

# GEAUGRAPHER



## WINTER 2004

### Geauga SWCD Mission:

*“To conserve, protect, and enhance the resources of Geauga County by providing leadership, education, and assistance to all”*

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## NPDES Phase II Corner: Water Quality Awareness

In Ohio, many animals, including River Otters, have been seriously impacted by pollution entering our waterways. River Otters that were abundant in the early 1800’s were considered endangered species in Ohio just a century later.

Fortunately, the Environmental Protection Agency (EPA) recognized that the degraded quality of U.S. waterways due to pollution was in need of some serious attention. In 1972, the Clean Water Act which regulated the emission of pollutants from specific locations, or point sources, (i.e. industrial pipes) into waters of the U.S. was passed by the EPA.



While the quality of our nation’s waters began to improve drastically, polluted water bodies still existed. As was discovered, preventing pollution from point sources was not enough to ensure clean water. This is because many pollutants enter our waterways indirectly as run-off from impervious surfaces. When these nonpoint pollutants flow through our stormwater systems and out into our rivers and lakes they degrade the quality of our waterways. According to the EPA “13% of impaired rivers, 21% of impaired lake acres and 45% of impaired estuaries are affected by urban/suburban storm water runoff”.

Whether the nonpoint source pollution is sediment runoff from a construction site, or pesticide runoff from a corn field, it impairs the quality of our waterways and thus the habitat and the resources within that habitat that many animals rely on for survival.

In 1990, the EPA acknowledged that nonpoint source pollution needed to be controlled just as much as point source pollution. They initiated the National Pollutant Discharge Elimination System (NPDES) Phase I to help decrease the amount of nonpoint source pollution that enters our waterways. In 1999, they strengthened their regulation by initiating NPDES Phase II.

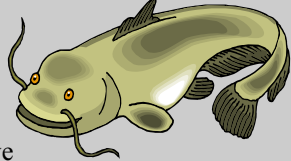
Stricter regulation and increased conservation awareness will help to improve the quality of our waterways. As the health and productivity of our rivers increase, plant and animal populations will also. With the help of wildlife experts, species like the River Otter can be reintroduced to a clean aquatic habitat to reestablish natural populations.

The health of our waterways, and the fate of animals that live in them, is largely dictated by what we as individuals do within our communities to help prevent pollution from entering our storm water systems, rivers, and streams. (Turn to page 5 to see what you can do this winter to help prevent pollution from entering our waterways.)

# 2004 Spring Fish Sale

It is time for the 2004 Geauga SWCD Spring Fish Sale! We are currently taking orders for fingerling-size largemouth bass, channel catfish, bluegill/sunfish mix, minnows, and white amurs. We are also offering a pond safety kit, which includes a 20 inch ring buoy and throw line bag.

Orders must be picked up at the specified time. **The spring pick-up date is April 13, 2004.** Customers with last names beginning with A through L, please arrive between 1:00 and 2:15 pm. Those with last names beginning with M through Z can arrive between 2:15 and 3:30 pm. **Pick-up will be at the Geauga County Fairgrounds on the midway.** There will be no refunds for orders not picked up at the specified time.



Payment must be received with your form to guarantee your order. Make checks payable to **Geauga SWCD**. **Deadline for orders is April 9, 2004**; the minimum order is \$20. You will be reminded by post card approximately one week before pick-up day.

On pick-up day, please bring a clean container of your own pond water (well water or city water is not acceptable). Bring one 5-gallon bucket per 50 fish ordered. For white amur, bring one 5-gallon bucket for every two fish ordered. For all fish, line each container with an UNSCENTED, HEAVY DUTY garbage bag, and fill containers 3/4 full with water (no more, no less!)

## Calculating Pond Size:

When stocking your pond with fish, you should know both surface area and volume of water that your pond holds.

### Determining Surface Acreage of Rectangular Ponds:

The surface acreage equals the length in feet, times the width in feet, divided by 43,560. You can usually regard an irregular shaped pond as a rectangle or square and compute the area from straight boundary lines, which are about equal to your actual shoreline.

### If Your Pond is Circular:

Measure the total distance in feet around the outer edge. Multiply this number by itself, and then divide by 547,390. Your answer will equal the surface acreage of your pond.

**Recommended Stocking Rates** of fingerling-size fish for new or renovated ponds (*number of fish to stock per acre*):

Bass	Bluegill	Catfish	Minnows
100	400-500	100	500-1000

### Stocking White Amur:

White amur are primarily used for controlling vegetation such as Milfoil, Marsh Grass, Pondweed, and Naiad. Stocking suggestions:

% of Vegetative Cover	# of Amur per Acre
0-20%	2 amur
20-30%	10 amur
40-60%	15 amur
Over 60%	20 amur



## 2004 Spring Fish Sale Order Form

Name \_\_\_\_\_ Phone # (H) \_\_\_\_\_ (W) \_\_\_\_\_

Address \_\_\_\_\_

<u>Quantity</u>		<u>\$\$ Amount</u>
_____	2"-4" Largemouth Bass	@ \$ .65 each = \$ _____
_____	2"-4" Bluegill/Sunfish Mix	@ \$ .65 each = \$ _____
_____	4"-6" Channel Catfish	@ \$ .65 each = \$ _____
_____	9"-11" White Amur	@ \$11.00 each = \$ _____
_____	Fathead Minnows	@ \$5.00 per 100 = \$ _____
_____	Pond Safety Kit (includes 20" buoy and throw line bag)	@ \$50.00 each = \$ _____

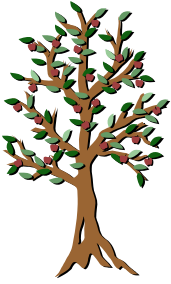
**Total =**

**\$ \_\_\_\_\_**

Make checks payable to  
**Geauga SWCD** and  
mail by April 9, 2004  
to:  
**Geauga SWCD**  
**PO Box 410**  
**Burton, Ohio 44021**

**\*\*This information is available at [www.geaugaswcd.com](http://www.geaugaswcd.com)\*\***

## 2004 Annual Tree Seedling Sale



**Pkt. A - WHITE PINE:** (25) 3-year seedlings. (6"-14") Fast growing. One of the best timber species. Excellent for windbreaks or hedges. Very good ornamental or Christmas tree. Long, soft needles.

**Pkt. B - NORWAY SPRUCE:** (25) 3-year seedlings. (8"-15") Fast growing up to 75 ft. Dense, dark green needles never get longer than 1". Thrives well in average soil conditions, but

prefers moisture to maintain its color. Branches droop gracefully as tree matures, making this a very attractive ornamental.

**Pkt. C - SCOTCH PINE:** (25) 3-year seedlings. (12"-24") Will produce a premium Christmas tree. Deep blue-green color year around, good needle retention, disease resistant. Fast, straight symmetrical growth, compact growth habit, requiring minimum shearing.

**Pkt. D - BLUE SPRUCE:** (10) 3-year seedlings. (8-18") grows to 100 ft. Color varies from blue-green to silvery-blue. 1" stiff needles. Ordinary soil, average moisture. Full sun.

**Pkt. E - DWARF ALBERTA SPRUCE:** (2) Shipped in plastic pots. A dwarf pyramidal evergreen. Densely set light green needles are 1/4-1/2 inch long. Very light, compact growth habit. Slow growing, about 2-4 inches per year, to a mature height of eight feet. A good specimen tree.

**Pkt. F - WILD BLACK CHERRY:** (5) 2-year seedlings. (12"-24") Grows to 60'. Dense foliage with green lustrous leaves, single white flowers in late May producing black cherries in August. Fruit is used in making cherry liqueurs. Grows best in rich, deep moist soil. Highly prized in furniture making and is an excellent firewood. Fruit provides food for many small animals.

**Pkt. G - WINTERBERRY HOLLY:** (5) 2-year seedlings. (12"-18") Height and spread 6-12 feet. One of the best deciduous plants for fall and winter color. Female plants produce bright red berries in early fall while leaves are still green. Berried stems are often used in seasonal dried arrangements. Likes acid soil, will tolerate wet, swampy conditions. Plant at least 5 to ensure pollination.

**Pkt. H - WHITE OAK:** (5) 2-year seedlings. (6"-12") Grows to 50 - 80 ft. Dense foliage is bluish-green, to reddish-brown in autumn. Grows best in a deep, loamy, well-drained soil. The most prolific lumber oak in the Northern Hemisphere. Tree from which the phrase "Mighty Oak" was coined. Good tolerance of highway salt.

**Pkt. I - PAPER WHITE BIRCH:** (5) 3-year seedlings. (1'-3') Grows to 50-70 feet. Most popular birch for ornamental use because of its good foliage, fall color and white bark. Can tolerate wet conditions. It is less susceptible to insects and disease. Bark should turn white in 4-6 yrs. Plant 3 to 5 seedlings together to create a clump.

**Pkt. J - OLD FASHIONED LILAC:** (5) 2-year seedlings. (10"-18") Dense, vigorous growth to 15 ft. Spread: 6-10 ft. Masses of very fragrant, light lavender flowers in late spring. Old flowers should be cut off as soon as flowers fade. Makes a wonderful flowing screen, space 6 feet apart.

**Pkt. K & L - STD. RHODODENDRON:** (2) Shipped in 3" pots. Mature height: 6'-10'; spread: 5'-8'. Leaves are dark, lustrous green all year. Prune off long shoots once yearly, immediately after blooming. Plant in good, well-drained soil. Full sun.

**Pkt. M - WHITE DOGWOOD:** (5) 2-year seedlings. (1'-2') Grows to 40 ft. Dense lustrous, green foliage, turning bright scarlet in the fall. Bright red berries in clusters in the fall are food for birds. Does best in rich, moist soil, but is known to grow well in average well-drained soil.

**Pkt. N - BURNING BUSH:** (2) 2-year seedlings. Shipped in 3" pots. Height: 6-8'; spread: 3-4'. Dark green leaves, spring through summer, turn bright, clear red in fall. Excellent hedge plant, space 4 ft. apart. Growth is dense, compact and needs practically no pruning. Ordinary to good soil. Average moisture. Has best fall color in full sun.

**Pkt. O - EASTERN REDBUD:** (5) 3-year seedlings. (12"-18") Height 20-30'; spread: 25-35'. Flowers are perfect reddish purple in bud, opening to a rosy pink with purplish tinge in early spring. Large, dark green, heart-shaped leaves 3-5" long and wide.

**Pkt. P - BUTTONBUSH:** (2) Shipped in pots. Mature height: 5-12 ft.; spread: 5-8 ft. Fragrant, creamy white flowers in July and August that look like powder puffs. Nutlet type fruits follow, hang on well into winter. Leaves are bright, glossy green. Definitely a wetland shrub. Thrives in wet, swampy conditions, low-lying areas, around bogs and ponds.

**Pkt. Q - ENGLISH IVY:** (50/Bundle) Height 6-8" when used as a ground cover, can climb to 90' as a vine. Rich dark green, glossy, three-lobed leaves make dense covering. Thrives in any good soil - is evergreen the year around. Space 6" apart.

**Pkt. R - PACHYSANDRA:** (50/Bundle) Grows in sun or shade, to a uniform height of 6-12". A fine evergreen ground cover. Hardy, 1-yr. transplants should cover in two years with a 6" spacing. Water liberally.

**Pkt. S - HYBRID POND LILIES:** Easy to maintain, Plant between 1 1/2' to 3' deep in shallow water. Full sun. Won't tolerate heavy chemicals and must be protected from white amurs.

**RAIN BARREL:** This is newly created by the GSWCD staff. Water your garden with rainwater. The capacity of the recycled polyethylene barrel is approximately 50 gallons. It has a mesh top so you can place it under your downspout to catch rainwater. It comes with a hose attachment at the bottom.

# 2004 Tree Seedling Sale Order Form

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

TELEPHONE (Day) \_\_\_\_\_ (Evening) \_\_\_\_\_

_____ Pkt. A	<b>(White Pine) 6"-14"</b>	<b>(25) seedlings/packet</b>	<b>\$18.00 ea = \$</b> _____
_____ Pkt. B	<b>(Norway Spruce) 10"-20"</b>	(25) seedlings/packet	\$16.00 ea. = \$ _____
_____ Pkt. C	<b>(Scotch Pine) 12"-24"</b>	<b>(25) seedlings/packet</b>	<b>\$18.00 ea. = \$</b> _____
_____ Pkt. D	<b>(Blue Spruce) 8"-18"</b>	(10) seedlings/packet	\$10.00 ea. = \$ _____
_____ Pkt. E	<b>(Dwarf Albert Spruce) 2"-6"</b>	<b>(2) potted seedlings/packet</b>	<b>\$ 6.00 ea. = \$</b> _____
_____ Pkt. F	<b>(Wild Black Cherry) 12"-24"</b>	(5) seedlings/packet	\$ 8.00 ea. = \$ _____
_____ Pkt. G	<b>(Winterberry Holly) 1'-2'</b>	<b>(5) seedlings/packet</b>	<b>\$ 8.00 ea. = \$</b> _____
_____ Pkt. H	<b>(White Oak) 8"-12"</b>	(5) seedlings/packet	\$ 6.00 ea. = \$ _____
_____ Pkt. I	<b>(Paper White Birch) 1'-3'</b>	<b>(5) seedlings/packet</b>	<b>\$10.00 ea. = \$</b> _____
_____ Pkt. J	<b>(Old Fashioned Lilac) 10"-18"</b>	(5) seedlings/packet	\$ 6.00 ea. = \$ _____
_____ Pkt. K	<b>(Rhododendron) - DK. PURPLE</b>	<b>(2) seedlings/packet</b>	<b>\$ 8.00 ea. = \$</b> _____
_____ Pkt. L	<b>(Rhododendron) - PINK</b>	(2) seedlings/packet	\$ 8.00 ea. = \$ _____
_____ Pkt. M	<b>(White Dogwood) 1'-2'</b>	<b>(5) seedlings/packet</b>	<b>\$10.00 ea. = \$</b> _____
_____ Pkt. N	<b>(Burning Bush) 4"-6"</b>	(2) potted seedlings/packet	\$ 6.00 ea. = \$ _____
_____ Pkt. O	<b>(Eastern Redbud) 12"-18"</b>	<b>(5) seedlings/packet</b>	<b>\$12.00 ea. = \$</b> _____
_____ Pkt. P	<b>(Buttonbush) 6"-12"</b>	(2) potted seedlings/packet	\$ 8.00 ea. = \$ _____
_____ Pkt. Q	<b>(English Ivy)</b>	<b>(50) cuttings/packet</b>	<b>\$15.00 ea. = \$</b> _____
_____ Pkt. R	<b>(Pachysandra)</b>	(50) cuttings/packet	\$15.00 ea. = \$ _____
_____ Pkt. S	<b>(Hybrid Pond Lilies)</b>	<b>(1) bulb/packet</b>	<b>\$12.00 ea. = \$</b> _____
_____	Apricot _____ Pink _____	White _____	Red _____ Yellow _____

_____ <b>Bat Box</b>	<b>(Standard/Single Chamber)</b>	<b>(Cedar)</b>	<b>\$25.00 ea. = \$</b> _____
_____ <b>Bluebird Box</b>	<b>(Standard Style)</b>	(Cedar)	\$12.00 ea. = \$ _____
_____ <b>Bluebird Box</b>	<b>(Peterson Style)</b>	<b>(Cedar)</b>	<b>\$15.00 ea. = \$</b> _____
_____ <b>Wren Box</b>		(Cedar)	\$10.00 ea. = \$ _____
_____ <b>Butterfly Box</b>		<b>(Cedar)</b>	<b>\$20.00 ea. = \$</b> _____
_____ <b>Robin Nesting Shelf</b>		(Cedar)	\$ 8.00 ea. = \$ _____
_____ <b>Roosting Box</b>		<b>(Cedar)</b>	<b>\$14.00 ea. = \$</b> _____
_____ <b>Rain Barrel</b>		(Polyethylene)	\$55.00 ea. = \$ _____

Total ..... \$ \_\_\_\_\_



## Ordering Instructions

Please fill out the order form listed above and mail check or money order payable to  
**Geauga SWCD**

**PO Box 410, Burton, OH 44021**

**PAYMENT MUST ACCOMPANY ORDER!**

1. Packets are available for pick-up on Friday, April 16, (9:00 a.m. – 4:00 p.m.) or Saturday, April 17, (9:00 a.m. – 12:00 noon)

**NOTE - Hybrid Pond Lily Pick-up:** Second or third week of MAY, depending on the weather. You will be notified of specific date and time.

2. Orders are filled on a first come, first serve basis. We reserve the right to make substitutions if necessary.
3. **Deadline for ordering is March 22, 2004.** Notices will be mailed a week before pick-up.
4. Seedlings come bare rooted, packed in sphagnum moss or dipped into root gel.
5. We are not responsible for packets not picked up on time.
6. Planting instructions are available at pick up time.

Proceeds from the 2004 Tree Packet Program are used to fund the Geauga Outdoor Education Grant Program for local schools. Call 440/834-1122 for further information.



### **NPDES Phase II Corner: Winter Stormwater Pollution Solutions**

Stormwater runoff occurs when precipitation from rain or snowmelt flows over the ground.

Impervious surfaces like driveways, sidewalks, and streets prevent stormwater from naturally soaking into the ground. Because the ground will be frozen over the next few months it will also act as an impervious surface, unable to perform as a natural filtration system. While run-off may be at a halt due to frigid weather conditions, when the snow melts, the pollution will be carried into our stormwater system, rivers, and lakes.

**There are a number of ways you can help prevent storm water pollution this winter:**

**Road Salt Alternatives:** Road salt (NaCl) is an effective and affordable way to melt ice on our roadways. Unfortunately, our environment is not well adapted to the excessive amounts of salt applied each winter. When the snow melts, the salt contaminates our ground and surface water, which has detrimental effects on plants and animals, as well as the quality of our drinking water.

Potassium Acetate (KA) is an alternative to road salt and is just as effective yet less harmful to our native flora and fauna. While KA is not a feasible alternative for de-icing extensive amounts of roadway due to its cost, it is a feasible alternative for an individual seeking to de-ice a front walkway or driveway. If you would like more information about environmentally friendly de-icers, please contact Ted Leslie of Syntech Products at 1-800-537-0288.

**No Garage Rinsing:** While it is tempting to take out the hose and spray the gray sludge and salt off of your car and out of your garage on a relatively warm winter day, this is discouraged. The residue left from de-icing materials, oil, gas, and a plethora of other pollutants that ooze from your car, often end up on the garage floor. You should be aware of where the water flows as you rinse out your garage. If your garage runoff does not empty into a stormwater drain, ditch, river, or lake, pollutants are less likely to enter the water system. However, if it does, you are flushing pollutants from your garage right into the stormwater system. This is not healthy for plants, animals, or people who need this water for survival.

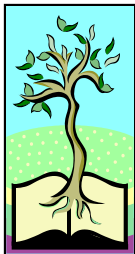
**Don't Spread Manure** - There are two good reasons not to spread manure as fertilizer during the winter. First of all, you are wasting energy and resources. When the ground is frozen, manure does not decompose and its nutrients are not absorbed into the soil; therefore, it does nothing to benefit your soil. Secondly, because the manure does not break down and become one with your soil, it sits on top and is vulnerable to being swept away by the rain, and right into our stormwater systems, when it does warm up outside.

**Construction site BMP's** – Just because sediment is covered by snow doesn't mean it isn't there! You still need to maintain and abide by all the Best Management Practices established by the Geauga Soil and Water Conservation District. Sediment runoff is a major pollutant of our waterways. It alters the amount of light, oxygen, and chemical compounds of our streams and rivers, which is detrimental to aquatic life. When the snow melts, the sediment from poorly managed construction sites will inevitably enter our stormwater system and waterways.

### **GSWCD NEWS...**

#### **Summer Education Workshop Preview**

This summer the Lake and Geauga SWCDs will be offering an excellent opportunity for educators. A workshop titled "*Wonders of Watersheds*" will be held June 21-25, 2004. Each day of the workshop will highlight various aspects of the watersheds in Lake and Geauga Counties. Keep an eye out workshop details in the spring edition of the Geaugrapher or contact Annie Rzepka, Public Education Specialist (440) 834-1122.



#### **New Education Specialist at Geauga SWCD!**

Help welcome Annie Rzepka to Geauga SWCD—she started as the new education specialist in November 2003. Annie was an Interpretive Naturalist at Lake Metroparks before she decided to join the soil and water world. Congratulations to Annie and welcome aboard!!

**New Tree Sale Item!!** - Impress your friends with your conservation dedication!! Conserve your water and resources this summer by using rain water to water your plants. Geauga SWCD has added a new item to their tree sale packet to help you do this, a rain barrel. This fifty gallon recycled polyethylene container with hose attachment can be placed under your downspout to collect rain and used to water your garden.

### Urban Stormwater Specialist Update

Sekhar Gorla began working with the Geauga Soil and Water Conservation District in late July under an Urban Stormwater Specialist grant supported by the Geauga County Commissioners and Engineer, Bainbridge Township, Chester Township, Auburn Township, Russell Township and South Russell Village. One of his responsibilities is to assist these communities in complying with Ohio EPA's NPDES Phase II requirements. The following is a list of accomplishments achieved by Mr. Gorla since his employment began at Geauga Soil and Water:

- Delineated Chagrin watershed into small sub watersheds
- Established a naming convention to be followed for streams, tributaries and outfall numbering
- Modified Comprehensive Outfall Database (COD) created by Northeast Ohio Regional Sewer District to meet Geauga County specific requirements
- Identified and numbered outfalls to the streams in three sub watersheds (Linton Creek, Aurora East Branch, Aurora west Branch) and obtained coordinates for these outfalls
- Entered outfall data for two sub watersheds (Linton Creek, Aurora East Branch) into the COD program
- Obtained hydrography shape files for each township from Auditor's office and added outfall layer to show the outfalls on GIS map.
- Developed a map of existing stormwater basins based on historical records and field visits. This stormwater basin map was developed using Arc View GIS and is regularly being updated, as new stormwater basin information is available.
- Researched possible alternate structural and non-structural measures to control stormwater runoff.

### 2004 Supervisors Elected at Annual Meeting

The District would like to thank all who attended the District's 59th Annual Meeting. Ninety individuals attended, and everyone enjoyed a delicious meal prepared by Roby Lee's of Newton Falls. Conservation Bingo was an evening highlight.

This year, two incumbent board members were reelected at the Annual Meeting, Bob Lausin and Ken Folsom. Ken Folsom will be Board Chairman and Bob Lausin will assume the role of Board Secretary. They will begin their three-year terms on January 1, 2004.

The returning board members will assume different responsibilities than they had in their previous term. Linda Henry will be Vice Chair. Kevin O'Reilly will assume the role of Treasurer and Penny Timmons will be Fiscal Agent. The District would like to congratulate all the returning board members and wish them good luck!!

### **What is NPDES Phase II and how do I ensure a construction site complies with local county Water Management and Sediment Control Regulations?**

The Geauga SWCD will be hosting a workshop to cover proper Best Management Practice (BMP) selection, installation, and management. The workshop is designed to give zoning inspectors, township/village officials, contractors, developers, and engineers a working knowledge of the BMP's required on a construction site and how to determine if they are properly functioning. The workshop will also provide a detailed look at the newly proposed Geauga County Water Management and Sediment Control Regulations and how to ensure compliance with these regulations. In addition to local requirements, a detailed overview of the Ohio EPA NPDES Phase II Program and Construction General Permit requirements will be reviewed to ensure everyone's awareness of their responsibilities under this permit.

#### **See below for dates of workshops:**

#### **Workshop 1: (For zoning inspectors and local officials ONLY)**

Date: Tuesday - March 23, 2004

Time: 10 am – 3 pm

#### **Workshop 2: (For contractors, consulting engineers, developers, builders, and any other individuals involved with construction)**

Date: Wednesday- March 24, 2004

Time: 10 am – 3 pm

Fee for either workshop is \$25 and includes light refreshments, lunch and workshop materials/handouts

Workshop will be held at the Geauga SWCD – Patterson Center basement, 14269 Claridon Troy, Burton, Ohio

If you are interested in attending either workshop, please call 440-834-1122 for reservations and more information.

## Snow Appreciation

*"How full of creative genius is the air in which these are generated!  
I should hardly admire them more if real stars  
fell and lodged on my coat."*

*--Henry David Thoreau, 1856*

Winter has definitely arrived. Frigid temperatures and snow are part of our contract with Mother Nature during this time of year. Lack of available resources and cold temperatures during these few months make it especially hard for many organisms to survive. For the many plants and animals that are forced to stay and endure the cold winter temperatures, snow ensures their survival. This is because snow forms an insulating layer over the ground. The top layer of snow (the newly fallen snow) is composed of loosely lying, sharp ice crystals. The next layer is the firm. The firm is composed of snow flakes that are undergoing deconstructive metamorphosis (aging). As the snow flakes age they become more rounded and lie more closely together than the newly fallen snow. The final layer of snow is called the depth hoare. The warmth of the ground and the coolness of the snow combine and create a water vapor that reforms the new, loosely arranged snow crystals that make up the depth hoare. There is an area called the Subnivean Air Space that lies underneath the physical protective barrier of these many layers of snow. This one inch space between the snow and the ground can be up to 25° warmer than the outside air. The warmth trapped in by the snow cover protects dormant plants, insects, and small mammals from freezing to death in the blistering winter wind. In addition, snow cover provides protection for these organisms against predators because they can move about in the Subnivean Air Space unseen.

While snow is covering the roads and hindering our commutes to work, it is also providing shelter for many plants and animals who are patiently waiting for spring to arrive.

### Winter Weather Complicates Manure Application

Protecting water quality would be a lot easier if farmers never needed to apply manure when fields are frozen or covered with snow. But the fact is, some farmers don't have enough storage capacity to get through the winter. Sometimes, even farmers with storage facilities need to apply manure in the winter because wet fall weather or other problems delayed application.

Unfortunately, uncooperative winter weather can lead to pollution, even for farmers who follow winter manure application guidelines. Last winter for example, a quick thaw led to a rash of pollution complaints in early March. Manure applied earlier in the winter had remained frozen on fields for weeks or even months, but after the thaw surface flow carried it into streams.

To guard against such problems, the Natural Resources Conservation Service has revised the standard for application of manure on frozen and snow-covered soils. The new standard will significantly reduce the risk of pollution problems, but winter application can still be risky.

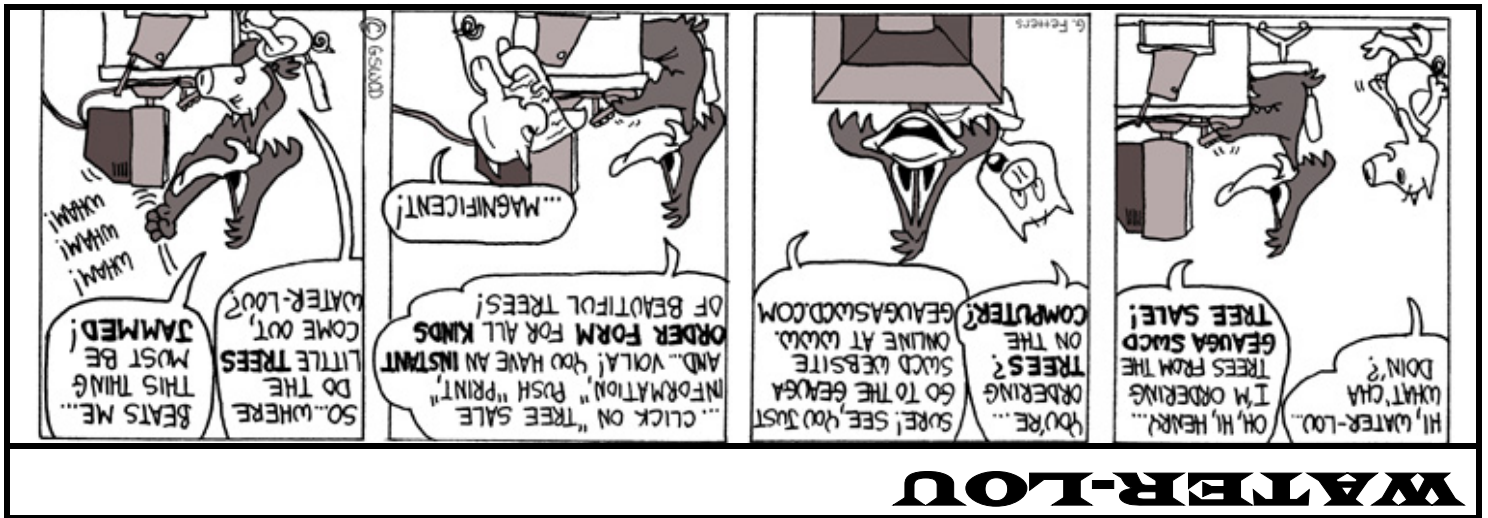
For some farmers, adding storage capacity would help. Others might need to manage application more carefully. For example, farmers might adjust crop rotations to open up application sites earlier in the fall.

Those who must apply manure in the winter might reserve fields farthest from waterways for winter application. Staking out application areas ahead of time could also make it easier to meet application criteria.

The new standard includes six criteria and all six must be followed to comply with the standard. The requirements include a 200-foot setback from waterways and streams, at least 90 percent surface residue cover, and specific application rate limits depending on manure moisture content. Manure should not be applied on more than 20 contiguous acres and additional criteria apply for fields with slopes greater than six percent.

Although some other states have prohibited manure application to frozen or snow-covered ground, it's still permitted under very careful management in Ohio. To protect this option, farmers need to guard water quality by minimizing winter application and by following the standard when winter application is unavoidable. Geauga SWCD can offer suggestions to help you through the process.

For more information about the new application criteria, or other manure management issues, contact Geauga SWCD at (440) 834-1122.



# WATER-LOU

NONPROFIT ORG.  
 U.S. POSTAGE PAID  
 BURTON OH 44021  
 PERMIT # 07

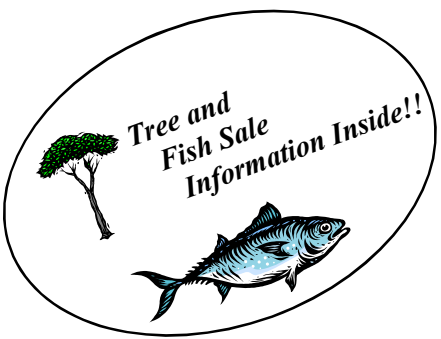
**Geauga Soil and Water Conservation District**  
 14269 Claridon-Troy Rd.  
 PO Box 410, Burton, Ohio 44021  
 440-834-1122  
 Email: gswcd@geugaswcd.com  
 Website: http://www.geugaswcd.com

**Board of Supervisors**  
 Linda Henry  
 Ken Folsom  
 Kevin O'Reilly, Jr.  
 Bob Lausin  
 Penny Timmons

**Associate Supervisors**  
 Mike Fath  
 Marge Jereb  
 Tony Meldon  
 John Ralph  
 Mike Hoskin

**District Staff**  
 Elaine Chittle, Administrative Assistant  
 Ann Rzepka, Public Education Specialist  
 Bob Griesmer, District Technician  
 Carmella Shale, District Engineer/Administrator  
 Nagasekhar Gorla, Urban Storm Water Specialist

**USDA Natural Resources Conservation Service**  
 Al Bonnis, District Conservationist



OR CURRENT RESIDENT

*All services are provided without regard to race, religion, gender, age, physical or mental handicap, national origin, or politics.*