STREAM-LINE

News for residents of the Lester-Amity rivers watershed

Spring 2008

Spring watch in the watershed

Click and learn from LakeSuperiorStreams.org

Spring is the most exciting time to check out your local streams from the comfort of your home computer at LakeSuperiorStreams.org. Spring snowmelt makes for a wet and wild ride to Lake Superior that starts in your neighborhood or backyard. The Web site is designed to help everyone--citizen, student, business owner--understand our local streams and their seasonal changes.

June Kallestad

We don't think of our streets and gutters as part of the beautiful streams in our watershed, but they are. Everything that flows into the gutters, flows directly into the streams.

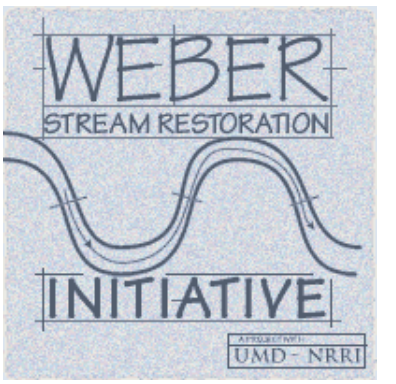
As soon as the threat of frost is gone, probably late March, an electronic water monitoring device will be put back in Amity Creek. It records flow, temperature, turbidity (muddiness), and electrical conductivity (saltiness) and sends the information to LakeSuperiorStreams.org. Watch how well, or not, the streams deal with the transition from low winter flows to spectacular high flows in the spring. How muddy is the water? Where does winter road salt go? Learn more about stream sediments in the "Understanding" section. Why is excess sediment a huge problem in Minnesota streams and rivers?

After the quiet of winter, spring sets activity in motion. It's an especially busy time for the Duluth city crews who gratefully accept help from citizens. Each summer, the Utility Operations employees and Youth Employment Services walk the local streams and remove debris and garbage. Despite the mess they clean up, the crew enjoys a day in Duluth's hidden wilderness areas. (Read more by clicking on "stormwater.")

> Items cleaned out of local streams: tape recorders, shopping carts, pop cans, suit cases, old bus seats, crib mattresses, full bags of garbage, lawn debris.

Homeowners like to clean-up their own yards this time of year. Want to get rid of the sand left from the winter? Do not sweep it back into the street! It goes untreated into the storm drains and straight into the streams, adding to Lester and Amity's sediment impairment. Duluth is holding its annual Spring Sweep during April and May. Sweep up the sand and use it in your garden, or collect it in bags and bring it to one of the drop-off points. It will be recycled and used again next winter. In 2006, Duluth collected about 3 truckloads of sand.

See Spring Watch, page 3



Inside This Issue

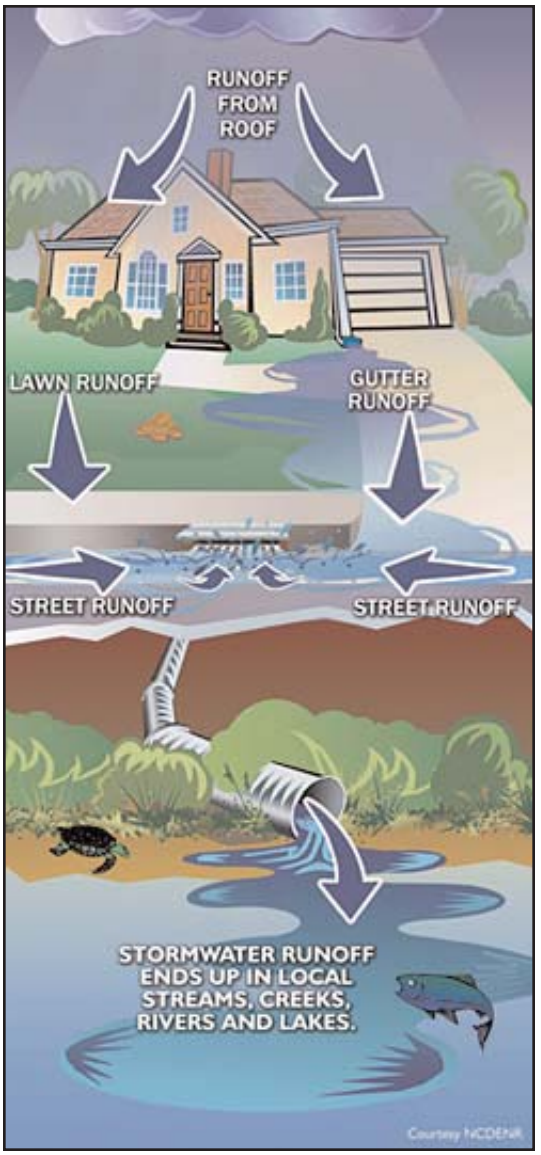
Can you make a difference for cleaner streams?

There was a time when rains that fell near Amity Creek landed on the trees and natural forest litter there, slowly trickling through the soil and downhill to Lake Superior. Today, homeowners have carved neighborhoods into those forests and many have to pump stormwater away from their basements into Amity Creek.

Now when it rains, Amity Creek gets more water than it used to. There are places where the banks are eroding and the dirt is muddying the streams. It's a problem. The City of Duluth realizes that this needs fixing, but they need homeowners to help.

Scientists from UMD's Natural Resources Research Institute have a three-year stormwater research project ready to roll. This spring, they will monitor two similar neighborhoods whose stormwater flows into Amity. They will measure how much water is coming from these neighborhoods. Next year, they'll ask the residents of one neighborhood to participate in efforts to reduce the stormwater coming off their property (See "Beyond rain barrels"). In the study's third year, the scientists will again monitor stormwater flow from the neighborhoods and see if they've successfully reduced the amount of water headed to Amity Creek.

"In new developments, it's easier to build in good stormwater management systems, but this is done less often in established neighborhoods, especially in this climate and with soils like ours," explained Valerie Brady, NRRI aquatic scientist. "It's really important for people to understand their individual impact on our freshwater streams."



How much rain water flows off your roof?

A small house (26 ft x 32 ft, or 832 sq. ft) can produce 516 gallons of water runoff during a one inch rainstorm. That doesn't include the garage roof, driveway, sidewalk, patio or yard!

Beyond Rain Barrels

Catching the rain off your roof and letting it slowly seep into the ground is a great idea, but all roofs collect much more rain than one barrel can hold. How else can you capture and slow down the water from your roof and driveway?

This project will ask homeowners to try solutions such as an underground, bottomless cistern that will collect water runoff and allow it to slowly seep back into the ground. They'll also ask to deepen the swales between the houses so that they can hold more water. If they're not deep enough, the swales simply dump the water into the streets, down the storm drains and into the already-full creek.

And, of course, rain barrels and rain gardens are helpful, too! Anything homeowners can do to reduce the speed and volume of water flowing from their neighborhood will help keep Amity Creek flowing clean and clear into Lake Superior. As an added benefit, extra water will be available to use on lawns and gardens during dry periods.

Can we change our behavior to protect precious water supplies?

The Environmental Protection Agency is funding a pilot project to find out if people are paying attention to the information they get about protecting our fresh water supplies.

During the first year of the stormwater project, folks will be surveyed about their knowledge of water issues. When the project is done, surveys will again be taken to find out if folks learned anything and are making changes.

It all comes down to your water!

Lessons learned from Miller Creek

Cold water trout streams are one of the unique urban experiences of the Duluth area. Our Lester and Amity water systems have challenges-too much sediment, primarily-but neighboring Miller Creek has even more to struggle with, and its trout populations are clearly suffering.

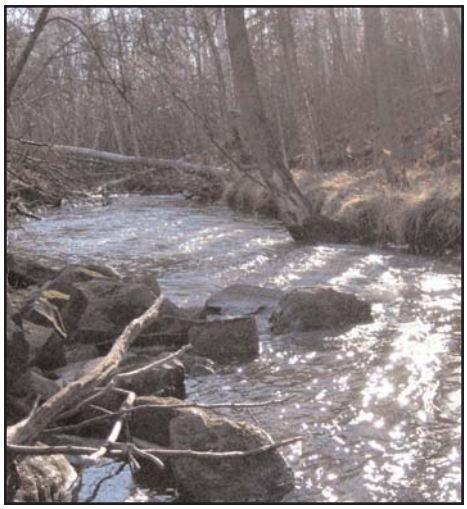
What can we learn from the challenges faced by Miller Creek? Can we keep from making the same mistakes in the Lester-Amity watershed and keep our trout streams healthy for future generations?

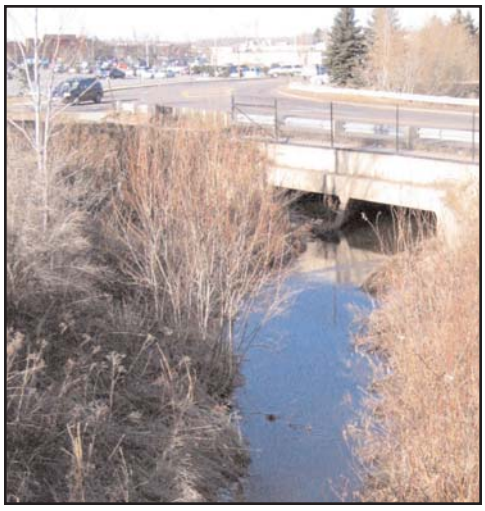
Miller Creek joined the Minnesota Pollution Control Agency's list of impaired streams in 2002. The watershed includes 22 big-box stores, 16 restaurants, four strip malls and the accompanying parking lots, roads and traffic. As the creek winds its way from the headwaters near the airport and behind Miller Hill Mall, it collects significant amounts of dirt, road salt, warm water and polluted runoff before entering the St. Louis River at 21st Avenue West.

Every two to three years, the City of Duluth clears as much as 50 truck loads (500 cubic yards) of sediment from the mouth of Miller Creek.

Temperature is the biggest of Miller Creek's list of impairments, which also affects oxygen levels. This is obviously bad news for cold water species, such as trout. Hot summer asphalt and the removal of shoreline shade plants are thought to be the main culprits. When listed as "impaired" scientists use a the TMDL--Total Maximum Daily Load--process to determine just how much of a particular problem the water system can handle and its main sources.

A TMDL study is now underway for temperature impairments on Miller Creek. Once the "hot spots" are identified and the cause is confirmed, repair efforts can begin. An area with excessive runoff might need a system built into it that will slow and cool the water before it goes into the stream, for example.





This section (left) of Miller Creek looks lovely, but the water temperature is warmer than it should be. Miller Creek catches warm stormwater from roads and parking lots in the mall area (right), stressing the declining trout population. Dirt and winter road salt also run into Miller Creek each spring.

To Dave Zentner, who chaired the Miller Creek Taskforce and the Miller Creek Joint Powers Board, it's a matter of what a city or community wants. Taxes from a new business won't necessarily cover the cost of watershed repair if the development impairs local streams.

"Streams and wetlands have to be treated as desirable amenities that add value to the developments they're near," said Zentner. "Developers have known for a long, long time that to ensure the health of a watershed and biodiversity, you have to follow common sense rules."

Amity Creek is the least urbanized watershed in the Duluth city limits, and there are no plans for malls and superstores. But more housing developments are likely, and according to Minnesota Sea Grant's Jesse Schomberg, lots of small housing units can add up to a mall's worth of impact if wise planning is compromised.

"In both watersheds, the wetlands in the headwaters are vitally important," Schomberg added. "They collect the pollutants and regulate the flow of the water. Miller Creek lost a lot of its wetlands and that's a problem. Maintaining the integrity of wetlands for Amity will help a lot."

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That's sand that did not end up in our streams, clogging the gills of fish and degrading coastal spawning areas. More information is available in the web site's "Citizens and Schools" section.

Ice can be a real problem for aquatic life. A total stream freeze-up in the winter can be deadly, but even anchor ice is a problem. Never heard of it? Learn about this winter stream phenomenon (and watch a cool video) by starting from the "Understanding" section, then click on "Landscape" and scroll down.

LakeSuperiorStreams.org began in 2002 with funding from the Environmental Protection Agency's national EMPACT program. Set up by presidential directive in 1996, EMPACT's mission is buried in its acronymic name: Environmental Monitoring for Public Access and Community Tracking. That is exactly what LakeSuperiorStreams.org is all about.

The Weber Stream Restoration Initiative is a unique collaboration of agencies.The overall goal is to use the best science available to keep the healthy streams clean and restore damaged systems in the Lake Superior watershed. It coordinates with the Regional Stormwater Protection Team.

For more about the western Lake Superior streams and what you can do to protect them visit lakesuperiorstreams.org Click on the Weber Restoration link for more information.

Questions?
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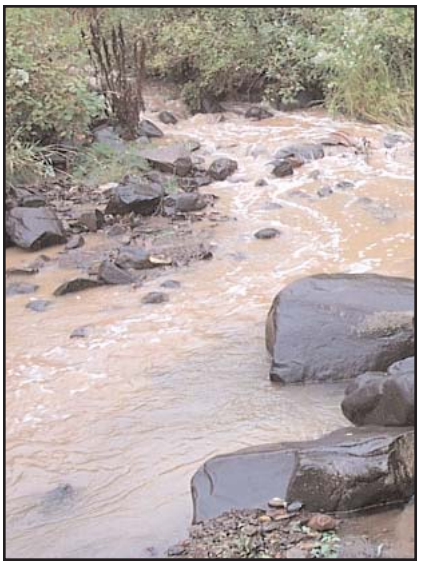
Stream stabilization project to begin

This spring, the Weber Stream Restoration Initiative is working with the City of Duluth to improve a particularly eroded tributary stream in the Lester/Amity watershed. Graves Road historically intersects Occidental Blvd above the first bridge over Amity Creek, and the failing stormwater infrastructure has led to extremely turbid runoff following storm events. The small tributary will receive channel modifications designed to improve flow dynamics of the storm water, modify peak flows, and reduce eroded sediments entering Amity Creek.

A bank stabilization project on Amity Creek will also get underway this spring to demonstrate technologies that reduce cut-bank erosion and improve fish habitat.



This project will combine the efforts of the South St. Louis Soil and Water Conservation District, UMD's Natural Resources Research Institute, the Minnesota Department of Natural Resources and the City of Duluth.

Weber Stream Restoration Initiative
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