

ENVIRONMENTAL SYNOPSIS

The Chairman's Corner

Rep. Scott E. Hutchinson, Chairman



Did you ever have one of those days where good news just seems to find you? I seem to be having one of those days today. Much of the good news is relevant to the mission and activities of the Joint Legislative Air and Water Pollution Control and Conservation Committee (Committee), so I've decided to package it into my column, along with some updates on what the Committee is up to these days.

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Recycling has long been a staple of the Committee's activities, and several encouraging stories about recycling appeared in the last several days. First, congratulations to Bob Bylone, who was named the new executive director of the PA Recycling Markets Center (RMC). Bob had been serving as the recycling program manager for the RMC but has now stepped up into the new position. The Committee has visited the RMC and worked with Bob a number of times, and is impressed by his skill and enthusiasm. He is passionate about creating new recycling markets in Pennsylvania and has several irons in the fire that down the road could mean more good news for another column.

You may recall in February's "Committee Chronicles" section of the *Environmental Synopsis* a trip that Committee Executive Director Craig Brooks took to Edge Rubber in Chambersburg. Edge Rubber is the longest running and most successful facility producing fine and ultra-fine rubber powders in the United States. Craig was impressed by what he saw and Edge Rubber's success is good news in and of itself.

Lo and behold, however, there is news this week that a new venture in nearby Hamilton Township - Chambersburg Tire Recycling - is having success in whittling down the Myron Young tire pile - one of the five largest tire piles in Pennsylvania. According to the story, Chambersburg Tire Recycling is looking to do business with Edge Rubber, which would be a wonderful example of a win-win situation in the volatile business world of tire recycling and reuse. I hope that progress can continue.

The Committee also plans a trip to Liberty Tire Recycling in Braddock, Allegheny County in the near future. Very quietly, Liberty Tire has become a world-wide leader in the waste tire processing industry. Last year, Liberty handled about 70 million tires, most recycled for use as fuel or in products such as welcome mats, athletic fields and railroad ties, and in rubber-asphalt mixes for highways. The Committee is looking forward to see what Liberty Tire Recycling is doing and discuss how they have found success.

(continued on page 8)

NOTES FROM THE DIRECTOR

CRAIG D. BROOKS, EXECUTIVE DIRECTOR

There's good news for electronics recycling! Retailers and electronics manufacturers recycled more than 34 million pounds of consumer electronics in 2006 under the U.S. Environmental Protection Agency's (EPA) "Plug-In to eCycling" program.

And, there's more good news! It's been suggested that the energy conserved and the greenhouse gas emissions prevented through these recycling efforts is equal to saving enough electricity to power more than 7,000 homes and take approximately 12,000 cars off the road for a year. Since the program was launched in 2003, partners have collaborated to recycle over 95 million pounds of electronic equipment.

The Plug-In to eCycling program is a voluntary partnership between EPA and electronics manufacturers and retailers aimed at recycling about 4.5 million mobile phones and offering consumers more opportunities to donate or recycle their used electronics. Recycled items included computers, printing supplies, batteries, handheld electronic devices and damaged electronics of all kinds from Hurricane Katrina and other natural disasters.

There's several pieces of good news regarding the federal "Plug-In to eCycling" program

When materials are reused and recycled it benefits both the community and the environment. It appears that Plug-In partners have energized the industry to give consumers some practical alternatives for recycling their used electronics. One of the most aggressive and creative partners was Best Buy, which collected about 13 million pounds of televisions and computer monitors from customers, and sponsored 40 collection events in local communities that resulted in recycling an additional 1.5 million pounds from 13,000 participants. Cingular Wireless recycled over 4.5 million phones – that's more than 470,000 pounds of phones, batteries and accessories. In addition, the company refurbished more than 4 million

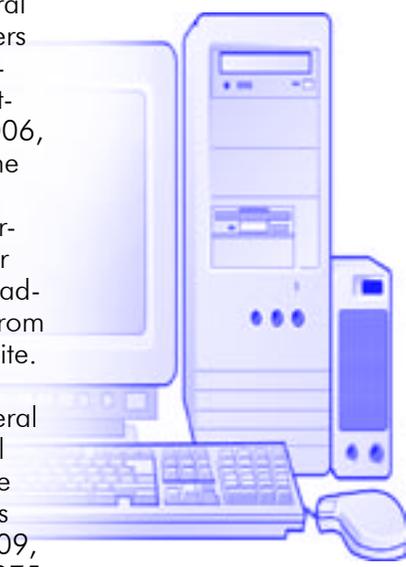
phones for resale through authorized agents. Cingular's customer service Web site now includes a store locator for consumers to search by city for the closest phone recycling center.

A number of well-known national names are ramping up their recycling activities

Dell recycled over 4.2 million pounds of electronics through innovative partnerships and collection events. Dell's program with Goodwill Industries - the Reconnect Alliance - collected more than 4 million pounds of equipment for reuse or recycling in five states. Through several partnerships, Dell offers consumers opportunities to donate computers. In September 2006, Dell offered free online recycling, providing consumers with opportunities to recycle their computers by downloading a shipping label from the company's Web site. In addition, the company also hosted several local events in several states, collecting more than 200,000 pounds of electronics. By 2009, Dell aims to recover 275 million pounds of electronics from consumers.

EPA's other Plug-In Partners include Apple, eBay's Rethink initiative, Hewlett-Packard, Intel, JVC, Lexmark, Office Depot, Sharp, Sony and Staples. These companies participated by offering online take-back or trade-in programs, creating partnerships with local organizations and hosting local collection events.

Information on EPA's Plug-In activities is available at <http://www.epa.gov/epaoswer/osw/conserve/plug-in/pdf/activ-06.pdf>.



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.

Report Urges Strong Guidelines for Open Ocean Fish Farming

– Tony M. Guerrieri, Research Analyst

There is a good chance the next fish fillet you eat will have been raised in an industrial-scale marine fish farm rather than caught wild from the ocean by a fisherman. Advances in technology and a growing demand for seafood have triggered an increase in expanding open ocean aquaculture in the United States.

But as the growth of U.S. aquaculture shifts from freshwater ponds to floating fish pens in the ocean, the potential for environmental consequences increases, according to a report by the Marine Aquaculture Task Force. The report, "*Sustainable Marine Aquaculture: Fulfilling the Promise; Managing the Risks*", examines the risks and benefits of marine aquaculture in the U.S. and offers a set of national policy recommendations to guide future development of the oceans.

Aquaculture is defined as the commercial production of fish and shellfish. With ocean fisheries in decline and global population surging, marine aquaculture is seen as key to meeting the world's growing need for food. Hopeful signs include world aquaculture production that reached almost 60 million tons in 2004, worth an estimated \$70.3 billion. Worldwide, aquaculture has grown at an average rate of 8.8 percent per year since 1950.

Despite a worldwide increase in aquaculture production, the U.S. is a relatively small player, far behind the world's three largest fish farming nations. China accounted for 41 million tons (69 percent) of world aquaculture output in 2004. India was a distant second with 2.4 million tons (4.2 percent). Other countries with thriving aquacultural sectors included the Philippines (2.9 percent), Indonesia (2.5 percent) and Japan (2.1 percent). The U.S. aquaculture industry produces less than one percent of worldwide supplies.

The U.S., however, is looking to increase aquaculture production. Some 40 percent of the fish Americans eat comes from overseas fish farms. This contributes to an \$8 billion seafood trade deficit. The domestic aquacul-

ture industry produces freshwater fish and seafood worth about \$1 billion annually, but the U.S. Department of Commerce has called for the development of a domestic industry worth \$5 billion by 2025.

Most U.S. fish farming focuses on freshwater catfish and trout, although marine farms raising Atlantic salmon, shrimp and shellfish now dot the coasts.

So far, marine fish farming in America has been conducted mainly in state waters. Legal jurisdiction over ocean space and resources is fragmented and does not correspond to marine ecosystem boundaries. States control waters within three miles of their coastline, while federal jurisdiction ranges from three miles to 200 miles offshore.

The U.S. Department of Commerce seeks to take America's \$1 billion aquaculture industry to \$5 billion in 2025... but shortcomings in regulation need to be addressed

The report suggests that two key failings of the current legal regime for marine aquaculture are the lack of clear federal leadership and the lack of standards to protect the marine environment. Currently, numerous federal agencies have responsibilities for some aspects of aquaculture regulation, but no one agency is charged with coordinating the overall process.

An example of the recommendations found in the report include statements addressing how the federal government should become more involved in regulation and fostering the growth of marine aquaculture. One recommendation is for Congress to enact legislation designating the National Oceanic and Atmospheric Administration (NOAA) as the lead agency in permitting oceanic aquaculture operations and to establish minimum environmental standards.

Marine aquaculture raises questions concerning water pollution. The report calls for NOAA to grant permits

for farms in the waters between three miles and 200 miles offshore. To receive those permits, owners would have to comply with strict water-quality standards.

There are concerns over potentially harmful interbreeding of escaped farm fish with wild fish. The fish the aquaculture industry could farm would be limited largely to local native species, according to the report. If owners wanted to grow non-native species, they would have to show that the harm to wild species in the area would be small if caged fish were to escape.

In addition, opponents to marine aquaculture argue that many farmed fish are fed fishmeal (based on ground-up fish such as mackerel and anchovies) and fish oil from wild caught fish as feed, which depletes stocks of smaller wild fish. The report recommends the federal government fund research into alternatives, such as canola oil, reducing demand on the ocean food web.

The 128-page report represents the analysis of a nine-member task force convened by the Woods Hole Oceanographic Institution in Massachusetts. The task force includes scientists, former government regulators and legislators, aquaculture business people and environmentalists. The report is available at http://www.whoi.edu/cms/files/mcarlowicz/2007/1/Sustainable_Marine_Aquaculture_final_1_02_07_17244.pdf.

Grain Quantities for Ethanol Fuel Use Understated

– Craig D. Brooks, Executive Director

The quantity of grain that will be needed to supply facilities that produce ethanol for fuel has been “vastly understated” according to a recent report by the Earth Policy Institute (EPI). While investment in fuel ethanol distilleries has increased since the late 2005 oil price hikes, the report suggests that data collection on the number of new plants under construction and the quantity of grain needed to supply such facilities has been based on speculative or incomplete information.

For example, the U.S. Department of Agriculture (USDA) predicted that distilleries will require only 60 million tons of corn from the 2008 harvest, but the EPI estimates that distilleries will need more than double that amount, or approximately 139 million tons. This amount would yield nearly 15 billion gallons of ethanol, satisfying six percent of the U.S. auto fuel needs, according to the report. If the EPI estimate is close to actual needs, the report says that the emerging competition between cars and people for grain will likely increase

the price for grain. The question is, “how high will grain prices rise?” The proposed diversion of a world food source, according to the report, will affect food prices everywhere. As the world corn price rises, so does the price for wheat, rice and other grain exports. Both corn and wheat futures were already trading at a 10-year high in late 2006.

According to the report, the U.S. corn crop accounts for 40 percent of the global harvest and supplies 70 percent of the world’s corn exports. This is a major component in the world food market. Annual corn exports from the U.S. account for nearly one fourth of the world’s grain exports, at 55 million tons. The corn harvest in Iowa alone exceeds the entire grain harvest of Canada. The report suggests that reducing the export flow of corn for food in favor of fuel production could send shockwaves throughout the world economy.

There is a sharp difference of opinion on how much grain will be needed to supply ethanol-producing facilities

According to EPI, the 116 plants involved in ethanol production in 2006 were using 53 million tons of grain per year, while the 79 plants under construction – mostly larger facilities – will use 51 million tons of grain when they come online. Expansion of 11 existing plants will use another 8 million tons of grain (one ton of corn = 39.4 bushels = 110 gallons of ethanol). In addition, nearly 200 more ethanol plants were in the planning stages at the end of 2006. If this translates into construction and finished facilities in 2007, this would mean an additional 27 million tons of grain would be needed from the 2008 harvest.

EPI has been critical of the drive to encourage more ethanol use as a fuel and has suggested that investment in biofuels production in the U.S. and other nations is a threat to the world’s food supply. EPI recommends that greater use of wind power and hybrid-electric vehicles is a more viable option than investing in ethanol production. Also, EPI suggests that the equivalent of 2 percent of the U.S. automotive fuel supply now coming from ethanol could be achieved several times over and at a fraction of the cost by raising auto fuel efficiency standards by 20 percent.

The EPI report, “*Distillery Demand for Grain to Fuel Cars Vastly Understated: World May be Facing Highest Grain Prices in History*”, is available at <http://www.earth-policy.org/Updates/2007/Update63.htm>.

Warming Climate Will Impact Washington State's Economy

– Tony M. Guerrieri, Research Analyst

A warming climate could cost Washington state's economy millions of dollars in higher prices and remedial measures, according to a report by Washington's Department of Community, Trade, and Economic Development and its Department of Ecology.

The report, *"Impacts of Climate Change on Washington's Economy"*, reached three conclusions about the effects of climate change on Washington's economy:

✘ Climate change impacts are visible in Washington state and their economic effects are becoming apparent.

✘ The economic effects of climate change in Washington will grow over time as temperatures and sea levels rise.

✘ Although climate change will mean increasing economic effects, it also opens the door to new economic opportunities.

The report weighs the effect of warmer temperatures on seven key sectors of the state's \$269 billion economy, based on predictions that the region's climate will warm an average of 2 degrees Fahrenheit higher than the 1970-99 average by the 2020's and 3 degrees higher by the 2040's.

The most important way in which climate change could affect Washington's forests may be through fire. Higher temperatures increase the incidence of wildfire. Already, the report finds, the average number of large wildfires – those greater than 500 acres – in Washington has jumped dramatically, from an average of six per year in the 1970's to 21 annually since the turn of the century. The report predicts the number of acres burned will increase by 50 percent by 2020 and by 100 percent by 2040.

Federal and state costs for preventing and fighting Washington wildfires may exceed \$75 million per year by the 2020's, 50 percent higher than the current expenditures. The cost could double by the 2040's.

The effects that retreating winter snowpack in the mountains will have on drinking water supplies are also a concern. Mountain snowpack acts as a natural reservoir, storing precipitation during the winter and releasing it during the spring and early summer. As many as 75 percent of glaciers in the North Cascades could vanish in this century if warming predictions prove true, the report states.

Winters will bring more rain and less snow in the mountains, the report warns, leading to a reduction in the snowpack essential for the summer water supply in Seattle and numerous other parts of the state. The cost of offsetting that decline through conservation measures could exceed \$8 million per year by the 2020's and double that by the 2040's, according to the report.

Agriculture is a \$5.3 billion business in Washington state. Climate change could impact agriculture in a number of ways. For example, warming could wreak havoc on the state's wine grape industry. Wine grapes in Eastern Washington will be pushed to the upper limit of their temperature tolerance range, meaning they will have to move to other regions. Cooler areas, such as Western Washington, may become more suitable for prized merlot or syrah grapes.

Two key counties may experience up to a \$6 million decline in dairy revenue by the 2040's because higher temperatures adversely affect dairy cows. Dairy cows produce about 60 pounds of milk a day under optimal conditions, but produce about a pound less per day for each sustained degree above 68 degrees Fahrenheit.

The average annual crop loss because of water shortages and drought could rise from a historic average of \$13 million to \$79 million by mid-century.

There are expected to be both environmental and economic effects on Washington state from a warming climate

Other economic impacts cited by the report include unquantified public health costs through an increased spread of West Nile virus and increasing incidence of asthma, which already costs the state \$400 million a year, and through heat-related illnesses and mortality.

The report notes that adapting to and reducing the effects of climate change also presents economic opportunities, such as the development of green technologies. The state's \$150 million solar industry could expand to help replace fossil fuels. So could wind-power projects, the fuel-cell industry and producers of biofuels.

The 119-page report is available at: <http://www.ecy.wa.gov/pubs/0701010.pdf>.

DOE Says Challenges Remain for Meeting Future Energy Needs

– Craig D. Brooks, Executive Director

A report by the Government Accountability Office (GAO) suggests that Congress needs to dramatically increase funding for alternative energy sources or it is unlikely that the United States will be able to reverse its dependence on foreign oil. According to the report, current Department of Energy (DOE) funding levels for research and development are not likely to be enough to deploy alternative energy sources in the next 25 years.

The report, *“Key Challenges Remain for Developing and Deploying Advanced Energy Technologies to Meet Future Energy Needs”*, says that despite our growing reliance on foreign oil, the DOE’s budget for renewable, fossil and nuclear energy technologies has declined. According to the report, DOE’s budget authority dropped from \$5.5 billion in fiscal year 1978 to \$793 million in fiscal year 2005, a decline of over 85 percent.

In fiscal year 2006, Congress provided about \$982 million in budget authority for energy research and development (R&D), including \$324 million for renewable energy R&D, about \$434 million for fossil fuel R&D, and about \$224 million for nuclear energy R&D. Although DOE has been faced with budget constraints, they have proposed in recent years to concentrate funding on key technologies for meeting the nation’s growing energy demand, while eliminating funding for geothermal, hydropower, oil and natural gas technologies. The report noted that continued reliance on conventional technologies leaves the United States vulnerable to crude oil supply disruptions, with potential economic, energy and national security consequences.

The conclusion of the GAO report is simple: without a dramatic funding increase for alternatives, U.S. dependence on fossil fuel will likely continue unabated

However, not all is lost. While setting priorities, the federal government has relied on individual states to enact various standards, mandates and financial incentives to establish energy technologies. Currently, 45 states have enacted legislation or developed initiatives to promote the use of renewable energy technologies, primarily to address the growing demand for energy, but also to encourage local development and provide a reliable, diversified electricity supply. According to the report, 39 states have

established interconnection and net metering rules that require electric power companies to connect renewable energy sources to the power transmission grid and credit consumers that use renewable energy. In addition, 22 states have established renewable energy portfolio standards requiring or encouraging that a fixed percentage of the state’s electricity be generated from renewable sources. Tax credits, loans and grants are offered in 45 states for the purchase of renewable energy equipment.

In addition to specific incentives and policies, some states have implemented statewide programs to encourage advanced renewable technologies. For example, since 1980, Michigan has provided mandates and production incentives to promote ethanol production.

Minnesota established an incentive in 1986 that paid ethanol producers 20 cents per gallon over 10 years and mandated in 2003 that all gasoline sold in the state contain at least 10 percent ethanol. In 2004, Minnesota’s governor proposed raising this mandate to 20 percent. As a result, the state is now home to one-third of the nation’s E85 (85 percent ethanol and 15 percent gasoline) stations and has replaced nearly 10 percent of all its gasoline consumption with ethanol.

New Mexico enacted a production tax credit of 1 cent per kilowatt-hour for companies that generate electricity from wind, solar or biomass. In February 2006, New Mexico enacted a 30 percent personal income tax credit (up to \$9,000) for residents who purchase and install photovoltaic or solar thermal systems.

Since 2004, Massachusetts has provided \$2.5 million annually in grants to consumers who install clean-energy technologies under the state’s renewable portfolio standards. These technologies include solar thermal electric power, photovoltaics and wind generation.

The GAO report is available at <http://www.gao.gov/new.items/d07106.pdf>. The report number is GAO-07-106.

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 16, 12 noon, Room 205, Matthew J. Ryan Building – Environmental Issues Forum. Keep Pennsylvania Beautiful's (KPB) Executive Director Julia Marano will make an Earth Day presentation on KPB's efforts to prevent and clean up litter, stop illegal dumping and improve Pennsylvania's roadside aesthetics. The presentation will also include information on the Great Pennsylvania Cleanup.

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



The Joint Legislative Air and Water Pollution Control and Conservation Committee's Sewage Task Force and Advisory Committee recently held its second meeting (large group photo above), focusing on "Financing Sewer Infrastructure on the Federal and State Level".



After Committee Chairman Rep. Scott Hutchinson opened the meeting (photo at left), the task force heard from six different speakers regarding financing issues.

Among those addressing the meeting were John Hines, executive director of the Water Planning Office of the PA Department of Environmental Protection (photo at top right) and PENNVEST Executive Director Paul Marchetti (photo at bottom right).

Also speaking were Don Niehus of the U.S. Environmental Protection Agency, two officials from the Maryland Department of the Environment's Water Quality Financing Administration and Russell McIntosh, assistant vice president of the engineering firm Herbert, Rowland and Grubic, Inc.

The task force and advisory committee will continue its research and meetings pursuant to House Resolution 88.



When the Committee helped write Pennsylvania's Waste Tire Recycling Act in 1996, it was these kinds of stories that we hoped to see. We have come a long way in reducing the stockpiles of 36 million waste tires that existed 11 years ago, but there is still a long way to go in creating markets and advancing the waste tire recycling industry. Success stories like these show that progress is being made.

Speaking of Allegheny County, and turning from tires to appliances, I was pleased to read a story in the Pittsburgh Post Gazette that the Allegheny County Board of Health has reauthorized a popular recycling program for appliances, like refrigerators, freezers, air conditioners and dehumidifiers. According to the story, the Board of Health committed \$90,000 from the county Clean Air Fund for the program, more than double the 2006 funding. Last year, 1,000 old appliances were collected from 900 residents in 75 municipalities in less than a month. Those are impressive numbers and they should increase this year. Like tires, improperly disposed of appliances are a health hazard and a blight on Pennsylvania's countryside, and if we can help to prevent illegal dumping, we will all benefit.

There has been good news recently in regard to several issues of interest to the Committee...and spring has arrived, which is good news in itself.
See p. 2's Notes From the Director article for good news on electronic recycling

Leading the way in the effort to prevent and clean up illegal dumping is the Keep Pennsylvania Beautiful (KPB) organization. KPB is spearheading the upcoming Great Pennsylvania Cleanup and the organization's Executive Director Julia Marano will be the Committee's guest speaker at our April 16 Environmental Issues Forum. (See page 7 for date, time and place.) Julia spoke at a forum two years ago and we are anxious to get a progress report on issues such as the state's anti-littering campaign, efforts to curb illegal dumping and the issue of roadside aesthetics.

The latter issue is one on which the Committee has been working closely with KPB. We are encouraged after several positive discussions with PennDOT about roadside aesthetics, and we are seeking to give it a higher profile and priority in Pennsylvania and encourage a coordinated and comprehensive effort to improve roadside aesthetics. There is no reason Pennsylvania roadways need to be cold, unwelcoming, colorless, litter-marred strips of asphalt and concrete. Roadside aesthetics is both an environmental and economic issue, as Pennsylvania strives to be clean and to provide an appearance that makes tourists and employers want to visit and stay here.

Finally, although spring seemed a long way off as I wrote this with snow falling, March 21 was the first day of spring and a press release I received from the Pennsylvania Game Commission provided a final bit of good news and optimism. The release noted that it is the right time to put up or repair bluebird boxes to shelter the eastern bluebird. This colorful member of the thrush family provides a lyrical song as the weather warms – a sure sign of spring. To learn more about the bluebird and how to make your home more attractive to our feathered friends, visit the Game Commission's website at www.pgc.state.pa.us, the Bluebird Society of Pennsylvania's website at www.thebsp.org or the North American Bluebird Society at www.nabluebirdsociety.org.

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