

# Cattail Chronicles

Issues Affecting the Surface Waters of Lake County

Lake County Health Dept. and Community Health Center  
Irene T. Pierce, MSN, Executive Director

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## Road Salt Application Workshops Recently Held in Lake County By: Kathy Paap

In late September, the Lake County Stormwater Management Commission (LCSMC) and the Lake County Health Department – Lakes Management Unit (LCHD-LMU) sponsored two workshops held by Fortin Consulting to educate both public and private road salt applicators on ways to reduce the amount of road salt used on roads, parking lots and sidewalks.

You may be wondering why we should be concerned about road salts at all.

Lake County contains approximately 3,800 miles of roadway, 8,000 acres of parking lots and sidewalks, and 23,517 acres of lakes and streams. The public sector (ie. Division of Transportation, Villages and Townships) has purchased approximately 138,000 tons of road salt for their 2009-2010 deicing programs. This does not include additional purchases by private snow removal firms. Prices for road salt have increased over time and last year the average price ranged between \$125 to \$165/ton. Prices have dropped in 2009 but this price fluctuation could eventually mean increased tax dollars to support the cost of this service. The good news is many of the public agencies are already pursuing or currently using alternatives to road salt or practices to reduce the use of road salt. One such practice

is wetting of road salt. Wetting of road salt can increase the efficiency of salt by jumpstarting the melting process and it causes the material to stick to the surface better. Wetting can allow up to 30 percent less material to be used. This benefits not only the tax payer but also the environment.

Road salt (NaCl) is the primary deicer used on our roads, parking lots and sidewalks so we can travel safely during and after winter storms. Road salt is made up of approximately 60 percent chloride ions (Cl<sup>-</sup>) and 40 percent sodium (Na<sup>+</sup>) ions. Sodium can be trapped in soils, however, chloride stays diluted in water and accumulates in our lakes. Data collected by the LCHD-LMU show that chloride concentrations have increased in Lake County lakes over the past 14 years. One concern about the increased concentrations is a decrease in dissolved oxygen (DO) levels in the lake, which lower the biologic diversity and impact the entire lake. The environmental impact of chlorides is not only an issue in Lake County. Lakes located throughout the “snowbelt” states are also seeing impacts. A lake in Minnesota became uninhabitable below 12 feet due to the accumulation of chloride on bottom of the lake. “So, if you were using your fish

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## For Information Contact:

Lakes Management Unit  
Environmental Health Services  
847- 377- 8030

<http://www.lakecountyiil.gov/Health/want/BeachLakeInfo.htm>



# Cattail Chronicles

## Spotlighting Plants: *Wild Rice (Zizania aquatica L.)*

By: Melissa McGuire

Wild rice is an annual grass that forms dense stands in wetlands across the Great Lakes region of the United States and Canada. Although not closely related to cultivated white rice, it produces a nutritious and nutty grain that is also an important food source for wildlife and migrating waterfowl. In the past wild rice has been referred to as the caviar of all grains and has been a staple for some Native American tribes who still consider it a culturally and economically valuable crop.



To this day, wild rice is harvested by some tribes in the traditional fashion. No mechanical harvesters are used. Instead non-motor boats no longer than 17 feet are propelled through the wetlands using push poles. When gathering the grain, rounded wooden sticks are the tool of choice. One stick is used to bend the plant into the boat while the other stick gently knocks the loose grain into the boat. Since the grain does not ripen at the same rate, plants can be repeatedly harvested throughout the season. The freshly harvested “green” rice is not ready for the table just yet. The grains need to be dried to about 7% moisture, usually by a slow fire, pounded or stomped on to remove the husks and winnowed or tossed to remove the light papery chaff surrounding the grain. The end result is the deliciously nutty grain considered a delicacy by many.

In the 1950’s, efforts were made to cultivate wild rice using dikes in California and Wisconsin. Harvesting of cultivated rice is done by a combine and the plant has been genetically modified in order to survive in these conditions. This is why cultivated wild rice bears little resemblance to lake wild rice in both color and flavor, and is sold at a much cheaper price.

Wondering if wild rice can grow in the Lake County area? The ideal lake habitat for wild rice is water no more than two to three feet deep with flocculent, muddy soil. Due to its shallow roots and the poor soil quality in which it grows, wild rice is subject to uprooting by slight variations in water level, weather and animal disturbance. Damming of waters, changing the direction of flow or the slight draining of a water basin are enough to completely remove wild rice from a previously productive lake. Adding to these complications, wild rice tends to prefer constantly moving waters, resulting in greater chance of uprooting due to changes brought about by weather. Muskrats will eat young plants and carp may also uproot the young plants by thrashing about in the sediment.

In early spring, wild rice seeds will germinate and by mid June, ribbon like leaves can be seen floating on the water’s surface. At this stage wild rice is difficult to identify as it closely resembles the floating leaves of Bur-Reed or Manna Grass. By midsummer though, the stalks emerge from the water and the plant is rarely mistaken due to its unique characteristics. The flower stalks can be 6 to 10 feet tall depending on water depth, with broad flat leaves that are 0.5 to 2 inches wide. The lower flowers of the plant are arranged in a branched, pyramid-like pattern with upper flowers resembling an erect broom. By late August the flowers produce green, rod-shaped grains that ripen at varying rates and can be harvested and processed into edible wild rice. Grain that is not harvested falls into the water and remains dormant until the following spring, repeating the cycle.

The distribution of wild rice has been greatly reduced from its historical range and has virtually disappeared from Southern Michigan, Illinois and Southern Wisconsin where it was once harvested in abundance. Re-establishment of the historical plant beds is difficult because of the plant’s sensitivity to changes in water level, animal predation and the effects of urbanization around the lakes. Wild rice is now only found in abundance in Northern Wisconsin, Northern Minnesota and Canada and has not been reported in Lake County since the early to mid 1960’s.

## Kelly's Corner Kitchen



### Creamy Wild Rice and Chicken Soup

14.5 ounces of cream of mushroom soup  
14.5 ounces of cream of celery soup  
30 ounces of heavy whipping cream

1 cup of chicken chopped  
1 Cup of wild rice cooked  
1 clove of garlic

3 carrots minced  
1 small onion minced  
salt and pepper

1. Sauté garlic, onions, and carrots until tender.
2. Add cream of mushroom soup and celery soup until combined.
3. Add heavy whipping cream, chicken, and wild rice.
4. Season with salt and pepper; heat through.



ANNUAL ILMA CONFERENCE COMES TO NE ILLINOIS



The 25<sup>th</sup> Annual Conference of the

Illinois Lake Management Association

March 3-5, 2010

Holiday Inn Select
1801 Naper Blvd
Naperville, IL 60563

The Illinois Lake Management Association's (ILMA) annual meeting is coming back to north eastern Illinois. Mark you calendar's for March 3-5, 2010. The Holiday Inn Select in Naperville will be the site for the 25<sup>th</sup> annual conference.

As most of you know, the annual ILMA conference rotates to various locations throughout the state. For the past couple years it has been in central Illinois with conferences in Springfield and Peoria. Traditionally, the northern conferences draw the largest crowds and we are hoping this is the case for 2010. Hopefully it will be a short drive for most of you. Everyone who comes to this meeting has something to share and we are sure you will certainly learn something to take home.

This is also an opportunity for you to participate and show others what you have been doing on your lake or within your watershed. The Illinois Lake Management Association is searching for lake organization members and leaders, resource professionals, researchers, students, teachers, and others to submit proposals for educational presentations for the 25<sup>th</sup> Annual Illinois Lake Management Association Conference. Do you have a success story that you think others could learn from? It may be a shoreline restoration project or an example of a cooperative project between several groups. We encourage innovative and/or creative subject material! Presentation topics may include (but are not limited to):

- Lake wildlife and fisheries, or aquatic plant management
• Exotic/invasive species detection, trends,

- effects, or control
• Lake protection, restoration, or enhancement efforts
• Innovative uses of volunteer-collected data
• Wetland classification and use designation
• Urban and agricultural nonpoint source pollution-reduction strategies
• Recreational use conflicts
• Lake property values and water quality
• Illinois water laws and public policy
• Remote sensing
• Other lake topics

Verbal presentation time slots will be 20 minutes, unless otherwise noted. Included in this time period is 5 minutes for questions and discussion. ILMA will be using a computer-generated, PowerPoint-for-Windows (MS Office 2003) projection format for technical sessions. ILMA will provide all laptop computers and projectors for the conference. Abstracts should not exceed 250 words and must be submitted to Mike Adam. Finally, in celebration of the 25<sup>th</sup> year, we are going to be posting old photos of past conferences. If you have any, please either bring them along or send them to Mike Adam. For more information or to submit your abstract, or submit your photos contact:

Mike Adam
3010 Grand Ave
Waukegan, IL 60085
(847) 377-8002
madam@lakecountyil.gov

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Sign up to receive an electronic version of Cattail Chronicles :
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Please set aside these dates and be on the look out for conference registration materials.
More information can be found at the ILMA website:
http://www.ilmalakes.org



Intern

Melissa McGuire was the lakes intern this past summer. She earned her bachelors degree in Biological Science from Bradley University in Peoria, IL and her master's from University of Wisconsin-Oshkosh. She helped in the field as well as in the office. After the summer she was hired as a permanent employee with our lab.

# Cattail Chronicles

## Spotlighting Watershed Groups: *Flint Creek Watershed Partnership*



By: Patsy Mortimer

### What is a watershed group?

It's a group of people who want to improve watershed conditions – usually water quality, flooding and natural resources.

### Okay then, what's a watershed?

It's a land area that drains to a body of water like a wetland, stream or lake. Watersheds come in all shapes and sizes depending on the body of water under consideration. It could be a small land area like the 679 acres draining into Lake Louise in Barrington or a large land area like the 1.2-million square mile Mississippi River Basin draining into the Gulf of Mexico. Watershed partnerships in Illinois are formed around creek or river drainage areas.

### Where is the Flint Creek Watershed?

Flint Creek and its branches flow 45 miles west and north through 36.5 square miles of southwest Lake, northwest Cook and a small portion of McHenry Counties into the Fox River.

### Why form Flint Creek Watershed Partnership (FCWP)?

In 2004 the Barrington Area Development Council (BADC) invited three groups to talk about Flint Creek. After learning about the poor water quality and flooding problems in the creek, BADC convened a group to mitigate these problems that became the watershed partnership in 2005.

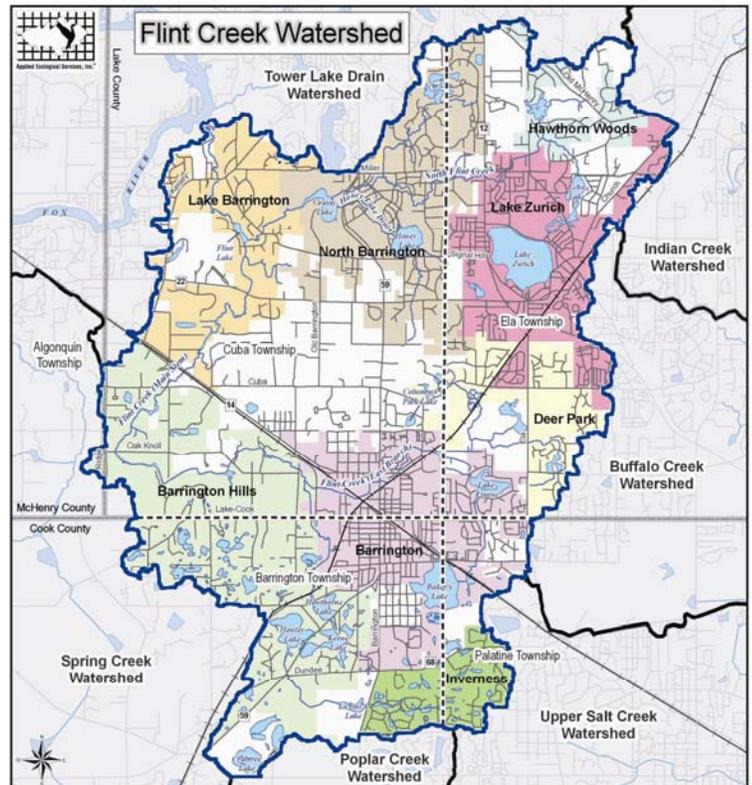
### Who belongs to Flint Creek Watershed Partnership?

FCWP is a partnership of 13 local governments and organizations as well as supporting government agencies, homeowners, associations, businesses, engineers – anyone with an interest in the watershed. The partners are Barrington Area Conservation Trust, Barrington Area Council of Governments, Barrington Area Development Council, Citizens for

Conservation, Barrington and Cuba Townships, Villages of Barrington, Barrington Hills, Deer Park, Hawthorn Woods, Lake Barrington, Lake Zurich, and North Barrington.

### Is FCWP incorporated?

Since the Barrington area already has several non-profit



conservation groups serving the area, we didn't feel that it was necessary to incorporate. FCWP operates with Citizens for Conservation as its fiscal agent

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## Environmental Links

[Flint Creek Watershed Partnership](http://www.flintcreekwatershed.org/)

A partnership to educate through projects that improve water quality and reduce flooding,

<http://www.flintcreekwatershed.org/>

[Lake County Solid Waste Agency](http://www.lakecountyil.gov/swalco/default.htm)

Find out more about the current collections and programs they're offering.

<http://www.lakecountyil.gov/swalco/default.htm>

[Stormwater Management Commission](http://www.lakecountyil.gov/stormwater/default.htm)

Download materials from the salt alternatives workshop held in Lake County.

<http://www.lakecountyil.gov/stormwater/default.htm>



STORMWATER MANAGEMENT COMMISSION

### What Watershed Groups Do

Continued from page 4

#### How are you funded?

Initially we received \$10,000 in start up funding from Barrington Area Development Council and Citizens for Conservation. We also received a \$10,000 Management Assistance Grant from Lake County Stormwater Management Commission. Partners contributed \$45,000 as a match for the 319 watershed plan grant and for general funding. In 2010 partners will start paying \$1,500 in dues to cover watershed expenses. Projects are funded by grants.

#### What's your proudest achievement?

In 2007 we finished an EPA-compliant watershed plan in less than a year. That was our entire focus for the year with monthly stakeholder meetings, the help of an inspired consultant, Steve Zimmerman of Applied Ecological Services, and a detention basin inventory by Lake County Stormwater Management Commission (fortunately they had already conducted a stream inventory the prior year). In 2008 Chicago Wilderness honored FCWP and the plan with an Excellence in Conservation Award and a feature in the Summer 2009 issue of the magazine. We've also received awards from Indian Creek Watershed Project and Citizens for Conservation.

#### What are you working on now?

After we finished the watershed plan it took us awhile to get the plan adopted by all the local governments and get back into actually working on projects to improve watershed conditions. We're working on banning phosphorus, demonstration rain gardens, detention basin retrofits, naturalized creek buffers, educational seminars and rain garden workshops next winter. North Barrington is working on restoring North Flint Creek throughout the community.

#### Why ban phosphorus?

Lake County Health Department's Lakes Management Unit has conducted water quality monitoring that has revealed unhealthy phosphorus levels in four of our watershed lakes. Excess phosphorus promotes algal growth which depletes oxygen levels in the water and in turn causes fish and wildlife kills. Since some of the phosphorus is coming from lawn fertilizers, we need to educate homeowners to use phosphorus-free fertilizers.

#### You mentioned rain gardens. What are they?

Rain gardens are shallow depressions that hold rain, or stormwater runoff, from roofs or driveways for 24 hours and allow it to seep into the ground. Rain gardens keep water where it falls so it doesn't pick up fertilizer chemicals flowing across lawns or grease and oil from the streets before entering storm sewers. Storm sewers dump this polluted water directly into the creek. Rain gardens are also wonderful introductions to the benefits of drought-resistant deep-rooted native plants that help



Volunteers plant a demonstration rain garden at the Barrington Area Library. Installation was donated by Trillium Native Landscapes.

infiltrate water. As a bonus, anyone can plant a rain garden – homeowners, businesses, schools, etc.

#### What else have you done?

We've had several special events. Last year we had a watershed bus tour that really opened up everyone's eyes about the diverse activities taking place in the watershed, e.g. streambank restoration, naturalized detention, prairie restoration and rain gardens. This year we had a Flint Creek Fall Festival in celebration of Illinois' It's Our River Day. We didn't have as many people as we would have liked, but everyone who attended learned a lot about the watershed, native reptiles and fish – and had their face painted for free! We're going to do it again next year, but with even more publicity.

## UPDATE

### Invasive Plants: Brazilian Elodea

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In the Spring 2009 newsletter we featured an article about the discovery of a new invasive exotic aquatic plant, Brazilian Elodea (*Egeria densa*), in two ponds in the Village of Libertyville. At the time of discovery the plant had completely covered the surface of the main detention pond and was found in another pond that received water from the main pond. The Village of Libertyville established a plan to eradicate the plants. This summer a certified herbicide applicator treated the ponds with the systemic herbicide fluridone and an unknown concentration. Two treatments of fluridone appeared to kill the plants in the small pond and most of the plants in the main pond, however, a few green stems remained into the fall requiring the applicator to treat the pond once more with a contact herbicide. Stay tuned for more updates!



## Road Salt Application Workshops (Continued from Page 1)

finder, there was no reason to look below this level.” To quote Connie Fortin of Fortin Consulting “instead you may want to stick a conductivity meter on your fish finder while fishing in some lakes.” Conductivity is a measurement of the electrical charge produced by ions contained in water. Conductivity is strongly correlated to chloride concentration.

High chloride concentrations may make it difficult for many of our native species to survive. However, many of our invasive species, such as Eurasian Watermilfoil, Cattail and Common Reed, although not able to assimilate chloride, are tolerant to high chloride concentrations. Most of our native species are not able to tolerate these conditions. As a matter of fact, if chloride concentrations persist at or above 230 mg/L in the waters for 30 days it is likely to lose 10 percent of all species present in your lake (Wagner and Yaggi 2001). The United States Environmental Protection Agency has determined that the critical value for chlorides in aquatic systems is 230 mg/L. It does not take much salt to contaminate water. As a matter of fact, a chloride concentration of 230 mg/L is equivalent to 1 teaspoon of table salt added to 5 gallons of water. In terms of deicing, one fifty pound bag of road salt can contaminate 10,000 gallons of water.

Depending on land use, approximately fifty-five percent of snowmelt runoff is delivered directly to our surface waters. The remaining 45 percent percolates through groundwater into below ground aquifers, which feed our lakes indirectly. Runoff of meltwater measured from Canadian roads and patrol yards where salt is stored has had chloride concentrations greater than 18,000 mg/L (Environment Canada, 2001). Recent studies have looked at trends of groundwater contamination in the Chicago region and there is an increase in the amount of chlorides present.

So, how can we possibly keep road salt out of our water?

One successful approach to reducing salt usage has been educating those who maintain our roadways to make wise decisions about what deicing materials should be used and under what conditions they should be applied to successfully melt ice. For example: rock salt is ineffective when temperatures are below 15°F, and is more efficient when wetted. Wetting activates the salt, bringing it into solution for quicker results. Rock salt should be applied only to plowed or shoveled pavements. If the temperature drops below 15°F a more appropriate deicing chemical should be applied. The workshop educated crews on topics such as calibration and chemical properties of deicing materials. Calibration is a procedure used to measure the amount of salt or sand applied to a surface in relation to speed. It is likely that this type of training will continue as it was well received and most attendees planned to incorporate some of the cutting edge technologies and alternatives into their current protocol if they were not already using them. DuPage and McHenry counties are conducting similar training workshops. McHenry County is making the training a requirement in order to apply deicing materials in their county.

As homeowners, the following practices are encouraged. **NEVER USE SALT OR SALT ALTERNATIVE TO MELT SNOW. SHOVEL FIRST**, then apply an appropriate material. Use only the manufacturer’s recommended amounts. If you have salt that does not melt, sweep it up and use it on another occasion. Keeping chlorides out of our waters can begin with you following these guidelines. If you have questions about deicers, talk to hardware store salespersons. They should be able to help you make decisions about which deicer is right for you.



Pavement Temp. °F	One Pound of Salt (NaCL) melts	Melt Times
30°	46.3 lbs of ice	5 min.
25°	14.4 lbs of ice	10 min.
20°	8.6 lbs of ice	20 min
15°	6.3 lbs of ice	1 hour
10°	4.9 lbs of ice	Dry salt is ineffective and will blow away before it melts anything



- De-icers melt snow and ice. They provide no traction on top of snow and ice.
- Anti-icing prevents the bond from forming between pavement and ice.
- De-icing works best if you plow/shovel before applying material.
- Pick the right material for the pavement temperatures.
- Sand only works on top of snow as traction. It provides no melting.

## Can You Name This Lake?



### Clues:

One of the few relatively non-developed kettle lakes present in Lake County, the lake whose surface area is 5.83 acres is contained in a 17.73 acre aquatic complex and is located in Lake County's largest forest preserve. It boasts many unique and rare species, one of those being the floating leaf aquatic plant Watershield. There are very few aquatic resources present in the county in which Watershield can be found. It is one of thirteen lakes located in the Squaw Creek watershed that the Lake County Health Department—Lakes Management Unit monitored during 2009.

## Invasive Species Special Notice

Visually inspect hard surfaces for zebra mussels when you take your docks and watercraft out this fall. These surfaces include docks, boatlifts, dock floats and supports, swimming platforms, boats, motors, anchors, and any objects that have been in the lake or river for the summer. Check areas that zebra mussels are especially attracted to like trim tabs, rubber gaskets, grooves along the keel of pontoon boats, and sailboat centerboards. During early infestations, zebra mussels are likely to be small (1/4-1/2 inch long) and the number attached on any object is likely to be low. You can also examine rocks and other hard surfaces along the shoreline and in shallow water, especially near water accesses. If you suspect zebra mussels in your lake immediately contact the LMU at (847) 377-8030. Preserve a few zebra mussels in rubbing (isopropyl) alcohol and mail them to:



**Lakes Management Unit**  
3010 Grand Ave.  
Waukegan IL 60085

*Inside:  
Illinois Lakes Management  
Association Annual meeting to be held  
in Northeast Illinois!*

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Health Department and  
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