



The Chairman's Corner

Rep. Scott E. Hutchinson, Chairman

November 15 was America Recycles Day. The day was observed in different ways and many places across the state. In my home county of Venango, the Department of Environmental Protection (DEP) and the Cranberry Staples store collaborated on a display of recycled products and made pledge cards available for customers to pledge to recycle.

Similar events were held in other Staples and Home Depot stores around the state, while other communities featured forums on recycling, set up information booths at sporting events, and held recycling contests.

The observance of America Recycles Day and some recent news stories and reports have prompted me to focus on recycling and the diverse recycling outlets and methods that exist in Pennsylvania.

According to DEP's 1999-2000 Annual Report, there is continuing evidence that "Recycling Works in Pennsylvania." More than 10 million residents (at least 85 percent of the state's population) have access to recycling. The rate of recycling rose to 32.6 percent in 1999-2000, well on the way to 2003's goal of 35 percent, which has actually been exceeded by 12 counties already. To encourage further recycling, DEP awarded \$38 million in 1,035 grants to municipalities and counties for recycling and waste management.

The economic impact of recycling is demonstrated in the fact that 81,322 people are employed by 3,247 recycling and reuse businesses in the Commonwealth. The annual payroll for these businesses totals nearly \$2.9 billion.

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Craig D. Brooks, Director

The saying “everything old is new again” also applies to the world of tire recycling. Pyrolysis - a decade old technology - is once again offering possible relief for nearly 800 million tires stockpiled in landfills around the country and the 270 million tires generated each year in the United States. This technique, developed by a retired professor and now marketed under the name Tires2Oil, converts scrap tires into crude oil and carbon black content in its original form.

Pyrolysis is the process of heating material in a closed reactor using specific temperatures to extract oil and gases to produce a carbon rich residue. The Tires2Oil process, based on Super Critical Fluid (SCF) technology, depolymerizes scrap rubber in a high-pressure reactor, recovering oil and carbon black. The remaining oil and carbon black is purified and the sulfur is removed. Once recovered, tire oil can be used to produce materials such as new tires and fuel. Carbon black can be used to produce new tires, rubber and activated carbon. The process apparently leaves no waste because everything that is recovered is reused.

Tires are made from rubber, carbon black, sulfur, steel wires and nylon threads. When melted, tires separate into oil, gas, carbon black and steel. The nylon threads dissolve into the oil, and sulfur remains with the oil, gas and carbon black. The difficulty with pyrolysis is that recovered materials must be used immediately or they turn to waste. Also, tire oil is unstable and has a high-sulfur content, which can lead to the production of low quality materials. Because the Tires2Oil system apparently removes the sulfur, it is expected to produce oil with potentially less than 15

parts per million-sulfur content in order to comply with environmental standards.

In the first year of operation, Tires2Oil expects to produce 476,000 tons of carbon black, or 333,400 tons of activated carbon, and 5.5 million barrels of oil from the millions of tires generated nationally. A typical Tires2Oil plant could process about 3 million tires per year.

Costs to build such a facility vary between \$8.5 and \$12 million, depending on the eventual use of the oil and carbon black. If tire oil is used to generate power, one-fifth of the power would be used to operate the pyrolysis facilities. Under these conditions, Tires2Oil estimates cost recovery for plant expenditures to take about 2 years. However, the economic benefits cannot be measured until the recovered materials are used commercially. The process won't be ready for commercialization until 2002.

Many have tried to make tire pyrolysis a reality and it may be too early to determine the future of this project. The developers of Tires2Oil are optimistic about the potential of the system. Stay tuned.





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.

A Close Look at Philadelphia's Shifting Population and its Regional Impact

- Tony M. Guerrieri, Research Analyst

The Philadelphia Metropolitan five-county region (Bucks, Chester, Delaware, Montgomery, and Philadelphia counties) is growing at an astonishing rate, according to a report by the Metropolitan Philadelphia Policy Center (MPPC). Between 1982 and 1997, developed land grew by 33 percent, while the population grew by only three percent. In short, the region's land growth outpaced population growth by more than ten-to-one.

The MPPC report, *"Flight or Fight: Metropolitan Philadelphia and its Future"*, provides a snapshot of the region's growth over the last 30 years and how that pattern of growth has impacted the people living and working in the region. The report contends that the Philadelphia region is experiencing the worst type of sprawl: continued development without any appreciable population growth.

According to the report, between 1970 and 2000 the region has experienced minimal population growth - six percent. The region trails the largest 20 urban regions in the country in growth, ranking eighteenth. During that time other metropolitan areas have experienced extraordinary population growth of as much as 235 percent.

The Philadelphia region's population growth can also be characterized as a population shift – from the city and inner-ring suburbs to outlying counties. The city of Philadelphia has consistently lost residents since 1950, more than 400,000 residents between 1950-1990. In the 1990's alone it lost another 68,000 people, or over four percent of the population, and most of these people headed for other parts of the region. Between 1991 and 1998, for example, more than 70,000 people migrated from Philadelphia to Montgomery County.

The population shift has also had a profound impact on many of the region's older communities. According to the report, Chester Township (Delaware County) lost 15 percent of its population between 1990 and 2000, and Tullytown (Bucks County) 13 percent. In contrast, some municipalities in Chester, Bucks, and Montgomery Counties – like Thornbury, Perkiomen, Warwick, and Limerick - suffered the side effects of over 100 percent growth during the 1990's.

One of the immediate impacts, according to the report, is the loss of farmland. Since 1969, Southeastern Pennsylvania has lost 34 percent of its agricultural land. During that same period, the state as a whole lost 19 percent. Chester, Montgomery, and Bucks Counties have respectively lost 26 percent, 48 percent, and 36 percent of their farmland to development in the past 30 years.

The Philadelphia region is experiencing the worst type of sprawl: continued development without any appreciable population growth.

A growing discussion in the land use debate is the notion of regionalism. This concept states that there are strong relationships between the social and economic needs of cities and suburbs within metropolitan regions, and that many of these issues are best addressed on a state level. The report contains five key principles for policymakers to consider. They include the need to:

- Concentrate development and infrastructure around older areas and suburban centers.
- Conserve remaining agricultural and rural lands.
- Build upon history, culture, and natural resources.
- Reduce and equalize local tax burdens and conserve fiscal resources.
- Connect regional growth through transportation, housing, and work force development policies.

The report also recommends three actions that could have an immediate and significant impact as places to start in crafting a regional agenda for change:

- Target state spending on infrastructure in and around older developed communities and existing suburban growth centers.
- Cut the Philadelphia wage tax and restructure local property taxes.
- Make vacant urban land more marketable through regulatory reform and financial incentives.

The MPPC is a collaborative effort of the Pennsylvania Economy League, The Reinvestment Fund, and 10,000 Friends of Pennsylvania. The report is available for viewing or downloading on the MPPC's website at www.metropolicy.org.

Staging an American Chestnut Comeback

- Jason H. Gross, Research Analyst

The American chestnut has been all but extinct in the American forest for close to 80 years. And yet, the American chestnut, whose scientific name is *Castanea sativa*, once dominated Pennsylvania's forests.

At the turn of the 20th century more than a quarter of the nation's forests were comprised of American chestnut trees. Pennsylvania had among the highest concentrations of American chestnut, estimated at up to 50 percent of all the trees in the commonwealth. But, because of a virulent fungus, nearly all American chestnut trees were destroyed by the 1950's. Today the American Chestnut Foundation is working hard through volunteer efforts to return the chestnut to the forests of Pennsylvania.

Specific qualities of the chestnut made it singularly valuable to American culture, industry, loggers and consumers. The trees averaged up to five feet in diameter and could reach up to 100 feet in height. The trees combined their vast mass with a trunk that grew extremely straight with a grain that was free of knots. The trees also grew relatively quickly, almost 50 percent faster than oak. Also the trees were able to sprout and regenerate themselves from felled tree stumps.

Loggers deeply valued the American chestnut because of its size and height. They could gain a large yield from a felling. The timber was also decay-resistant, which added to its usefulness in constructing houses and objects that received hard use in extreme climates. The

wood had a long wear life and characteristics that made it easy to work. Many houses, barns, shingles, furniture, and paneling were made of chestnut.

The chestnut also had important industrial uses. The wood, when burned into charcoal, was used to fuel iron furnaces. The charcoal produced an even and clean burn that created the appropriate heat needed for the furnaces. The bark was rich in tannin, a product put to extensive use in Pennsylvania's many leather tanneries. When the American chestnut was destroyed, the country lost a valuable, and not easily replaceable, industrial resource.

The mighty American chestnut was decimated by a small fungal pathogen called *Cryphonectria (endothia) parasitica*, which arrived in this country on imported Asian chestnut trees. Asian chestnut trees were able to carry the fungus because they were largely immune to its effects.

The foundation has designed an extensive breeding project...to return the American chestnut to the forests of this country.

The fungus causes a condition commonly known as blight. The blight attacks the trees by entering the trunk through a crack or opening in the bark. The infected tree shows signs of blight in orange or reddish-brown patches that develop into soft sunken swollen areas. The blight then spreads steadily through the cambium layer of the tree, cutting off water and nutrients, after which the tree quickly succumbs to rotting and sickness. The fungus is extremely virulent. Passing from tree to tree quickly it can move up to 50 miles in one year. Within only a few decades almost all American chestnut trees were completely obliterated.

The American Chestnut Foundation was established with the hope of restoring the American chestnut to its former position of vitality and importance. The foundation has designed an extensive breeding project aimed at retaining the qualities of the American chestnut of good timber, food source, appearance, and size while adopting the blight resistance of the Asian chestnut. The process is slow and tedious but the volunteers are making progress. Eventually it is hoped they will be responsible for returning the American chestnut to the forests of this country.

More information regarding the American chestnut is available from the American Chestnut Foundation via the web at: <http://chestnut.acf.org/>. The Pennsylvania chapter of the American Chestnut Foundation can be reached at 800 E. King St., York PA 17403-1772, (717) 852-0035.

\$55 Billion in Government Cuts Recommended by Green Scissors 2001

- Tony M. Guerrieri, Research Analyst

A \$532 million canal project in Louisiana and a \$242 million investment in fossil fuel projects are among the first-time targets added this year to the annual Green Scissors report. The "Green Scissors 2001" report, released by the Green Scissors Campaign, outlines 74 programs that, if cut, would save taxpayers more than \$55 billion and protect the environment.

The "Green Scissors 2001" report highlights programs for reform in the following six sectors: **agriculture, energy, international and military programs, public lands, transportation, and water.** A general overview of each sector is provided in the report.

The top single source of savings, \$10 billion - according to the report, could be achieved by shutting down the National Ignition Facility (NIF) nuclear weapons project. The NIF project is designed to help study the thermonuclear properties of nuclear weapons without actually testing them. The report states the project's value is dubious at best, has little chance of success, and offers no commercial use.

The NIF is one of ten "Choice Cut" programs in the report. Others include:

- **1872 Mining Law Reform** - Requiring hard-rock mining companies to pay an eight percent royalty and to post adequate bonds for mining reclamation would raise \$481 million over five years.

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 you or 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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- **"Clean Coal" Technology Program** - Expediting the termination of the CCTP by stopping projects for which construction has not started or will not start for several years would save at least \$325 million over five years.

- **Partnership for a New Generation of Vehicles** - Ending a research subsidy to the "Big 3" automakers that is encouraging the production of polluting diesel powered vehicles would save taxpayers \$1.1 billion over five years.

- **Petroleum Research and Development** - Eliminating the Petroleum Research and Development Program, which benefits fossil fuel companies, would save at least \$280 million over five years.

- **Timber Sales** - Requiring the U.S. Forest Service to stop subsidizing timber industry clearcuts in national forests would save \$1.65 billion over five years.

- **Upper Mississippi Lock Expansion** - Denying funding for expansion of the locks on the Mississippi and Illinois Rivers would save taxpayers more than \$1.2 billion.

The report also adds nine new programs and subsidies to the target list this year. They include:

- **Apalachicola-Chattahoochee-Flint River Navigation** - Decommission an underused waterway running through Alabama, Florida, and Georgia, saving taxpayers \$100 million over five years.

- **Calhoun/Claredon Causeway** - Cancel the \$75 million causeway being built in South Carolina.

- **Delaware River Deepening** - Deny funding for a \$224 million dredging project that benefits oil refineries in Philadelphia.

- **Export-Import Bank of the US: Fossil Fuel and Mining Investments** - Cut \$242 million in subsidies used to make and guarantee loans for fossil fuel and mining investments.

- **Multilateral Investment Guarantee Agency** - Eliminate this World Bank agency which provides risk insurance to private corporations and banks, saving \$16 million.

- **New Orleans Industrial Canal** - Deny funding for this Army Corps of Engineers deepening project, saving \$532 million.

In its seventh year, the Green Scissors Campaign, led by Friends of the Earth, Taxpayers for Common Sense, and the U.S. Public Interest Research Group, claims to have helped eliminate more than \$24 billion in wasteful (and in some cases harmful) spending programs.

A copy of the report is available from the Friends of the Earth, 1025 Vermont Avenue, N.W., Suite 300, Washington, D.C. 20005; telephone: (202)-783-7400. The report can also be found on the World Wide Web at www.greenscissors.org.

2001 State of the Bay Report Released

- Jason H. Gross, Research Analyst



The Chesapeake Bay Foundation recently released its "State of the Bay 2001" report. This latest in a series of annual reports outlines the current environmental status of the Chesapeake Bay watershed. According to the report, the bay remains a system dangerously out of balance. Water pollution remains a primary source of excess nitrogen and phosphorous in the bay watershed, leading to a severe impairment to the overall health of the watershed system. According to the foundation, a major rehabilitation campaign must be implemented if the Chesapeake Bay is to be returned to its once greater glory.

The condition of the bay is rated on a scaled system. The system bases the best-case scenario of bay health as that described by Captain John Smith's accounts of the bay as he traveled the area in the early 1600's. According to Smith's accounts there were meadows of underwater grasses and oyster reefs. These anecdotal accounts of the bay have been confirmed by scientific observations of bay health. The bay at the time of these observations is rated a 100 on the scale of bay health. According to the foundation's report, bay health was rated at an all time low of 23 in 1983. Currently the report scores the status of the bay at 27, marginally above the low rating of 23, and one point less than the rating given in the 2000 report. The foundation's score is not the only indicator of poor bay health, however.

The bay remains a system dangerously out of balance.

According to the report, the U.S. Environmental Protection Agency (EPA) lists the Chesapeake Bay as impaired waters, as a result of the accumulation of nutrient pollution. One of the primary goals of the foundation is to reduce the total nutrient load to an acceptable level that would remove the bay from the impaired waters list. Doing so would raise the scaled score of the bay to 40. The foundation hopes to reach this goal by 2010. In order to reach this goal sewage treatment plant upgrades and land management practices must be employed in order to reduce the nitrogen and phosphorous levels to an acceptable level.

Currently the foundation is developing strategies and techniques to facilitate the necessary changes to the bay

region. The foundation estimates that in order to reach the goal, \$8.5 billion must be raised in order to effectuate the necessary land preservation and pollution programs that are needed. The foundation also notes that a political battle must be fought that would lead to a successful change in agricultural and residential land management practices.

A major rehabilitation campaign must be implemented if the Chesapeake Bay is to be returned to its once greater glory.

The report cites human population growth and pollution as the largest contributors to pollution in the watershed. As human population grows, development removes the natural buffer and filter process that enables the watershed to absorb the pollution that enters the bay. The filters have been further destroyed by destructive land use practices. Natural filters such as forests and wetlands would normally filter out pollution generating toxins. When these types of land areas are removed and lawns, construction, farms, and road runoff are created, the filters are replaced with pollution generating land areas.

Another issue that faces the bay is the over-harvesting of oysters. Besides forests and wetlands, oysters represent an excellent filtering mechanism for pollutants. The bay has lost nearly 98 percent of its oysters as a result of over-harvesting. According to the report, the foundation is hard at work attempting to repopulate the bay region's oyster supply. Last year more than 2 million oysters were introduced into the bay.

Copies of the report are available online at: www.cbf.org, or you may contact the Chesapeake Bay Foundation: Phillip Merrill Environmental Center, 6 Herndon Avenue, Annapolis, MD 21403.

On The Horizon... a look at upcoming committee events

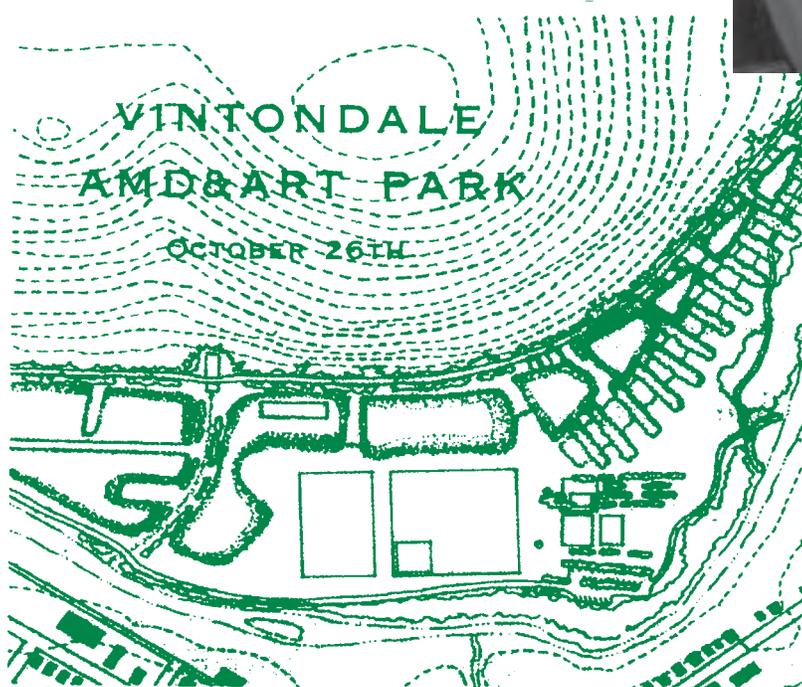
► **Monday, December 3, 11 a.m., Hearing Room 1, North Office Bldg., Capitol Complex – Infiltration Task Force meeting.** Task force will review draft report, comments, questions and recommendations.

► **Tuesday, December 11, 8:30 a.m., Hearing Room 1, North Office Bldg., Capitol Complex – Environmental Issues Forum.** Dr. Susan Stout, Research Project Leader with the USDA Forest Service’s Northeastern Research Station in Irvine, PA, will discuss *“Forestry Research to Sustain Penn’s Woods - Successes and Challenges.”*

Committee Chronicles... a review of some memorable committee events

At the committee’s October 1 Environmental Issues Forum, Dr. T. Allan Comp, Ph.D., presented an interesting program on “AMD and Art”, a unique abandoned mine reclamation project founded by Dr. Comp. The AMD, of course, stands for “acid mine drainage”. AMD and Art recently held the grand opening for its project in Vintondale, Cambria County (see artist’s rendering).

As its name implies, the project is an interdisciplinary one, using artistic disciplines such as landscape architecture, and other academic and scientific fields in reclaiming scarred mine lands. Working with local



communities, the program is intended to create “...large-scale artful new public places that would directly address the major environmental problem in the region.”

Dr. Comp, shown here with committee chairman Rep. Scott Hutchinson, describes himself as an “historian of technology” and is employed as a program analyst with the federal Office of Surface Mining (OSM). He has won a number of awards for his innovative efforts combining art and the environment.

To learn more about AMD and Art, check out its website at www.amdandart.org.

Some good news – worth recycling here - appeared in just the past few days. DEP announced that cleanups of waste tire piles containing 3.2 million tires in Berks, Bucks and Blair counties have been completed. That means that since 1995, Pennsylvania has cleaned up more than 21 million of an estimated 36 million illegally stockpiled waste tires.

To further aid in that effort, Recovery Technologies Group, Inc. (RTG), a national tire recycling company, recently announced its purchase of a defunct tire recycling facility in Braddock, Pennsylvania. The company collects and shreds waste tires, freezes them cryogenically and then makes crumb rubber for applications on playground surfaces, sports facility flooring and in automotive parts. It plans to invest more than \$1.5 million in renovating the plant and hopes to utilize as many as 200 workers in the future.

The Joint Conservation Committee (JCC) played an integral role in the original Waste Tire Recycling Act in 1996 and continues to seek out new markets for waste tire recycling. I might also note that new waste tire legislation that would expand upon and improve the 1996 act is expected to come before the General Assembly soon.

Braddock is a western Pennsylvania town recovering from economic doldrums of the past and is, in a sense, recycling itself to construct a brighter future. That is also the theory behind Pennsylvania's land recycling or "brownfields" program. A recent bus tour across Pennsylvania by DEP showed just how successful that award-winning program has been. More than 916 old industrial sites have been cleaned up and more than 25,000 Pennsylvanians now work on those sites.

Individuals interested in some industrial sites prime for recycling can find them online by visiting PA SiteFinder, a real estate directory of brownfields for sale or lease in Pennsylvania. To access PA SiteFinder, go to DEP's website

(www.dep.state.pa.us) and proceed to land recycling under the "Subjects" list.

Some interesting results came from a recently released report conducted by the Department of Conservation and Natural Resources (DCNR) and the Professional Recyclers of Pennsylvania (PROP). They found that illegal dumping in Pennsylvania state parks is more prevalent when recycling and disposal facilities are inconvenient, when local recycling ordinances are inadequate or enforcement is lax, and when recycling or proper disposal education programs do not exist in the community. To view the report, visit PROP's website at www.proprecycles.org.

See Notes From the Director on p. 2 for a new/old tire reuse technology that is resurfacing.

And, state government is doing its part. The Governor's Green Government Council (GGGC) recently issued its fourth annual "Green Plan" which highlights pollution prevention and energy conservation projects from 39 state agencies. Among its findings: the Department of General Services (DGS) alone recycled more than 4,100 tons of paper while several other agencies reported paper-use reductions. DGS also established programs to recycle tires and computer components, and green building technologies to save energy continue to increase.

Pennsylvania continues to work toward its goal of recycling 35 percent of municipal waste by the year 2003. With individuals, municipalities, corporations, organizations and the Commonwealth working together, we should be successful. If you missed it this year, celebrate America Recycles Day next year, and better yet, make every day a recycling day.

How to Contact The Joint Conservation Committee

Phone: 717-787-7570

Fax: 717-772-3836

Location: Rm. 408, Finance Bldg.

Mail: Joint Conservation Committee/PA House of Representatives/House Box 202254/Harrisburg, PA 17120-2254