



**November/December  
2009**

**Fond du Lac  
Environmental  
Program**

**America Recycles  
Day  
November 15th,  
2009**



*Every year, America celebrates recycling on November 15th. Take the pledge to start recycling more at home and at work. Just as important - complete the cycle, buy recycled products when possible!*

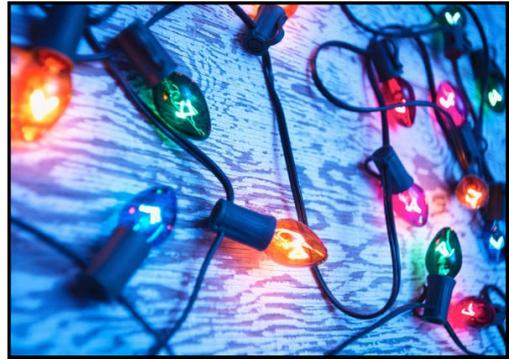
***Don't forget! If you are hosting an event, recycling bins are available—just call Shannon Judd, Environmental Education Outreach Coordinator, at 878-8023.***

**Notice!!  
New FdL Waste Site  
Hours Beginning  
November 1st, 2009**

**Mon - Fri: 7am - 5:30pm**

**Sat - Sun: 8am - 5:30pm**

**Recycle Your Holiday Lights!**



**Frustrated with your strands of holiday lights that will take hours to untangle or don't work due to a few burnt out bulbs?**

**Please don't throw them away!! Bring them to the Fond du Lac Waste Site on University Road and we will recycle them!**

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# Water Program Update

*By Kari Hedin, Watershed Specialist*

## What's the "Flowdown" on Fond du Lac's Water Quality Program?

Wearing waders and punching through a layer of ice in a wetland. Driving a grid pattern on a lake to map it. Standing in the middle of the St. Louis River on a sunny day and gazing into the water at the webs made by caddisfly larvae. Watching swans launch themselves from the surface of a wild rice lake that is ringed by golden tamaracks. Here at the Fond du Lac Office of Water Protection, we love that our work to monitor and protect the waters of the Reservation lets us interact with the remarkable lakes and rivers in the area.

### **Water Quality Monitoring – a Joint Tribal/State Project in 2009**

The Fond du Lac Office of Water Protection has been monitoring the water quality of Reservation lakes and rivers for 10 years. For the most part the water quality in the area is good, but continuous monitoring allows us to pinpoint problems as they're beginning to impact the water, and then take action to manage the problem. We have just finished another successful monitoring season.

We also had the opportunity to partner with the Minnesota Pollution Control Agency (MPCA) this year. The MPCA monitors water quality in all of the state's major watersheds over a 10-year rotating basin. The purpose of such monitoring is to make sure waters in all areas of the state are assessed to determine if they meet standards for uses such as recreation, fishing, and aquatic life. The Fond du Lac Reservation is mostly within the St. Louis River watershed, and this watershed was chosen by the MPCA for monitoring in 2009. We assisted biologists from the MPCA in choosing monitoring sites on the Reservation. Several of our biologists went on field work excursions with state biologists to share our different techniques and skills for collecting aquatic larvae, fish, and water chemistry samples. We are also sharing data from our separate monitoring databases to increase our understanding of the water quality in the St. Louis River watershed.



Joe Martin Lake

### **Lake Mapping, or Driving Back and Forth in a Boat**

Residents around Big Lake stared at us in curiosity as we motored back and forth across the water's surface this summer. No, we weren't looking for a lost fishing rod; we were mapping the bottom of the lake. We have a system called BioSonics that allows us to send sound waves from the water's surface to the bottom of the lake. These sound waves hit the bottom and bounce back up to the receiver. The sound data is then processed and used to determine lake depth and bottom substrate. Such data can be used to assess fish habitat use, lake volume, and lake morphometry (the shape and structure of a lake basin). Since 2008, we have mapped the following Reservation lakes: Lost, Joe Martin, Simian, Third, Big, and West Twin. We have also used the BioSonics unit to help the DNR discover why several shallow lakes in Carlton County are becoming densely populated by a native aquatic plant called water shield.

### **Nutrient Criteria – Combating Pond Scum**

Nutrients are good, right? They are when we eat them in food, but too many nutrients in a lake can cause problems. Fertilizers and septic sewage contain phosphorus, and when this nutrient runs into lakes, it can cause algae populations to explode. The algae grows into stinking slimy mats that suck up a lot of the oxygen in the lake that the fish need to breathe, and this can cause fish kills. So far this hasn't happened on Big Lake, but septic sewer overflows that run into the lake are a big source of extra nutrients for the lake. We are partnering with scientists from Michigan State University to develop nutrient criteria for our lakes. Currently we are compiling data including water chemistry, climate, lake depth and size, land use, geology, vegetation, and more. Michigan State scientists will use our data to construct a predictive model. The model will tell us what the "expected" level of nutrients should be in each lake in the absence of human effects, and these criteria can be used to determine if any of our lakes are impaired because of high nutrient levels. From there we can use a suite of strategies to manage a lake's nutrient levels.

# 'Tis the Season to Be Less Wasteful... by Shannon Judd

Last year at this time I was nearing the edge of my pledge to buy nothing new for a year. Of course, that didn't include toiletries and some things you definitely don't want to buy used, but almost everything else was off limits. Another exception was that you could buy from local artists, and if you HAD to buy something new, at least buy it at a local business. Holidays and birthdays were some of the most difficult times to uphold this pledge, and I faltered slightly a couple times. One thing it did make me realize that holidays seem to be more and more about STUFF. According to the Environmental Protection Agency, Americans produce 25% more trash between Thanksgiving and New Year's than any other time of year. Though it is difficult to avoid completely, there are some ways to make this season less wasteful and save money. Here are a few suggestions:

## **Gift Wrapping**

-  Wrap gifts in something reusable and useful, such as a towel, pillowcase, basket or cake pan
-  Save bows, boxes, tissue paper and wrapping paper, if possible, to use in the future
-  Wrap gifts in a brown paper bag and have kids color Christmas pictures on them; or use comics, magazine pages, be creative!
-  Use toilet paper instead of spendy tissue paper - you may save this one for people who have a sense of humor, but I ran out of used tissue paper last year and could not buy more, so.....

## **Gift Giving**

-  Instead of 'stuff,' give a gift certificate for a massage, concert tickets, food. If someone you know has been wanting to learn to play guitar or learn karate, how about a few months of lessons?
-  Support our community - Buy artwork, crafts, or other products from local artisans or make something yourself!

## **Decorating**

-  String up cranberries or popcorn instead of spending money on garland. Pine cones make great decorations too.
-  Decorate plants and objects you already have rather than buying new knickknacks.
-  Make a homemade gingerbread house - very festive and makes a tasty treat later on!
-  Decorate with other edibles - squash, nut mixes, and candy canes

## **Quillwork Ornaments**

Supplies: Birch bark, porcupine quills, awl, sinew, pattern (optional)

- 1) Take two thin layers of birch bark and cut into equal-sized circles.
- 2) Draw your design lightly with a pencil either free-hand or using a pattern on the bark circle.
- 3) Using the awl, gently poke holes - 2 at a time, along the outline of your drawing and insert one end of a quill in one hole, the other end in the second hole. Repeat until quills cover the outline. Fill in if desired. Tape the ends of the quills to the back of the bark layer.
- 4) Put the two bark circles together and gently poke holes along their perimeter. Thread the sinew through to sew the two circles together. Attach a string to the top to hang your ornament.

# Recycle

Plastic

Newspaper

Cardboard

Magazine Paper



Aluminium

Mixed paper

*Do your part to conserve natural resources and protect the environment for future generations....Recycle.*

*Fond du Lac Waste Site: 878-8069*

## Who's Who?

### Fond du Lac Reservation Environmental Program Staff- (218) 878-8001

Wayne Dupuis - Environmental Program Manager.....	878-8006
Mary Munn - Air Program Coordinator.....	878-8012
Nancy Schuldt - Water Projects Coordinator.....	878-8010
Shannon Judd - Environmental Education Outreach Coordinator.....	878-8023
Russell DuFault - Recycling Coordinator.....	878-8069
Rick Gitar - Water Regulatory Specialist.....	878-8022
Kari Hedin - Watershed Specialist.....	878-8009
Andrea Junker - Environmental Health Specialist.....	878-8011
Tim Krohn - GIS Specialist.....	878-8028
Bill Martineau - Waste Collection Site Supervisor.....	878-8069
Bruno Zagar - Environmental Specialist.....	878-8007
Joy Wiecks - Air Quality Technician.....	878-8008
Dave Smith - Land Records Researcher.....	878-8019