



RECYCLING CHALLENGE AMONG COLLEGES/UNIVERSITIES

By MADELYN PENNINO, staff writer

Elizabethtown College and Millersville University are doing their part to help conserve resources and protect the environment.

The schools are competing against nearly 400 other colleges and universities across the country in RecycleMania 2008, a contest to see which school can motivate its campus community to recycle most and reduce overall waste.

Over a 10-week period that began Jan. 27, participating campuses are competing to see which institution can collect the largest amount of recyclables per capita, the largest amount of total recyclables, the least amount of trash per capita and the highest recycling rate.

Results, which are measured in pounds, are reported weekly on RecycleMania's Web site, www.recyclemaniacs.org.

Laura Barry, a residence director at Elizabethtown College, brought RecycleMania to the school. Barry said the competition will strengthen the school's existing recycling program. "The college already does a lot with recycling — we just wanted to increase awareness and have some fun while doing it," Barry said.

To kick off the event, residence halls last week held a "Green Party," at which students learned about organic food and played recycling-themed games.

Barry said she sees students making a concerted effort to recycle. "I see students recycling a lot more cans," Barry said. "They really want to help."

Joe Metro, Elizabethtown College's director of Facilities Management, said the school's recycling program has expanded in the last four years. "We emphasize participation from the whole campus," Metro said, "from people in the offices to people in their rooms."

Elizabethtown's recycling program yields between 1 and 2 tons of recyclables a week, according to college officials. Metro said he believes students are prudent about recycling and being less wasteful. "I think they are very serious about it," Metro said. "It's part of their age group to be conscientious." Barry said she hopes to make RecycleMania an annual event.



AG IN THE CLASSROOM TEACHER WORKSHOP

For a week during the summer, teachers from all over the state visit farms and agricultural industries to learn how food moves from the source to the consumer. In addition, the program emphasizes the relationship between the food we eat and our environment.

Field trips and in-class seminars instruct teachers on such topics as nutrition, ecology, agriculture's place in civilization, food uses, and the increasingly popular use of integrated pest management (IMP) in the farming industry.

Teachers are able to use the information they receive to integrate agriculture and information about the earth's natural resources into their curriculum. They are able to use their personal experiences to explain to their students how Pennsylvania's largest industry affects each of their lives every day.

Ag in the Classroom gives you learning experiences that you cannot get anywhere else. This course will prepare you to bring agriculture to life in your classroom and across your curriculum. It is a standards-based program that makes real connections.

The dates of the workshop are July 13-18 and is held at Penn State University, main campus. If you are interested in attending, please contact the conservation district at 272-3908 ext. 4.

SNOW, ROAD SALT AND THE CHESAPEAKE BAY

By Tom Schueler, Center for Watershed Protection

Road salting is a pretty recent phenomenon in our region. Prior to the 1970's, sand and other abrasives were the primary weapon of choice to attack snow and ice. With the advent of new spreaders and increased road traffic, most highway agencies shifted toward heavier use of road salt in the winter. Annual road salt use has gradually increased over the last two decades, and now fluctuates between 10 and 20 million tons per year on a nationwide basis, depending on the severity of the winter. Despite the fact that much of the Chesapeake Bay watershed is situated below the traditional "snow-belt", it still accounts for much of the road salt used in the country (about a third of all road salt used in the U.S. is applied to states in the mid-Atlantic region).

In our region, about 20 tons of road salt are applied to each mile of four lane highway in a normal year. While exact statistics are not available for the total amount of road salt used across the Chesapeake Bay watershed, we conservatively estimate that about 2.5 million tons are applied each year. This is a lot of salt. To put this in perspective, consider that if all this salt were dissolved in a container of fresh water, it would make more than 15 billion gallons of seawater. Or to put it another way, the entire volume of the tidal Chesapeake Bay (51 billion cubic meters) typically contains about 250 million tons of chloride at any given time.

Chloride is one of the main components of road salt, and is extremely soluble in water. As a result, there is virtually no way to remove chloride once it gets into the watershed. It moves freely and easily through both surface and groundwater on its way to the Bay. Indeed, road salting is thought to be the primary source of chlorides to streams and rivers of the Bay. Consequently, once snow melts, streams tend to get salty. The highest chloride levels are recorded in melt-water runoff near salt depots, major highways, snow piles in parking lots, local streets, and in urban streams.

In addition, road salt contains many impurities. As much of 2% to 5% of road salt consists of other elements, such as phosphorus, nitrogen, copper, and even cyanide. A form of cyanide is added to road salt as an anti-caking agent (about 0.01% dry weight). Under certain conditions, it can be transformed into free cyanide, which can be very harmful to humans and aquatic life. As much as two pounds of cyanide are deposited on one mile of four-lane highway through normal road salting concentrations. Scientists have measured cyanide levels in urban streams ranging from 3 to 270 parts per billion (ppb) for short periods of time as a result of road salting (toxicity begins at 20 ppb).

Melting Snowpacks: Not Exactly Pure as the Driven Snow: Fresh snow is beautiful and relatively pure. In a short time, however, the snow pack gets grey and dirty in urban areas, particularly along the roadside. Road slush, salt spray, airborne pollutants, street dirt, and trash all accumulate in the snow pack over days and weeks. When the snow pack melts, it releases many pollutants to the stream, including sediments, nutrients, zinc, copper, lead and hydrocarbons and chloride. During the melt, pollutant concentrations in storm water runoff are among the highest seen all year.

Impacts of road salt on the environment: Generally, the presence of chlorides in our drinking water is not a major public health concern. Our tongues can generally detect saltiness or brackishness in drinking water when chloride levels exceed 250 mg/l. Water utilities routinely report a peak in complaints about the taste of drinking water during winter melt events. However, since we only get about 2% of our daily salt intake from drinking water, the extra sodium and chloride are not usually a major problem. We get about 98% of the salt from the foods we eat, so it makes more sense to pass on the french fries, rather than a glass of water. The impacts of chloride and melt-water pollution on aquatic life, however, can be much more severe. A growing body of research has led Canada to recently designate road salt as an environmental toxin, and to look for ways to reduce its use without compromising road safety.

Melting roads create an artificial "salt lick" that attracts both birds and mammals. In the past, natural salt licks were often considered the best hunting grounds since wildlife crave salt in their diet. Wildlife biologists have recently observed that deer, elk, moose and other mammals lick salt from road-sides where they often become road-kills. The same effect is seen for small birds, such as finches, whose cravings for roadside salt have earned them the dubious nickname as "grill birds" in northern regions of the country.

High salt levels are frequently measured in roadside soils. The saltiest soils occur within a few feet from the blacktop, but the influence of salt can extend as far as 100 feet from a major highway and 50 feet from a two-lane road (salt is transported by spray from fast moving cars and trucks). High salt levels are usually observed in lawn soils within five or ten feet of sidewalks and driveways that are salted. Many species of trees, shrubs, and ground covers are extremely sensitive to high soil chloride levels and may be killed, dieback, or fail to germinate under these conditions. Highway researchers report that as many as ten percent of trees found along road corridors have been harmed by road salt. Excessive road salt also damages human infrastructure, including concrete bridges, decks, and parking structure, and corrosion of metal surfaces (such as the undersides of older cars). The Transportation Research Board estimates that the national cost of these damages exceeds four billion dollars each year.

The cost of salt, along with the environmental and structural damages it causes, makes one wonder if it's time to search for an alternative solution to dealing with snow-covered roads.

SRIRNG CALENDAR OF EVENTS

- ◆ **March 20**—First Day of Spring
- ◆ **April 16**—LCCD Tree/Plant Sale Pick-up (preorder deadline is March 28)
- ◆ **April 22**—Earth Day
- ◆ **April 21, 23, 25**—Earth Day Events at QEWP
- ◆ **May 1**—High School Envirothon at Middle Creek
- ◆ **May 3-4**—Swattie Sojourn
- ◆ **May 8**—Middle School Envirothon at Levitz Park
- ◆ **May 16**—Elementary Envirothon at Coleman's Park
- ◆ **May 18-20**—Pennsylvania State Envirothon at Penn State



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