

# STREAM-LINE

News for residents of the Lester-Amity rivers watershed

Spring/Summer 2009

## Beach Watch Warnings

*Big spring rains can wash ishy stuff into the water*

It's beach time, but you might want to think twice about going for a swim in Lake Superior after a big rain, according to Heidi Bauman. As the beach monitoring program coordinator for the Minnesota Pollution Control Agency in Duluth, Bauman knows something about beach water quality.

From May through September, 39 public beaches and access points between Duluth and the Canadian border are monitored for *Escherichia coli* (*E. coli*) bacteria, an indicator species used to estimate contamination by other disease-causing pathogens, like bacteria, viruses and parasites.

Swimming, playing, or recreating in contaminated water may result in illnesses such as sore throats, vomiting, fever, headache, sinus infections, stomach-ache and other flu-like symptoms.

Heavy rains move bacteria in stormwater runoff from Duluth's steep hillsides into our Great Lake.

The bigger the rain event, the more runoff, increasing the chance that pollutants are carried from lawns, parks and roads into the streams and lakes.

Since monitoring began in 2003, advisories have been uncommon at most sites and rare for Lake Superior beaches. They are usually associated with a substantial rainstorm and nearby stream. Most advisories have been for just a few harbor sites that have large

*Heavy rains move bacteria in stormwater runoff from Duluth's steep hillsides into our Great Lake.*



Know before you go! Check out [www.mnbeaches.org](http://www.mnbeaches.org) or call the local beach hotline at 218-725-7724 to find out if there are warnings out about your nearby beach.

bird populations.

When the MPCA detects harmful levels of *E. coli* at the beach sites, it posts signs at the affected site(s), sends out email alerts, and updates [www.MNBeaches.org](http://www.MNBeaches.org) -- a Web site created at NRRI to keep the public informed on

beach advisories. Duluthians can also call the Beach Hotline at 218-725-7724 before they pack their beach bag.

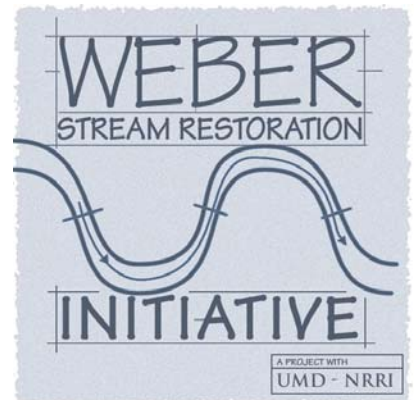
Professors Randall Hicks (UMD), and Michael Sadowsky (UM Twin Cities), along with several graduate students, have found that

waterfowl and wildlife -- especially Canada Geese -- are most often the culprits at beaches within the harbor. But there were also wastewater sources that varied throughout the year and among beaches.

They've also discovered that *E. coli* can survive, reproduce, and form natural



Chris Kleist



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# Hot secrets of the Chester Creek Ponds

By Deserae Hendrickson, Minnesota DNR

Anyone who has been to Chester Bowl has likely enjoyed the open views of Chester Ponds. While the ponds can be scenic and fun to play in, their beauty hides an invisible impact to Chester Creek. The creek is designated as a trout stream, which means the conditions are suitable for trout to live there. The trout species native to most of the streams in the Duluth area is the brook trout.

Brook trout need cold, high quality water year-round to survive. Water temperatures need to stay below

The water then absorbs the sun's energy, quickly heating up, then it flows out of the pond, affecting all of the stream life below it.

Continuous water temperatures are often collected by the Minnesota Department of Natural Resources (MN DNR) on trout streams to pinpoint problem areas where the water is heating up. From 1998 to 2002 Chester Creek showed large increases in temperature as water flowed through the ponds. While temperatures immediately above the ponds were typically very good for trout, water just below the ponds was usually in the stressful range, and frequently spiked up during hot weather into

the lethal range, potentially killing whatever trout might be present. It only gets worse during hot, dry summers.

Because of the temperature extremes, the ponds and lower Chester Creek can no longer be stocked with trout. Upper Chester Creek is still stocked by the MN DNR, but the true potential of the creek cannot be realized without restoring the lower park pond area. The most effective design would include replacing the dammed ponds with about 150 meters of meandering

channel with riffles and pools and abundant shoreline vegetation for shade.

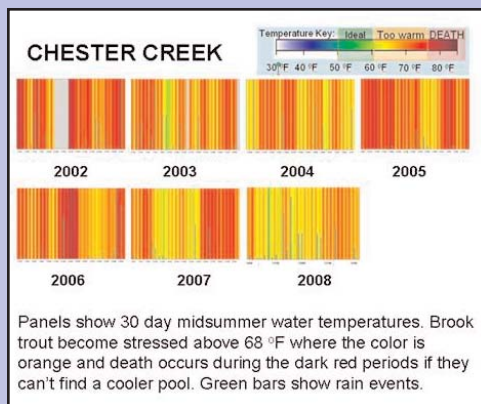
If you or your group is interested in being involved in the potential restoration of lower Chester Creek, please contact Deserae Hendrickson by phone 218-525-0853 extension 201 or e-mail [deserae.hendrickson@dnr.state.mn.us](mailto:deserae.hendrickson@dnr.state.mn.us)

## Beach Watch, from page 1

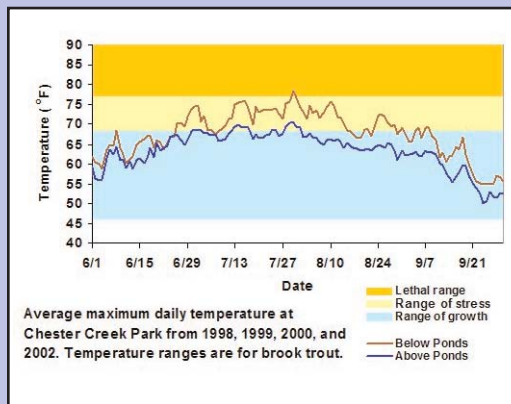
populations in stream and lake sediments, in algae washed up on beaches, on slimy, algae-covered rocks in the lake, and in some fish stomachs.

So far, few of the *E. coli* isolated have been pathogenic strains. The professors pointed to shortcomings in the reliability of *E. coli* as an indicator of human waste and therefore,

risk of illness. They continue to use DNA fingerprinting and other sophisticated techniques to more accurately predict the sources of *E. coli* and risks from exposure. Still, there is little question that waterborne disease is greatly under-reported and storm-water runoff poses additional risks of illness.



Panels show 30 day midsummer water temperatures. Brook trout become stressed above 68 °F where the color is orange and death occurs during the dark red periods if they can't find a cooler pool. Green bars show rain events.



Average maximum daily temperature at Chester Creek Park from 1998, 1999, 2000, and 2002. Temperature ranges are for brook trout.

These graphs show how warm the water can get in midsummer before it flows into the Chester Park ponds. The right graph shows how the ponds can warm the water another 5 °F or more. Add this stress to too much sediment washing in, a few "salt-shocks" in the winter and spring, and low flows in summer and winter. *It's tough to be a city trout!*

77 °F for the trout to survive warm summer periods.

However, temperatures above 68 °F for long periods can stress the fish leading to lack of growth, increased susceptibility to disease, and sometimes death.

While most of Chester Creek can still support brook trout, the lower 1.4 miles of stream are too warm for them, and sadly, much of the prime trout pool habitat lies within this reach. These pools should also be some of the best fishing spots on the stream, but anglers trying their luck below Skyline Parkway will likely be disappointed. So what is causing impairment of this stream for brook trout?

Standing or slow moving water, with little shade to block out sunlight, can heat up very rapidly, especially on hot, clear sunny days. Trees along the water's edge can often provide the equivalent of "sunscreen" for trout streams, keeping the water cool. When a stream is ponded, however, there is no "sunscreen" as the shade of trees can no longer reach most of the pond surface.

## A reserve to preserve: The St. Louis River Estuary

**F**reshwater estuaries occur where river and lake water mix in shallow wetlands near the mouth of a river. They support abundant fish and wildlife, offer recreational opportunities like canoeing and fishing, and contribute to water quality.

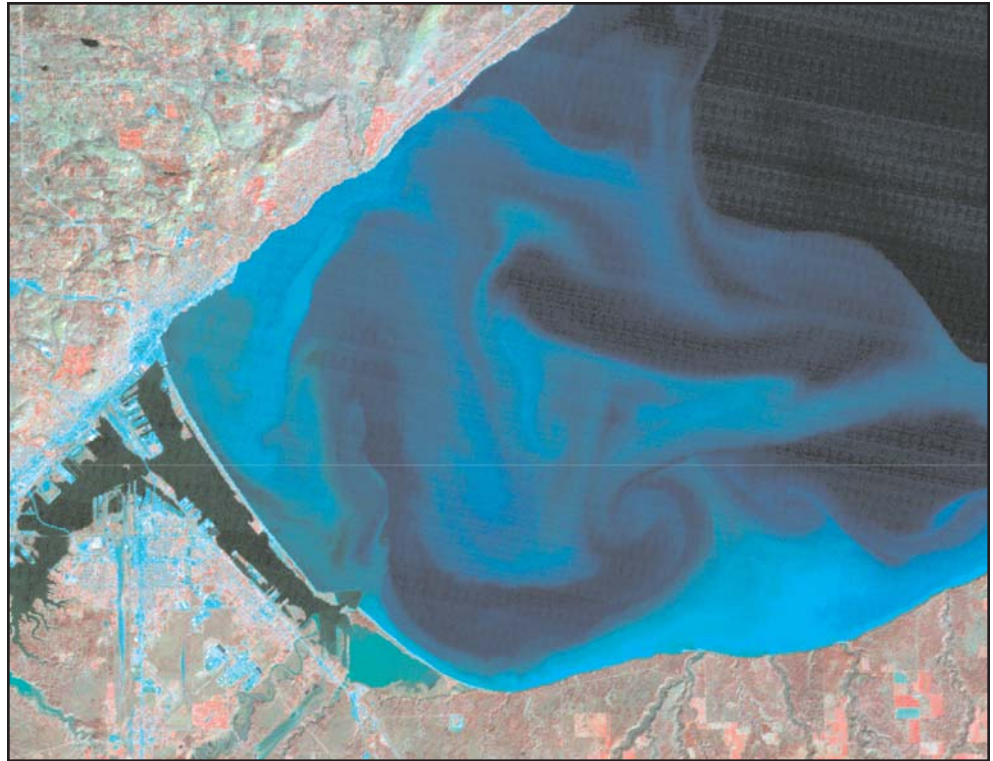
Your Lester River and Amity Creek hit Lake Superior under London Road without an estuary because of the steepness of the stream channel. But it's still a great place to fish.

One of the largest and most important estuaries to Lake Superior is located nearby at the mouth of the St. Louis River. A collaborative effort is underway to designate this estuary as a National Estuarine Research Reserve (NERR) which will lead to knowledge that can be applied to other freshwater estuaries.

"This designation will bring in dollars for research, education and stewardship that we can apply to coastal decision-making for the St. Louis River watershed, Lake Superior, and potentially other coastal areas in the Great Lakes," said Becky Sapper, outreach coordinator at the University of Wisconsin-Extension. "The designation might not occur until 2010, but long-term goals are important."

And the potential funds are significant. Once a state receives NERR designation they can receive as much as \$500,000 from NOAA (National Oceanic and Atmospheric Administration), and the funds must be matched on a 70/30 basis with non-federal money. With support from Governor Doyle, NOAA, state agencies, local stakeholders and citizens, Wisconsin will be the 28th site to join the National Estuarine Research Reserve system.

"Through this process it's become apparent to me that people are really dedicated to their local resources," said Sapper. "The citizen support has been very strong, which is vital. They're the watchdogs, the users, the stewards. It's commitment I've seen across the Lake

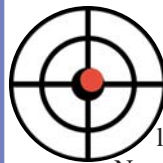


Cool picture, but bad problem -- pollution entering Lake Superior from the St. Louis River. The MPCA is working collaboratively to clean up the problem areas.

Superior basin."

Some of the problems this proposed designation hopes to fix are similar to what is impairing the Lester-Amity system: loss of habitat, increased sedimentation that degrades water quality. As for Lester-Amity, it's what happens on land that impacts the river, like development, forestry practices, and shoreland disturbance, etc.

A management plan with a vision, a mission statement and specific goals is being developed with input from Advisory Committees made up of members of the communities with local expertise and interest. The University of Wisconsin-Extension and various partners and citizens, hope that by May 2010 there will be an official Lake Superior National Estuarine Research Reserve.



### Target on pollution

**T**he industrial history of the Duluth harbor has left behind a polluted legacy.

Now, the Minnesota Pollution Control Agency is defining what needs to be done to reverse some of that mess, and then figure out "how clean is clean?"

"Our biggest priority is finding ways to reverse the river's industrial pollution legacy," said Marc Hershfield, Area of Concern Coordinator for the MPCA. "Then we can remediate wildlife habitat and work with landowners so they can make similar progress on their segments of the river."

In the late 1980s, 43 areas on the Great Lakes were identified as Areas of Concern and remedial actions were taken to restore,

preserve and protect them. Today, nine targets are listed to fix specific impairments, such as degraded fish and wildlife populations, and fish consumption advisories.

"This is a grass roots effort with the St. Louis River Alliance taking the lead with citizen input," said Hershfield. "Water quality is related to activity on the land and we want to engage people in an awareness of their daily activities."

The Area of Concern boundary goes up the north shore to the Knife River and south into Wisconsin so the Lester/Amity watershed is part of this effort.

"Landowners in a watershed are best positioned to take care of their segment of the river," Hershfield added.

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](http://lakesuperiorstreams.org) Click on the Weber Restoration link for more information.

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## Minnesotans say “yes, indeed”

On November 4, Minnesota voters gave overwhelming approval to increase the state sales tax by 3/8 percent to benefit natural resources and the arts. The tax will be effective July 1 through June 2034.

The official name for this legislative action is the “**Clean Water, Land and Legacy Act.**” One-third of the money is designated to restore and protect water resources, one-third to maintain fish, game and wildlife resources, and one-third divided between parks/trails, and culture/history.

In spite of many distractions and reasons to vote against the tax increase, 56 percent said “yes.” The “yes” votes totaled 1,600,000 -- the largest “yes” vote total of a ballot question on any general election in the history of Minnesota. Even

more than the total popular votes in Minnesota for President Obama!

The state legislature and citizens are now working together to plan a strategy that will make this act work in the best manner possible. The people have spoken and the future dollars are dedicated in the constitution. The money must be used for land, water, wildlife, parks, trails and the arts. Now all involved must make sure the projects are part of a well-defined, outcome-driven and continuously assessed strategy, based on sound science, with transparent reporting.

If all this is done well, that historic November 4 day in 2008 will leave a grand legacy for those yet-to-be-born citizens of Minnesota.

*Dave Zentner  
Izaak Walton League*



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