WASHINGTON CONSERVATION DISTRICT
CONSERVATION CONNECTIONS
Summer 2007

Keeping our water clean

In Washington County, we depend on groundwater – for drinking, household use, irrigation and other activities. Protecting our groundwater supply, and making sure it is clean, is a complicated task and involves work to address stormwater and the health of our lakes, wetlands and streams.

"Surface water, stormwater, and groundwater interact," said Washington Conservation District Manager Jay Riggs. "The more people understand this interaction, the more they realize what they can do to protect our water."

In some places, groundwater flows up into our lakes and streams through springs and seeps.

In other areas, porous rock, fissures and other conditions allow surface water and stormwater to percolate back down and recharge the groundwater.

While it can take a century for water to filter through layers of rock to recharge groundwater, Washington County's geology and soil types create areas where water moves much more quickly. For example, the south central region of the county, stretching from Lake Elmo to Cottage Grove, is covered with sandy outwash deposits left by retreating glaciers. This outwash plain's porous rock, and its many wetlands and other closed depressions, make it a key but swift recharge area.

The groundwater that seeps into Square Lake is one of the reasons the lake is so clean and clear.

"We need to be very careful in recharge areas where water at the surface can travel quickly to the groundwater aquifers where we obtain our drinking water," said Amanda Goebel, Senior Environmental Specialist with Washington County Department of Public Health and Environment. "Pollutants washed into a lake, stream or wetland in some parts of Washington County can end up in drinking water supplies within several years. Most of the groundwater in Washington County is recharged locally so it is up to all of us to protect this important resource."

While industrial dumping has been in the news lately, there are many other ways water becomes polluted. Fertilizers or pesticides on lawns, agricultural chemicals, pollutants on streets and driveways and other substances can be washed away during a rainstorm, and travel into the storm sewer system or directly to lakes, streams and wetlands. This polluted stormwater runoff affects the health of surface waters as well as threatening groundwater.

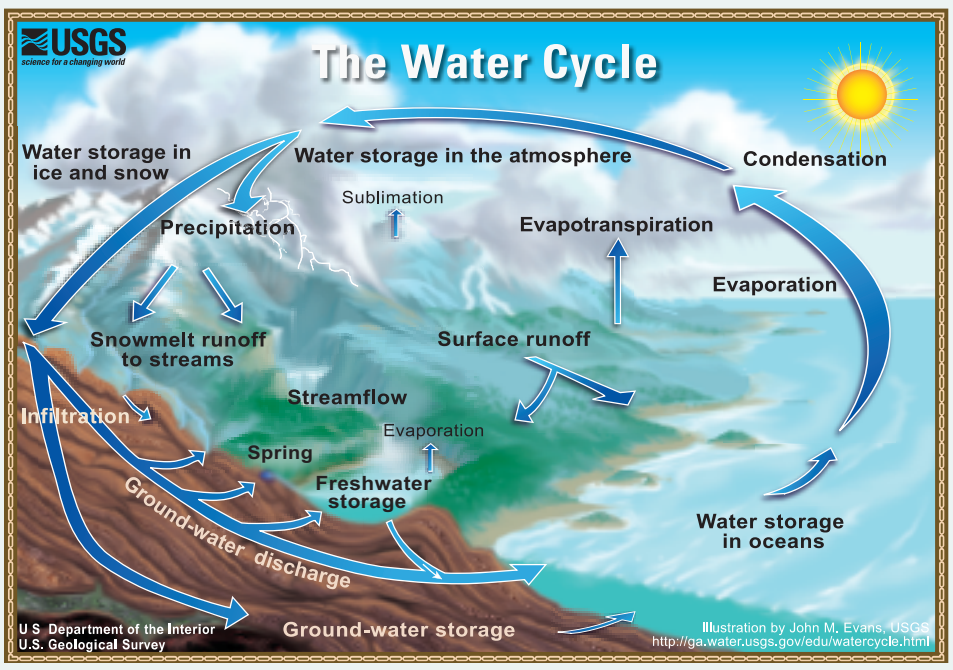
No matter where you live, there are important ways you can help protect our water:

> Keep streets and sidewalks clean:
Leaves, dirt, salt, pet waste and other pollutants are easily washed off of hard surfaces. Be sure to sweep and pick up – and avoid overuse of fertilizers, pesticides and other substances that could damage our water quality.

> Put stormwater to work for you:
Direct the stormwater flowing off of your roof and driveway to planted areas that allow the water to seep naturally into the ground. Specially landscaped raingardens – which include native plants with long roots for filtering pollution – are an increasingly popular option. (Call us to make sure your raingarden is designed properly and that groundwater is protected.) You can also consider installing a rain barrel that collects water from your roof for re-use on plants and gardens.

> Conserve water:
One of the best things you can do for water quality is avoid over-taxing our groundwater supply. Water your lawn only when it's absolutely necessary and direct your sprinkler to avoid "watering" the sidewalk. Purchase water-conserving appliances to save water and money and take other simple steps, such as turning off the water while you are brushing your teeth.

The Washington Conservation District is engaged in a range of projects that are helping make sure our water is clean. For more information, call 651.275.1136 or visit www.mnwcd.org. For additional information on groundwater in Washington County, visit www.co.washington.mn.us/ info_for_residents/environment/groundwater/ or call 651.430.6655.



The groundwater-surface water-stormwater interactions we see in Washington County are part of a global water cycle. This image shows the continuous movement of water on, above and below the surface of the Earth.

DISTRICT NEWS

JOIN US AT THE WASHINGTON COUNTY FAIR, AUGUST 1-5

The Washington Conservation District will be teaming up with the Master Gardeners in Washington County to lead educational tours of the four new raingardens, planted at the fairgrounds in 2006. The twenty-minute tours will take place: August 1-3 at 6p.m., August 4 at 11a.m. and 2p.m., and August 5 at 1p.m.

Also, be sure to stop by our booth for information about local lakes, wetlands and conservation programs and for your chance to win prizes from local nurseries and retailers. The Washington Conservation District and Washington County Water Consortium will have a joint booth in Building D. The raingardens are located just outside the building, across from the Master Gardener demonstration gardens.

MEET OUR NEW STAFF MEMBERS

New **Natural Resource Specialist Rusty Schmidt** is a well-known expert in raingardens and other projects to reduce stormwater runoff pollution. He is co-author of several books including *Plants for Stormwater Design* and an upcoming *BlueThumb Guide on Raingardens*. At Washington Conservation District, Schmidt's work includes designing alternative stormwater facilities, raingardens, natural restorations and shoreline stabilization projects.

Seasonal Water Quality Technician Melissa Baker is assisting the staff's water monitoring group during the busiest time of the year. With academic training in land use and conservation and professional experience in NPDES Compliance Monitoring, she primarily helps with lake level monitoring and sampling of 55 Washington County lakes.

Seasonal GIS Technician Dan Endreson is working with us part time this summer. A student at the University of Minnesota's Humphrey Institute, he is helping us update landcover mapping in the County.

Washington Conservation District Board of Supervisors

Tom Armstrong, District 2
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Louise Smallidge, District 4
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Office Staff

Call us at 651.275.1136 or visit the staff page of our website – www.mnwcd.org – for e-mail addresses.

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Travis Thiel, Water Resource Specialist, ext. 29
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NEW RAINGARDENS AT THE WASHINGTON COUNTY FAIR GROUNDS!

Last year, the Washington Conservation District worked with volunteers to plant new raingardens at the Washington County Fair grounds. Take a look at the results when you come to the fair this year – and check out our booth in Building D for resources on protecting our land and water.

Looking for information about water quality protection and natural resource restoration in Washington County? Feel free to visit us in the Valley Ridge Mall or online at www.mnwcd.org. If you're not already on our mailing list, call 651.275.1136, ext. 27.

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Stillwater students gather water quality data, real world biology experience

Students use long-handled "kick nets" to collect water samples from Brown's Creek and Valley Creek. They transfer the contents of their nets into jars for analysis back in the classroom.

For nearly ten years, Stillwater High School biology students have gathered and analyzed water quality data on Brown's Creek and Valley Creek with assistance from the Washington Conservation District. Their primary focus is to identify and record the presence of macroinvertertebrates – small bugs that have varying levels of tolerance for pollution and can provide important information about water quality.

Placing biology coursework in a meaningful real world context is one of the benefits of the project, according to biology teacher Andy Weaver. "You can say, so what if you sample bugs – what does it mean?" he said. "In this case we can take what we do in biology and attach relevance."

Weaver's class takes samples from Brown's Creek in the same locations twice each year, generating a good source of data about the creek and allowing Weaver to track changes that he shares with his students. Weaver cites a spring "mini flood" of the St. Croix several years ago that covered one of the school's sample sites in sand. There were no bugs that year, but when a new group of students came back to conduct sampling in the area that fall, it was "chock full of bugs" including species that showed signs of good water quality. "That these bugs could recolonize their housing complex after a catastrophic event was a valuable lesson," he said.

The Washington Conservation District helps the student efforts by providing quality control and analysis on the samples and a connection to professionals in the field. Funding for the Stillwater High School stream monitoring project is provided by the Brown's Creek and Valley Branch Watershed Districts. For more information on the Washington Conservation District's work with student groups and other volunteer monitoring, contact Wendy at651.275.1136, ext. 24.

Stonefly Perlodidae are pollution intolerant insects, so their presence is a sign of good water quality.

Wetland regulations to affect more Washington County projects

Wetlands are vitally important to our environment, absorbing water to prevent flooding, cleansing pollutants and providing critical habitat. The Minnesota Wetland Conservation Act was enacted in 1991 to protect the state's wetland resources and achieve "no net loss" of wetlands from development and other activities. The law has undergone periodic review over the years, and effective in May 2007 the law has changed in a way that could affect many projects in Washington County.

A change in Exemption 9 ("De minimis exemption") is particularly notable according to Washington Conservation District Wetland Specialist Jyneen Thatcher. "This exemption sets a threshold where the impact is small enough that it is exempt from mitigation requirements," she said, "and that threshold just got a lot smaller."

Due to the change, any wetland impact greater than 20 square feet now needs review for permit requirements under the state law. This process will likely lead to wetland mitigation requirements for more projects. For example, landowners may need to recreate a wetland on a different part of their property to make up for an alteration, or may need to purchase credits in a wetland bank. Several local watershed districts already require permit reviews for all wetland impacts, which makes the change less drastic in some areas. A second change to the law provides for administrative penalties to be assessed to reimburse regulatory agencies for enforcement proceedings.

If you are considering excavating, draining or filling a wetland, contact Jyneen at 651.275.1136 ext. 25 to determine whether wetland permitting is needed for your project.

Under the new regulations, this wetland alteration would not have been allowed without mitigation.

Projects to protect local trout streams

Generations have enjoyed trying their luck trout fishing in Brown's Creek, Mill Stream and other spring-fed creeks in the St. Croix River valley. But though they are cherished, Washington County's trout streams are a very fragile resource.

"Trout are only found in streams where a major portion of the flow comes from groundwater rather than surface runoff," said Brian Nerbonne, Stream Habitat Specialist for the Minnesota Department of Natural Resources. "Groundwater is filtered and cooled as it travels to the stream, creating ideal conditions for trout. In contrast, surface runoff is much warmer and generally carries with it other pollutants such as silt and excess nutrients that are harmful to trout."

> "If our actions are affecting trout, we are also likely affecting many other species that depend on clean water, including ourselves."

As areas that drain into trout streams are developed, there are more hard surfaces, including roads, rooftops and parking lots. As a result, more stormwater washes into the streams, and less water soaks into the ground. The Washington Conservation District is partnering with local watershed districts and others to help landowners stabilize streambanks, plant buffers of native vegetation and take other actions to improve the health of trout streams and other spring-fed water resources.

The benefits of protecting trout streams go beyond fishing, emphasizes Nerbonne. "Because trout are sensitive to changes in water quality, they serve as excellent indicators of the health of our streams," he said. "If our actions are affecting trout, we are also likely affecting many other species that depend on clean water, including ourselves."