The Real Dirt on Sewage Sludge

Waste from households and industries treated at a sewage plant may be spread on a farmer’s field near you. Some say it’s a good deal, because it’s cheap or free fertilizer. Others worry that it will add heavy metals and other undesirable compounds to the food chain and eventually end up on your dinner plate.

The truth is we really don’t know what the long term affects might be. Sludge has become an increasingly important issue in citizen surveys. Here are some questions that Washington County residents have been asking.

What is sludge?
Sludge is the material remaining after raw sewage has been treated at a wastewater treatment plant. Septage is the material periodically removed from a septic tank, cesspool or portable toilet. Collectively known as biosolids, sludge and septage contain a mixture of solids and liquids with 90% water content. Once biosolids are dewatered and readied for land application, they look like wet peat moss or liquid manure.

Why is it applied to land?
In the past, farm application was not the favored method of disposal. Sludge was incinerated or landfilled, and only a small percentage was applied to farmland. With air quality concerns increasing and landfill capacity at a premium, municipalities have moved to farm disposal of these waste sludges, especially in Wisconsin, where 98% of wastewater sludges are applied on farms. Continued on Page 2
Can sludge be useful as a fertilizer?
Biosolids contain substances beneficial to plant growth. The nutrient content of biosolids is comparable to other fertilizers. Sludge contains nutrients such as nitrogen, phosphorus, potassium, and other beneficial materials like organic matter and micronutrients. If applied properly, biosolids can also improve the physical properties (bulk density, particle aggregation, water holding capacity, etc.) of soil.

What are the potential problems associated with land application?
Unfortunately, sludge contains more than just beneficial plant nutrients. Recycled biosolids also contain nonylphenols, pathogens (salmonella, cryptosporidium, giardia, hepatitis A), dioxins, furans, pesticides/herbicides, industrials chemicals and heavy metals. Many of these unwanted materials can persist in the environment and build up in the soil over the years increasing their potential for leaching into groundwater or eroding into surface water.

According to a recent survey completed by the WI-Department of Natural Resources (DNR)...over half of the biosolids spread on cropland in WI contained detectable levels of PCBs, a chemical linked to numerous health problems, including cancer. In general, researchers agree that the effects of biosolids are not dangerous when managed properly. However, they caution that additional study of the components of biosolids and the long-term fate of these components in the environment and the human body is needed before unlimited application of biosolids can occur safely on all lands.

Where is it applied and where does it come from?
In Washington County there are more than 1,000 sites comprising 8,638 acres that have been approved by the WI-DNR. Approximately 50% of the biosolids spread on our farm fields come from Milwaukee, Port Washington, Cedarburg, Saukville, Grafton and Northland Cranberries Inc. That is in addition to the sludge from our own wastewater treatment plants and septic tanks.

Who monitors biosolid application?
In Wisconsin, biosolid application is regulated by the WI-DNR with guidance from the U.S. Environmental Protection Agency (EPA) Federal Standard 503. Wisconsin has been monitoring sludge application for 20 years and since the 1970’s has been a national leader in recycling sludge as a fertilizer. Of all municipal sludge generated in the state, 99% is recycled through land application.

What are the restrictions on land application?
Land application is limited to cultivated cropland (non-human consumption), tree plantations, pasture, or hayland. Every biosolid application site must be approved by the DNR before spreading can occur. Approval for an application site is based upon many criteria which
include soil (pH, permeability), site (slope, proximity to water sources), and social (proximity to wells, public places, and private residences) characteristics. The amount of biosolids applied to a site depends upon the soil test results, nutrient content of the sludge, type of crop being planted, other nutrients applied to the site, potential heavy metal buildup, and the date when biosolids were last applied.

**I'm concerned. What can be done about the land application of sludge?**
Researchers are exploring different ways to manage waste and are looking for alternatives to sewer new communities. In the meantime we must limit the contaminants released from industry and our homes.

**What can I do at home?**
- Build a compost pile instead of using a garbage disposal
- Reduce the toxic substances which get flushed down your toilet and sink drains
- Take unwanted pesticides, fertilizers, oil & paint to a Clean Sweep Collection
- Educate yourself and voice your opinion

**Where can I get more information?**
Contact the Land Conservation Department for an information packet or visit the LCD website at [www.co.washington.wi.us/lcd](http://www.co.washington.wi.us/lcd) to access biosolid information and links to other websites dealing with this issue. Coming soon to the web site...a section on where and when sludge is being spread in Washington County.

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**Volunteers At Work**

Fourteen new volunteer monitors were recently trained to collect water quality data in the Rock River Basin. Shown above: Raynelle Chmiel collects Benthic Critters with a D-frame Net. Raynelle and her husband, Steven have adopted this beautiful site located on the Coney River in Richfield.

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**Alternatives for Toxic Products:**

**CLEANING PRODUCTS**

**GARBAGE DISPOSAL FRESHENER**
Grind ice and used lemon or orange in the disposal. Besides freshening, the ice will clean and sharpen the blades.

**TOILET BOWL CLEANER**
Sprinkle some baking soda into the bowl. Drizzle with vinegar; scour with a toilet brush. This not only cleans, it deodorizes, as well.

**MILDEW REMOVER**
Dissolve half-cup vinegar with half-cup borax in warm water. Mix them fresh for each use.

**BASIN, TUB, AND TILE CLEANER**
Rub the area to be cleaned with half a lemon dipped in borax. Rinse, and dry with soft cloth.

**FURNITURE POLISH - 3 ways!**
A) Use a soft cloth & wipe with a bit of mayo
B) Rub furniture with cloth dipped in cool tea.
C) Mix 2 parts olive oil with 1 part lemon juice. Apply mixture to furniture with a soft cloth and wipe it dry.

**FLOOR CLEANER**
Mix 1 cup white vinegar with 2 gallons hot water. For greasy floors, add one-fourth cup washing soda and 1 tablespoon vegetable-oil-based soap to the mixture.

**LAWN AND GARDEN PRODUCTS**

**GARDEN & HOUSEPLANT INSECTICIDE**
Use one capful of dish soap per gallon of water. Spray on plants.

**SNAIL AND SLUG KILLER**
Put hair clippings or stale beer in a dish.

**ANT CONTROL**
Place red chili powder, paprika, or dried peppermint at point of entry.

**CHEMICAL FERTILIZER**
Use compost, peat moss, blood and fish meal
Nutrient Management Workshops On Deck

Have you ever wondered if you are applying enough fertilizer and manure to get the best yields from your crops? This winter the LCD will sponsor a series of workshops to help farmers make their own fertilizer and manure recommendations. Save money and protect the environment! Cost sharing for soil sampling will be available on a first come, first serve basis. Call Matt Zoschke at 262-335-4806 for more details.

2002 Stewardship Day Changes Focus

In culmination of the 2002 earth month activities 76 volunteers, many of whom were high school students and girl scouts, stenciled 375 storm drains in the West Bend area and cleaned up garbage and debris from the Quaas Creek watershed.

According to Education Coordinator, Sue Millin the Land Conservation Department usually hosts a huge River Clean Up on this day every year....“but, small groups had already gotten the job done!” It is great to see people getting involved. We just shifted out focus to the storm drain stenciling program.” The City of West Bend donated the paint.

For information on how you can get involved in stewardship activities like river cleanups, stenciling and water quality monitoring call Sue Millin at 262-335-4807.

Washington County LCD Establishes Local Fund to Promote Conservation Efforts

Washington County is pleased to announce SIP: a brand new Stewardship Incentive Program. Through SIP the Land Conservation Department will provide farmers and landowners with local funding to adopt or install conservation practices.

The goal of SIP is to promote the conservation and protection of Washington County land and water resources.

According to County Conservationist, Troy Kuphal, “the County is interested in funding practices that will control sediment and other types of runoff pollution.”

Conservation tillage, vegetative buffers and nutrient management are just a few examples of practices that will be encouraged through SIP.

“By adopting practices such as these, farmers can significantly reduce sediment and nutrient pollution of our local streams, rivers and lakes,” states Kuphal.

The Land Conservation Department will be accepting the first round of applications for SIP funds in August. “We plan to review applications on a rolling basis from there on out.”

For more information please call technician, Paul Sebo at 335-4805.
This past school year the Land Conservation Department hosted the fifth annual Champions of the Environment Program with 953 students from 24 schools and youth groups throughout the county participating.

With a 2002 theme of: Rivers: Ribbons of Life, the Program incorporated six categories of competition, including the environmental awareness poster, essay, spokesperson, photography, computer art and project.

The Champions Program is the culmination of a school years worth of hands-on environmental studies.

Special thanks to West Bend Mutual Insurance Co. for supporting this educational effort.

First Place Gold Medal Champions include: Joe Ahlers, Alexander Becker, Jamison Bergquist-Oguchi, Matthew Biller, Chelsea Daniels, Brittany Donner, Steve Helsell, Josiah Hensler, Katie McCarthy, Erin McCarthy, Connor McCarthy, and Sammy Scheunemann.
Rivers: Ribbons of Life
Wisconsin Rivers Are Exploding With Life

Second Place Champs Silver Medal Winners:
Lindsey Krell
Hilary Wesenberg
Shayna Henke
Ashley Keul
Kyle Dorfler
Bridget Heiking
Taylor Lackey
Alyssa LaScelle
John Lauton

Poster, Connor McCarthy, Grades 4-6

Special Project Award, Katie McCarthy, Grade 5
Third Place Bronze Medal Champions include:
Hayden Engstrom, Grant Noller, Ashley Hoeck,
Abigail Lutz, Ben Khoo, Melissa Bremer, Alec
Steinmetz, Jacob Mitchell and Amanda Brath
Ever since there was water on this earth, rivers have been producing life on the continents faraway from the oceans. Without them, our world would be very different. Many people do not even realize what major impact rivers have on their lives. Everyday, they maintain our delicate ecosystem one-gallon of water at a time.

Rivers have a profound effect on the vegetation surrounding it, especially in dry regions. Rivers flowing through dry areas enable plants and trees to grow along them that otherwise wouldn’t be able to grow there. A little oasis springs up along the river’s banks where life abounds. This in itself is an entire ecosystem.

Irrigation is an important process that involves rivers around the world. It lets farmers grow crops in areas that would otherwise be unsuitable. Water is drawn from the rivers and pumped to the location of the crops. This way, when rain doesn’t fall for a long time, water can be supplied to the crops so they remain healthy. Thus, rivers help produce food that is needed for human life.

Rivers are also important for sustaining animal life. They provide much needed drinking water. This is especially important for animals that live in dryer areas. Amphibians depend on having a wet environment such as a river. If they get too dried out, they may die.

Another benefit provided by rivers might not be so obvious. Many people do not realize that a whole ecosystem is located inside a single river. Microscopic organisms are abundant in surface waters, and tiny algae live in the water and perform photosynthesis. Slightly bigger animal plankton eats these algae. These are just the first two steps in a vast river food chain.

Perhaps the most crucial advantage we see from rivers is happening right as we speak. Rivers provide a large amount of drinking water to the people of America. If it weren’t for rivers, cities and towns would have to pay a lot more money to have drinking water made available to them. Drinking water is yet another way rivers are ribbons of life.

Because of all these reasons, it is very important to conserve our rivers. This means we should keep them clean and free from pollution. There are many ways each person can help with this great task. If we all work together, it is very possible to achieve this goal.

First of all, companies have to stop dumping harmful contamination into our rivers. This pollution kills the delicate ecosystem that is found in and around rivers. Also in some cases, it poisons our water supply so we cannot drink it. This causes many health problems if people do actually drink this poison. Cities then have to spend much money to fix the problem or to get water from a different source.

Yet another problem that needs to be solved is created by the individual. People need to stop dumping harmful chemicals down their drains. These chemicals end up getting mixed up with the groundwater, which is definitely not good. From there, they can eventually make their way into rivers and cause more contamination that destroys more life.

Rivers are very important to our world. They influence the vegetation around them and help irrigate crops that are farther away. They help animals to survive, and they themselves house an ecosystem. People are also kept alive from the drinking water they provide. It is vital, therefore, that we do not pollute our rivers. We must keep them clean so they continue to help and provide for us. If we carefully do our part, rivers will surely continue to be ribbons of life.
Environmental Educator Of the Year Goes to Central Middle School’s Dennis Panicucci

Hartford Central Middle School teacher, Dennis Panicucci was selected as the Washington County Land Conservation Department 2002 Environmental Educator of the Year for incorporating water studies and environmental issues into his curriculum.

Panicucci was instrumental in establishing a 58 acre outdoor classroom surrounding the middle school. Fundraising, constructing a series of four ponds, restoring an old wetland, planting prairie and building an observation deck are just a few of the environmental activities he was involved in the last ten years.

He and his students have built and erected blue bird houses, planted trees, monitored air quality by studying milkweed and participated in the Land Conservation Departments Adopt-A-WATERWAY water quality monitoring program.

Sue Millin, the department’s education coordinator, said there has never been a teacher more deserving of this award. “Dennis has helped his students develop an appreciation for the environment and has encouraged countless other teachers and community members to get involved.”

When asked about his strategy, Panicucci explains “We teach our students to think globally, but that there is a lot that they can do right here in their own community to help the environment.”

Kudos to Dennis for his vision, hard work and ability to motivate others! Washington County is a better place because of his efforts.

LCC Chairman, Maurice Strupp congratulates 2002 Environmental Educator of the Year, Dennis Panicucci at the Champions of the Environment Reception which was held at the UWWC theatre. The event was well attended with over 175 Champion winners and their families participating.

The 2003 Champions Of The Environment study topic is groundwater and will follow the theme of Dripper Goes Down Under

Many teachers and students are already developing strategies to incorporate the groundwater theme into their 2002-2003 curriculum. For information on how you can get involved call Education Coordinator, Sue Millin @ 262-335-4807.
Planting a Prairie Buffer with Les Gundrum

While the Gundrum Farm may be small in size, it is big on conservation. This spring, Les Gundrum seeded five acres of land into a prairie buffer to keep sediment from washing into Quaas Creek. Due to residential development and the lack of road ditching in the watershed an enormous amount of stormwater comes flushing over his land during spring snow melt and after intense rain storms. This was creating deep gullies in his fields and washing tons of sediment into Quaas Creek....which is a coldwater stream.

According to Les, “these new prairie buffers will help out tremendously.” The buffers, which are 150 feet wide, should keep approximately 8 tons of sediment from washing into the Creek each year. They will also reduce the amount of nitrogen and phosphorus that reach the stream by 10 and 17 pounds, respectively.

His efforts don’t stop there. Like a true conservationist Les wanted to do more to stop the soil erosion on his farm. He now has over 1 acre seeded into grass waterways, 3 acres seeded into trees, and another 1 acre seeded into grass buffer strips which lay between his fields and around the outside border of the farm. He also practices high residue crop management striving to leave “as much residue as possible on the soil surface.”

In addition to being a conservation farmer, Les is the chairman for Breakfast on the Farm, works closely with the Diary Promotion Committee, assists with 4-H and community garden programs, and works as a Animal Nutrition Consultant for Farmers Inc. Elevator in Allenton. He also enjoys hunting and fishing, but farming is his main interest.

He sells his farm products at the West Bend Farmer’s Market on Saturday mornings and has a retail stand on his farm. Les believes in direct marketing: providing eaters with a link to the farm that raises their food. In the future, Les hopes to expand his local markets enabling him to retire on the farm and continue growing and marketing high quality food for the residents of Washington County.

For information on how you can receive financial and technical assistance to help with conservation efforts on your land call the LCD office. Funding is now available through numerous programs including the new Washington County Stewardship Incentive Program, CREP and EQIP.

Conservation practices will always be an important part of my farm.

-Les Gundrum
Saving for a Sunny Day: Rain Barrels in the Garden

If you're a gardener and are looking for ways to save on your bills and ensure that your plants don't suffer during the next dry spell, consider an old-fashioned technology: rain barrels.

You can buy or make a rain barrel. If you have lots plants to care for, consider linking several together to increase your storage capacity.

Over 620,000 Trees Planted Since Program Began

Local residents and wildlife will soon enjoy over 91,000 trees and 138 lbs of prairie seed added to the Washington County landscape through the 2002 Land Conservation Departments’ annual tree program.

According to Program Coordinator, Stephanie Egner, more than 620,000 trees have been sold since the Program began in 1993.

“We would like to thank the Planning and Parks Department, the Natural Resource Conservation Service and DNR forester, Julie Peltier for their assistance,” states Egner.

Thanks to all those who participated in the tree program. The time you invested in planting these trees and prairie seed will help to better our environment for future generations.

For your convenience order forms for the 2003 program will be available on the web in mid December at www.co.washington.wi.us/led. Hard copies can be obtained at that time also. Call us at 262-335-4810.

Conservation News is a quarterly newsletter for Washington County residents. Its purpose is to increase awareness and promote action to protect our land and water resources. Viewpoints of authors do not necessarily reflect those of the Land Conservation Committee or the Washington County Board of Supervisors. The Committee and Land Conservation staff encourage responses from our readers.

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Education Coordinator and Editor
Sue Millin

We can not solve the problems that we have created with the same thinking that created them....

- Albert Einstein
Where in the County?

We received a record number of entries for this one room school house located on the SW corner of Pleasant Valley Road and Jackson Drive. Thanks to the many readers who wrote in to tell us of their experiences while attending the Maple Lawn School. The location was referred to as “Albrecht’s Hill” and Arlene Schneider remembers carrying water to the school when she was a young girl. Maynard Marth says he can still see all the students romping in the school yard.

The lucky winner was Sandra Pamperin of West Bend. She received 25 evergreen trees for her correct identification of the old District Five School House. Congratulations Sandra!!!