, continuation of the existing royalty rate of 12.5 percent and resetting of the rental rate to \$5 per acre per year with periodic reviews for appropriateness, establishment of certain drilling conditions and conditions for granting of waivers, and new language to ensure confidentiality of operators' data while allowing free access as necessary to data by DCNR's technical staff. The proposed changes do not recommend a ceiling on the number of wells that would be allowed on State Forest land at any one time.

Pending legal reviews, the proposed changes to the standard agreement may be in place later this year, the report concluded.



The committee report also contains a history of oil and gas leasing in the Commonwealth, benefits to the Commonwealth from leasing and information on the SFRMP and its development.

Copies of the report are available on the committee website at <http://jcc.legis.state.pa.us> or by calling the committee office at 717-787-7570.

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