



# Cattail Chronicles

Issues Affecting the Surface Waters of Lake County

Lake County Health Dept. and Community Health Center  
Dale Galassie, MA, MS, Executive Director

Volume 17, Issue 1

Spring 2007

## Round Lake Management Commission: A Lake County Success Story

By: Mike Adam



Round Lake

Throughout Lake County there are numerous lakes and along with them many lake associations or management entities that have been created. The purpose of these groups is to manage the lake for a variety of lake users and

often for fish and wildlife habitat as well. Anyone who has been part of a lake management association or homeowner's association in charge of managing a lake knows the amount of hard work and dedication it takes to make a successful organization. Many hours of work (and frustration) may be spent trying to "do the right thing". Some associations struggle while others prosper and do well. One such success story is at Round Lake.

Prior to 2003, lake management initiatives fell primarily to the Round Lake Park District and the local homeowner's associations. There existed at one time the Round Lake Improvement Association, unfortunately, the

association was disbanded in the early 90's due to lack of interest. Thanks to a number of proactive citizens and municipal leaders, interest in restarting an association began in 2002. In 2003, an intergovernmental agreement was signed by the Villages of Round Lake, Round Lake Beach, and Round Lake Park officially creating the Round Lake Management Commission (hence, Commission). The mission of the Commission is "to provide a safe, clean and pleasant lake for the enjoyment of all area residents."

In the short time period since 2003, the Commission and its volunteers have accomplished a great deal. Here is a summary of their accomplishments for 2006:

### **SCALE Grant**

The SCALE (Streambank Clean up and Lake shore Enhancement) program is administered annually by the Illinois Environmental Protection Agency (IEPA; funding comes from U.S. EPA) to local groups for clean up projects around lakes and streams.

(See Round Lake page 6)

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### For information contact:

The Lakes Management Unit  
Environmental Health Services  
847- 377- 8030

<http://www.co.lake.il.us/health/ehs/lakes.asp>



**LakeCounty**  
Health Department and  
Community Health Center

# Cattail Chronicles

## Spotlighting Fish and Wildlife American Bull Frog (*Rana caesbeiana*)

By: Leonard Dane



American Bull Frog

“ THE ‘JUG-O-RUM...JUG-O-RUM...’ OF THE AMERICAN BULL FROG WILL BE VERY DISTINCT, DEEP AND PROBABLY THE LOUDEST FROG YOU HEAR.”



With spring just around the corner, we will soon be hearing the croaking of many species of frogs near our local lakes and marshes. The “jug-o-rum...jug-o-rum...jug-o-rum” of the male American Bull Frog will be very distinct, deep and probably the loudest frog you hear.

The American Bull Frog is a member of the family Ranidae, or "true frogs", and is native to much of North America. They are found in the United States, Canada, and Mexico east of the Rocky Mountains, but have been introduced to many other localities throughout the world. In Europe and the western U.S. measures have been taken to control their spread because it competes with, and often drives out, native species.

The American Bull Frog is a large species that can grow to a length of 6 inches and a weight of 1.5 pounds, with females typically larger than males. The sex of an adult bullfrog can be easily determined by the size of the external ear (tympanum) relative to the eye. The tympanum is a round circle located on the side of the head near the eye, and in males it is much larger than the eye. In females the tympanum is as large as or smaller than the eye. Also, during the spring breeding season the throat of the male is yellow, whereas the female's throat will be white. Other physical characteristics include the hind feet being fully webbed and the coloration generally varying in shades of green or brown, with dark brown, dark green, or black blotches and a yellow or white underside. A similar species that the American Bull Frog is often confused with is the Green Frog (*Rana clamitans*). Although the Green Frog has similar coloration, they will have ridges along each side of their back and average only 2¼ to 3½ inches in total length.

A cold blooded amphibian, the Bull Frog prefers warm, still, shallow water such as a pond, lake, bog, marsh, or backwaters of a river. Bull Frogs are becoming more common in areas that have been developed by humans due to increased water tempera-

tures and increased aquatic vegetation, both of which favor Bull Frogs by providing habitat for reproduction growth, and refuge from predators. The American Bull Frog is also causing decreases in populations of other types of frogs due to habitat destruction confining all frogs into smaller ponds and wetlands where the Bull Frog can dominate.

As an amphibian, it lives both in the water and out of the water. Although they are air breathers, they can stay underwater for long periods of time, breathing through their skin. A Bull Frog may bury itself in the mud and construct a small cave-like structure under the water as it hibernates during the winter. Like humans, bullfrogs have five senses. Their eyesight is very good, allowing them to see their enemies before it is too late. Their eyes have special glands to keep them moist and have movable eyelids to protect them. In front of the nose is a blind spot, so Bull Frogs have to turn their heads to see directly in front of them. Bull Frogs use their good hearing to find a mate, and also have a well developed sense of touch.

Reproduction takes place from May to July. Fertilization may be done by many males after each female deposits up to 20,000 eggs. Four days after fertilization the eggs hatch, emerge, and remain tadpoles for 3 years before transforming into frogs. Adults reach maturity in 3 to 5 years and generally live 7 to 9 years although in captivity they have lived for 16 years.

The American Bull Frog preys on worms, insects, crustaceans, other frogs, tadpoles, and snakes, basically anything they can fit in their mouths. They sit and wait for their prey to come by and then quickly grab it with their tongue and bring it back to their mouth where they swallow it whole.

See Bull Frog page 7

## Spotlighting Aquatic Plants The Duckweed Family

By: Adrienne Orr

Have you seen a lake that is completely green? When you get closer you may realize the lake is completely covered in small, floating plants. They are probably species from the duckweed family. Both Duckweed (*Lemna* spp.) and Watermeal (*Wolffia* spp.) are free-floating plants that can completely cover the surface of a lake. They are frequently found together, however, one is usually more abundant than the other based on conditions.

Duckweed and Watermeal are both very small flowering plants, although they don't often produce flowers. They look like small leaves which are called fronds and have several layers of conspicuous air spaces. Duckweed fronds are less than a 1/4 inch wide and typically have a single root which hangs underneath the frond and obtains the nutrients from the water. Watermeal is much smaller, approximately 1/32 inch wide with no root system. Nutrients are obtained through the underside of the frond. Reproduction is through budding, with new fronds growing from the buds of parent fronds. The new Duckweed eventually grows roots and breaks away from the parent. A new daughter cell is produced every day or so, therefore, under ideal conditions, Duckweed and Watermeal can cover a pond in a couple of weeks. When a body of water becomes covered, the water below becomes shaded which can reduce the growth of underwater plants and algae. When this occurs, plants are not photosynthesizing and producing oxygen and oxygen levels can drop low enough to produce fish kills.

Both Duckweed and Watermeal are typically found in quiet, nutrient rich water such as wetlands, ponds, and small backwater areas of a lake. They require a lot of nutrients (especially nitrogen and phosphorus) to grow and are often found in bodies of water in wooded areas. Leaf litter provides a rich, organic source of nutrients. Duckweed and Watermeal can be spread easily from one lake to another by ducks or geese, but can also be spread by humans. In late fall the plants may disappear from the surface of the water as they begin to lose buoyancy and sink to the lake bottom. They overwin-

ter on the bottom of the lake until spring when they begin to photosynthesize again, allowing them to accumulate oxygen, which again makes them buoyant.

An effective control for Duckweed and Watermeal can be skimming the plants off the surface of the water when they are in low density. There are also a couple of chemical controls available. Diquat (Reward®) is a contact herbicide, known to successfully control Duckweed, however it seldom is effective on Watermeal. When sprayed directly on the plants, it immediately causes them to turn brown and die. However, due to the small size of these plants, not all plants may come in contact with the herbicide. Due to the high reproduction rate, the few plants remaining can easily start to reproduce and take over a large portion of the water body again. Therefore, several Reward® treatments usually have to be made each season. If the entire surface is covered, treatments should be made to only part of the pond to prevent low dissolved oxygen and excess decomposition.

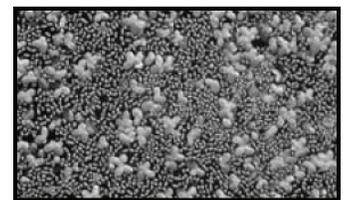
Fluoridone (Sonar®, Avast!™) is another chemical used in treating duckweeds. It is a systemic herbicide and is most effective when held in the water for 30 days. It takes effect slowly, and can be noticeable for 2 to 3 months after the treatment. Fluoridone works on Watermeal, however there have been cases where there has been no effect for unknown reasons.

A drastic measure to completely get rid of Duckweed and Watermeal would be to drain the water body and remove the sediment with high nutrients as well as the sediment containing plants, however this can be costly. Prevention is the key to controlling Duckweed and Watermeal. The obvious way to eradicate it is through nutrient reduction. Unwanted nutrient inputs include: fertilizer, leaf litter, runoff, and goose feces. By reducing the nutrients entering the lake, the Duckweed and Watermeal may decrease the following year, however total eradication may take several years.



Duckweed in a lake.

“A NEW DAUGHTER CELL IS PRODUCED EVERY DAY OR SO, THEREFORE, UNDER IDEAL CONDITIONS, DUCKWEED AND WATERMEAL CAN COVER A POND IN A COUPLE OF WEEKS.”



Duckweed mixed with Watermeal (Watermeal is the smaller, dot-like species).

# Cattail Chronicles

## How Land Use Affects Groundwater

By: Leonard Dane



Cloudy water enters the storm water drain.

“WHAT GOES ON THE GROUND CAN SEEP THROUGH THE SOIL AND END UP IN DRINKING WATER, LAKES, STREAMS AND WETLANDS.”

Activities on the earth's surface can affect the water under ground. Anything used by humans that can dissolve in water can show up in groundwater, therefore linking groundwater contamination to land use. What goes on the ground can seep through the soil and end up in drinking water, lakes, streams, and wetlands. There are many possible sources of contamination.

Development can decrease the recharge of groundwater by increasing impermeable surface area. Instead of the rainfall infiltrating into the aquifer, it runs off to lakes and streams. This also causes stream levels to be variable and increases erosion. The stormwater from roofs, driveways, parking lots, and streets contain contaminants such as gasoline, oils, metals, road salts, and bacteria. Air pollution can also lead to water pollution. Particles from car exhaust, smokestacks, and dust from city streets and farm fields that settle on the ground can be washed into the soil by rain and eventually make their way into the aquifer.

Another source of groundwater contamination are fertilizers applied to field and lawns. The nitrate, a form of nitrogen, not used by plants may leach into the groundwater while the extra phosphorus may run off into lakes, streams, and wetlands. Pregnant women and infants should not drink water high in nitrate, because a baby's stomach acid is not strong enough to kill the bacteria that

converts nitrate to harmful nitrite. Nitrite binds to hemoglobin in the blood and prevents oxygen from getting to the rest of the body.

The waste produced by humans is also a source of groundwater pollution. Most people send their garbage to a landfill. Landfills are constructed with a clay liner and a leachate collection system to keep the liquid waste out of the groundwater. Sewage is another form of human waste that can cause problems. Many wastewater treatment plants use lagoon systems to treat sanitary sewage through bacterial degradation. Although the lagoons are sealed with compacted clay or plastic liners, burrowing animals or soil movement can cause leaks. Residents not hooked up to a sanitary sewer system generally have an on-site septic system. When these systems fail, bacteria, nitrate, viruses, detergents, household chemical, chloride, or anything washed down the drain can contaminate groundwater and nearby surface water. Routine inspections and maintenance are necessary to keep these systems operating properly and to prevent contamination to the groundwater.

Tracking down and stopping sources of pollution is a lengthy and expensive process. Prevention is the best strategy when it comes to groundwater pollution. This involves looking at the ways groundwater is polluted and finding methods to keep the pollutants at bay.

### Environmental Links

<http://www.dnr.state.wi.us/org/caer/ce/eeek/index.htm> (4-8 grade).

EEK! Environmental Education for kids is a Wisconsin DNR educational website with wildlife pictures and sounds.

This website contains information for teachers as well as students, and provides a forum where students can share stories and seasonal observations with each other.

<http://nwf.org/kidzone/kzPage.cfm?siteId=3> (4-10 grade)

This website has links to magazines such as Ranger Rick published by the National Wildlife Foundation. It also has a book nook, games, and animal guides for kids. You can get great craft ideas and photo tips along with outdoor activities for the whole family.

<http://www.arborday.org/> (All ages)

The National Arbor Day Foundation website is perfect for individuals of all ages with an interactive kids corner and information on tree planting and care, pruning guides, and tree identification. Check out the Lied Lodge and Conference center and what conservation practices they are taking in order to reduce their impact on the environment.

## Lake Drifters

By: Shaina Keseley

The word plankton comes from the Greek 'planktos' which means 'drifter' or 'wanderer'. Because of their small size, plankton movement depends mainly on water currents, even though some forms are capable of independent movement in a vertical fashion. By definition, organisms classified as 'plankton' are unable to resist ocean currents. This is in contrast to nekton organisms that can swim against the ambient flow of the water environment and control their position (e.g. squid, fish, and marine mammals). Plankton abundance and distribution are strongly dependent on factors such as nutrients concentrations, the physical state of the water column (temperature, pH level, etc.), and the abundance of other plankton.

Plankton are divided into functional groups based on trophic level (position an organism occupies in a food web):

### Consumers:

Zooplankton – small crustaceans that feed on other plankton. They can be seen by the naked eye, but better under a microscope. A common example is the water flea (*Daphnia*), which are the largest size group.

### Producers:

Phytoplankton (algae) – microscopic single celled plants that form the base of the food web. They live in the portion of a water body that contains enough light for photosynthesis. Some major groups are diatoms, dinoflagellates and cyanobacteria.

### Recyclers:

Bacterioplankton – bacteria in a water body that play an important role in the break down of organic material.

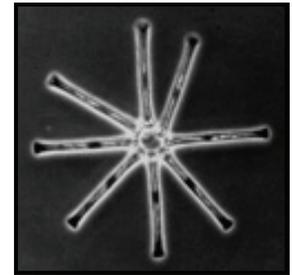
Some plankton can not be placed in one group or another and are called mixotrophs.

For example, some dinoflagellates photosynthesize and consume other plankton.

Plankton are found throughout all the oceans, seas and lakes. However, the local abundance of plankton varies horizontally and vertically in the water column as well as seasonally. Two factors determine their abundance: sunlight availability and nutrient levels. Phytoplankton need sunlight as an energy source to grow, and zooplankton's main food source is phytoplankton. Different groups of phytoplankton need different ratios of nutrients, especially nitrogen, phosphorus and silica. While plankton are found in the greatest abundance in surface waters, they occur throughout the water column. At depths where no primary production occurs, zooplankton and bacterioplankton make use of organic material sinking from the more productive surface waters above. This flux of sinking material can be especially high after spring blooms die-off.

Plankton are very important to fish communities, because they are the only prey item for most larval fish, and many fish feed only on plankton throughout their lives (planktivorous fish such as the Alewife). Fish rely on the density and distribution of zooplankton to coincide with egg-hatching for good survival of the larval fish, which can otherwise starve. Natural factors (i.e. variations in oceanic currents) and man-made factors (i.e. dams on rivers) can strongly affect zooplankton density and distribution, which can in turn strongly affect the larval survival, and therefore breeding success and stock strength of fish species.

As the base of the food web, plankton are a very important group. In most cases they are only noticed when causing nuisance algal blooms, when in fact they support the large game fish, such as Largemouth Bass, that are relied on for food and sport fishing. The next time you sit down to a meal of fish; remember they wouldn't have made it to your plate if not for the 'planktos.'



A diatom, a producer species (*Asterionella formosa*).

“THE WORD  
PLANKTON  
COMES FROM  
THE GREEK  
WORD  
‘PLANKTOS’  
WHICH MEANS  
‘DRIFTER’ OR  
‘WANDERER’.”



A crustacean, a consumer species (*Daphnia* spp.).

## A Workshop for Homeowners Associations: Maintenance (Techniques or Practices) for Subdivision Drainage Systems

A free workshop for associations and property owners who are responsible for maintaining detention ponds, and other natural areas  
Sponsored by: Lake County Storm Water Management Commission and Lake County Health Department (Lakes Management Unit)

When: June 23rd

Contact LCSMC for more information and registration: email - dhertel@co.lake.il.us or phone - (847) 918-5260



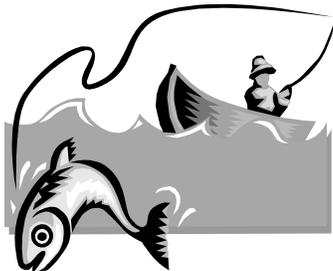
# Cattail Chronicles



The park at Round Lake.

“IN THE SHORT

TIME PERIOD  
SINCE 2003,  
THE {ROUND  
LAKE}  
COMMISSION  
AND ITS  
VOLUNTEERS  
HAVE  
ACCOMPLISHED  
A GREAT DEAL.”



## Round Lake

(continued from page 1)

The Commission has been awarded this grant for three consecutive years. In 2006, there were approximately 25 volunteers that collected 1,500 pounds of garbage and debris.

### Biological Control of Purple Loosestrife

To naturally control the invasive exotic Purple Loosestrife, area volunteers began raising and helping to introduce loosestrife beetles (*Galerucella pusilla*). These insects feed on the leaves of Purple Loosestrife, eventually weakening and killing the plant. This project has already seen success in the areas where beetles were introduced.

### Illinois Volunteer Lake Monitoring Program

Round Lake has participated in this state program since the early 1990's. This program has given the Commission, IEPA, and LCHD-LMU annual water clarity data that can be used for long-term monitoring of the lake's water quality. Since both IEPA and LCHD-LMU are not able to assess the lake annually, the information collected by this program is extremely valuable to everyone concerned about Round Lake.

### Safety Patrols

With the assistance of the Police Departments of the three municipalities, weekend safety patrols are conducted on the lake. The three departments cooperatively use a boat loaned from the Round Lake Area Fire Department. In addition, the Commission recently acquired a donated boat that will be moored on the lake and used in support of a variety of initiatives. The Commission has also sponsored the Chain-O-Lakes Sail

& Power Squadron and U.S. Coast Guard to conduct boat safety checks at the lake.

### Venetian Night & Fireworks

One summer night each year the Commission sponsors a Venetian night where contestants decorate and light up their boats for a procession around the lake. After the procession awards are given out, and everyone enjoys a fireworks display sponsored by Alpine Country Club, one of the private groups on the lake associated with the Commission.

### Fishing Should Be Fun Derby

Another annual event initiated by the Commission is the “Fishing Should Be Fun Derby”. This event, which was co-sponsored by the Commission and Competition Bassmasters of Northern Illinois in conjunction with the Round Lake Area Park District, includes a day filled with fishing activities geared to introduce kids to a fun outdoor activity. Fishing seminars, safety classes, a casting event, and educational materials are all part of this event. Over 200 kids participated in the derby last year. All kids who didn't have their own pole or tackle were given their own equipment to keep, for free.

### Governor's Home Town Award Recipient

In part due to the efforts of the Commission and area volunteers, they were awarded the 2006 Governor's Home Town Award for the clean up/beautification of Round Lake. It was one of 46 such awards that were given out by the Governor last year.

### Newsletter

A biannual newsletter, The Round Lake Compass, is a multicolor, aesthetically pleasing informational communication that the Commission publishes and distributes to the residents of the 3 villages and interested parties.

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A copy of the newsletter along with the Commission's monthly meeting minutes can be found at <http://www.villageofroundlakebeach.com/pdf/lakesmangmtcommnews1006.pdf>

## Fish Stocking

The Commission supports annual fish stocking in Round Lake. Northern pike and walleye are the main fish stocked. The stocking is supported financially by the 3 Villages.

You might think the Commission and its volunteers would be satisfied with the work they have accomplished, but they have other projects they are looking into establishing as well. Future potential projects include working with school kids on storm sewer stenciling and other habitat projects in or near the lake, enhancing the native plant populations in the lake, and pursuing additional grant opportunities to enhance the quality of the lake's resources.

LCHD-LMU works with many lake associations, local and municipal agencies throughout the county. We are often asked "what are other lakes doing?" Without hesitation, the Round Lake Commission is usually the first group that comes to mind as a model example. That being said, the Commission does have advantages that many associations do not have, that is, the cooperation and commitment of three villages. Since many lakes in the county are private, not every lake association can expect the same results as quickly as what has happened in Round Lake. However, the innovative ideas and the dedication of volunteers are a major reason for the Commission's success. The hope is that other groups in the county may adopt some of these ideas or better yet, share their ideas with one another. If you think your group has innovative ideas that may be beneficial to other lake users and managers, please call us at (847) 377-8030. If you have specific questions for the Round Lake Commission call Tim Pasternak, Round Lake Beach Commissioner and Secretary at 847-548-1461.

## Bull Frog (continued from page 2)

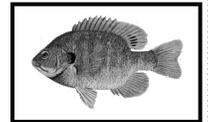
Frogs have many terrestrial predators such as snakes, hawks, opossums, raccoons, skunks, and dogs. In the water, its predators include fish, birds, mink, otter, snapping turtles, and humans. They protect themselves by jumping away with their powerful legs (their best method of survival), hiding, or fighting (which usually does not work). In order for humans to harvest Bull Frogs an Illinois sport fishing license is required. Bullfrogs may be taken by hand, fishing, pitchfork, landing net, bow and arrow, spear, or gig. Firearms, air guns, gas guns or commercial fishing devices such as dip nets, hoop nets, traps, or seines are not allowed. Bull Frog season runs from June 15 to August 31 with a daily bag limit of 8 frogs and a 16 frog possession limit.

So this spring when you are out and about near one of the county's many lakes or wetlands, take a moment to listen, you just might hear the croaking of the American Bull Frog. Jug-o-rum...jug-o-rum...**jug-o-rum...jug-o-rum!!!**

## Spring/Summer Events in Lake County

For information regarding these and other activities, visit [www.LCFPD.org](http://www.LCFPD.org)

- 2007 is Year of the Periodical Cicada—these creatures emerge once every 17 years. To learn more:
  - Periodical Cicadas: The Plague and the Puzzle  
Ryerson Woods Welcome Center, June 2, 7-9 pm, \$10
  - Cicada Mania: They Don't Bite  
Ryerson Woods, June 3, 1-5 pm, Free
- HOOKED! The History and Ingenuity of Sport Fishing
  - Lake County Discovery Museum, March 3-Sept. 23
- Des Plaines River Canoe Marathon
  - Oak Spring Road Canoe Launch, May 20, starts at 8 am
  - More info contact: [www.canoemarathon.com](http://www.canoemarathon.com) or 847-604-2445
- Free Boat Safety Inspection
  - Fox River Marina, Free and no registration required
  - Dates in May: Call 847-381-0669 for dates, times, directions
- Free, Guided Bird Walks
  - Guided by Lake-Cook Audubon Society
  - Rollins Savanna, Grassland Birds
  - All ages invited; June 3, 8- 9:30am
- Native Plant Sale-Mother's Day Weekend
  - Independence Grove, Libertyville
  - May 12, 9am-3pm and May 13, 11am-3pm
  - Wildflowers, Prairie Grasses, Ferns, Shrubs and Trees
  - Also offering Rain Barrels! 847-968-3331



## CAN YOU NAME THIS LAKE?



### Clues:

- Located in Des Plaines River Watershed
- Sampled in 2006 by the LMU
- Located in the newly renovated Raven Woods Forest Preserve

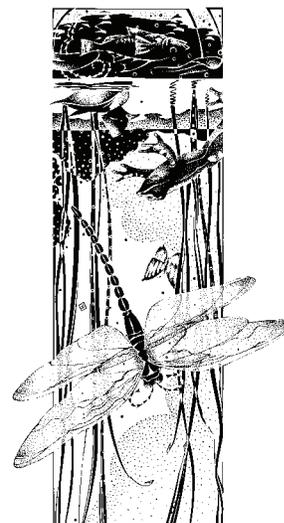
Answer is posted on our website:

<http://www.co.lake.il.us/health/ehs/lakes.asp>

## Lakes Scheduled to be Sampled in 2007

Ames Pit  
Bangs Lake\*  
Lake Barrington  
Lake Carina  
Cedar Lake\*  
Countryside Lake\*  
Cranberry Lake\*  
Lake Fairview  
Grand Avenue Marsh  
Independence Grove  
Long Lake\*  
Lake Minear  
North Tower Lake  
Osprey Lake  
Sand Pond  
Sterling Lake  
Third Lake\*  
Timber Lake (S)  
Tower Lake  
Valley Lake  
Wooster Lake\*

\* Sentinel lakes monitored annually, 2005-2009



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