Looking Ahead... Page 8





<u>Left</u>: Early miners used caged canaries as indicators to warn of unsafe mine-shaft conditions. <u>Above</u>: Fish biologists search for sensitive "indicator" species to assess a lake's ecological health and habitat quality.

grant is being sought to evaluate Lake Ripley's vulnerable, nearshore fish community. Often described as "canaries in the coal mine," most of these environmentally-sensitive species are not routinely sampled, and will often elude capture during fall electrofishing surveys that target larger gamefish. They are important links in the food chain, and include lesser-known names like the pugnose shiner, banded killifish and least darter. Their presence or absence can provide clues about a lake's changing habitat conditions and management needs.

#### Native Plant Sale

May 19th Oakland Town Hall

11:00-12:00 Slide presentation with plantselection tips by Lisa Reas\*

12:00-1:30 Plant Sale

et expert advice on plants best suited for your yard—whether wet or dry, sunny or shady, clay or sandy. A variety of wetland, prairie and shade-tolerant plants will be available for purchase at rock-bottom prices (\$1.50/plant!). Come stock up on plants for your rain garden or lakeshore restoration.



\*Lisa Reas is the owner of L J Reas Environmental Consulting Corporation (Green Lake, WI), with 13 years of experience in shoreline restoration, erosion control, rain gardens, and native plantings. Lisa has a degree from UW-Stevens Point in Wa-

tershed Management, and was recently selected to be one of the landscape designers for the upcoming shoreline restoration at the Wisconsin Governor's Residence on Lake Mendota.

## Ripples

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Vol. 20, No. 1 Spring 2012

# LAKE DISTRICT OFFICE

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# LAKE MANAGER (RIPPLES EDITOR)

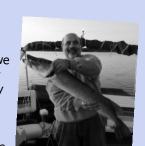
**Paul Dearlove** (608) 423-4537

INTERN

Jeanne Scherer

# FROM THE HELM

etting up before it's light, the smell of coffee coming from the kitchen... I was barely awake, but the excitement ran through my entire body. These are the memories of my first fishing trips with my father. Sometimes we would go to Lake Winnebago for walleye, or maybe to the Wisconsin River, or some unknown lake that was supposed to be a good bass lake. It didn't really got older, it was my job to row — just me and dad on another adventure.



Thirty-five years ago when my wife, Ann, and I bought our first cottage at Lake Ripley, it was the fulfillment of a dream. Fishing every weekend, sometimes my dad would drive up with my brother. We didn't always catch a lot of fish, but we shared some great stories and a lot of laughs. As time went by, I became a better fisherman and rarely went out without catching something. Like all good things, when you can do it anytime you want you become a little jaded. It's a little windy today, kind of cold this morning, good day for golf... and for several years I stopped fishing.

About eight years ago, we retired and moved permanently to Lake Ripley. That's when my neighbor, Tom, encouraged me to start fishing again. I have since rediscovered all the things I loved about being on the lake: the quiet, the smells, and the occasional sightings of elusive wildlife. Last summer we even watched a bald eagle snag a meal and fly up into a shoreline tree to eat its breakfast. Nowadays fresh as if they happened yesterday.

In this newsletter, you will find updated survey information pertaining to the status of Lake Ripley's fish populations. We are also hosting a free seminar (March 24th) on topics ranging from algae and aquatic plants, to plant-management laws and water quality trends revealed through sediment coring — all of and encourage you to make your own Lake Ripley memories.

John Molinaro, Chair

### 20-Year Plan for Lake Ripley's Headwaters

The lifeblood of Lake Ripley is its headwaters. Like a twisting conveyor belt attached to the larger drainage basin, a solitary headwater stream perpetually feeds water and nutrients to the lake, delivered in storm-driven pulses from the surrounding land-scape.



It is by no accident that the upstream gateway through which this lifeblood flows sits a 167-acre insurance policy. Purchased in 1997 and greatly expanded in 2008, the Lake District Preserve is a timeless legacy that will forever benefit Lake Ripley. The formula is simple: protect the lake by protecting its water supply. Yet the mere presence of these headwater conservancy lands in not enough. Maximizing their water quality impact will demand a sustained land-restoration effort, and one that is guided by a clear, long-range vision and implementation plan. That work is now underway.

Continued >>

20-Year Plan (cont.) Page 2

In 2011, the Lake District contracted with Jay Settersten, a landscape restoration ecologist and president of SetterTech, LLC, to begin leading the development of a 20-year plan for the Preserve. This initially involved working with board and staff to define management priorities and long-term restoration goals. Agreement was reached on the following themes and plan-design elements:

#### **Guiding Principles**

#### Main Purpose or Goal of Preserve

Protect Lake Ripley and its water quality by conserving and restoring critical headwater areas

#### **Secondary Goals**

- ▶ Watershed and natural resource education
- Improved habitat, especially for grassland and wetland-dependent wildlife
- ► Non-intrusive public access for low-impact nature exploration





<u>Left</u>: Wetland-dependent waterfowl seen nesting within the Preserve's marshes. Photo by Jeanne Scherer. <u>Right</u>: A boardwalk and connecting trails offer access to portions of the Preserve. Photo by James Daly.

While hunting and trapping are allowed as conditions of the grants used to purchase the property, visitor experiences to be actively promoted include: trail-based hiking, birding, wildlife observation, environmental education and scientific research. Discouraged and prohibited activities were also identified, including the use of bikes and motorized vehicles, and any uses that might unnecessarily disturb wildlife or damage fragile plant communities.

#### **Primary Management Objective**

Perform land-management activities that enhance wetland hydrologic functions, namely to improve the quality and modulate the volume of water flowing to Lake Ripley. This would include improving waterabsorption and filtration capacity of the wetlands and adjoining uplands.

Complete restoration of habitat types to pristine, presettlement conditions was not identified as a primary objective due to budget limits. Instead, efforts will be focused mainly on controlling invasive pests, storm runoff and soil loss within management zones.

#### Plan Design

The Preserve was divided into unique management zones based on landscape type: wetland, woodland and upland prairie. Specific tasks, timelines and budgets were then identified for each zone. The plan then outlines how recommended activities should be timed and coordinated over the 20-year period. Example tasks include:

- -establishment of firebreaks and trails
- -prescribed burn rotations
- -forestry mowing
- -invasive species control
- -development or maintenance of access facilities
- -restoration monitoring

#### **Public Participation**

Planning is not over, and we welcome and encourage your involvement. A presentation of the draft plan is tentatively scheduled to coincide with the April 21st Board meeting (9:00 a.m., Oakland Town Hall). We invite you to attend to learn more about the plan and provide input. Look for the plan on our website and Facebook page prior to the meeting.

We can also use more volunteers! Let us know if you would be willing to help pull garlic mustard, assist with prescribed burns, clean up debris, maintain nesting boxes, or design new kiosk displays. There is much to do, and many hands make for lighter work. •



Visitors will soon be greeted with new trail signs like the one pictured above. We thank our returning intern, Jeanne Scherer, for her work designing these new kiosk displays.

Rain Gardens (cont.)

In the end, four professionally-designed rain gardens were built, with a capacity to capture and treat over 10,000 gallons of runoff from each 2-yr, 24-hr storm! In addition, shoreline-restoration plantings are now in place to absorb road runoff and provide habitat for lakeshore wildlife. It will take some time for the plants to grow and mature, but when they do, it will be easy to recognize why this project is a "win-win" for both landowner and lake alike.

#### **Build Your Own Rain Garden**

Building a rain garden can vary from a fun weekend project to an extensive landscaping venture. Here are a few basics:

#### **Step 1: Location**

Choosing a spot for your rain garden is as easy as knowing where water flows when it rains. The next time it storms, pay attention to how water moves across your yard. Make note of flow pathways and temporary pooling areas. You can even sketch these areas and flow directions on a site map, along with the locations of any roof downspouts. This allows you to better visualize how a potential rain garden might compliment existing walkways, sitting areas or other property features.

Be sure to locate your rain garden down slope and several feet away of any building foundations. Remember, the goal is to capture and retain water so it has a chance to soak into the ground and get absorbed by the plants. You don't want to inadvertently divert water into your basement. If needed, you can extend your roof downspout with a piece of plastic drain tubing to route water away from the house and into your garden.

### Step 2: Sizing

Once you have a location picked out, you're ready to start thinking about its size and configuration. Experiment with the shape of your garden by laying out a rope or hose. One rule of thumb is to make the garden about one-third the size of the roof area that drains to it. A somewhat larger area will be needed if

you have slow-draining clay soils. The goal is for water to soak into the soil within 4-6 hours of a storm. If yard space limits your ability to expand the size of a garden, adding organic matter to the soil can help improve soil drainage and shorten infiltration time. Sandy soil drains the quickest, so a garden that is only 5-10% of the area of your hardscape (roof, driveways, etc.) should be adequate.

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#### **Step 3: Plant Selection**

The next step is to consider what types of plants you would like. Along with more how-to information, a list of plants suitable for rain gardens can be found at: http://www.dnr.state.wi.us/runoff/rg/kit.htm.

By using native plants, you'll also attract native birds and insects to your yard that control pests like mosquitoes! Great plant sources are through the Lake District's bulk-ordering program (March 1 annual deadline), the UW-Madison Arboretum plant sale (May 12), or our upcoming plant sale at the Oakland Town Hall (May 19). Be sure to visit our website or Facebook page for further details.

#### **Step 4: Construction**

Now it's time to put your back into it and start digging! Shoot for a depth of 4-10 inches, depending on soil type. Make sure the bottom of the rain garden is as level as possible, and that you allow a place for

water to exit during larger storms. If needed, any soil you remove while digging the depression can be used to create a containment ridge (or berm) at the down-slope edge of the garden. Don't forget to work compost into clay soil to improve drainage. Lining the garden with landscape fabric can help with weed control, but not all sources recommend it. Whether or not fabric is used, protect plants once they're in place by adding 2-3 inches of mulch.

Water your garden as needed until plants become established, and weed as necessary. Don't be disappointed if some if some plants don't put on a good show during their first couple growing seasons. They'll be busy pushing deep roots down into the soil that will help your rain garden function as it should. •

-Jeanne Scherer

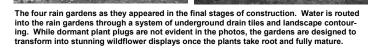
ain gardens... There's something in the name that conjures peaceful, relaxing images. And in reality, they're usually just that: a tranquil spot in your yard where birds and butterflies gather, and where colorful wildflower blooms sway gently in the summer breeze. But we also know they can play a powerful role in combating stormwater and protecting lake quality.

Unlike traditional gardens, rain gardens are planted in well-drained depressions, and strategically located to collect rainwater that washes from our roofs, driveways and other hard surfaces. Usually, they feature deep-rooted prairie plants that efficiently channel water into the ground. This, in turn, reduces the volume of storm runoff that leads to flooding and soil erosion, and that promotes excessive weed and algae growth in our lakes and streams.

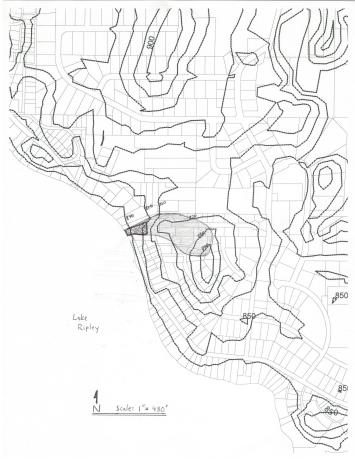
Jim and Janice Hoiby, owners of the Lake Ripley Lodge (Friedel Avenue), decided to take advantage of these benefits when they undertook an extensive landscaping project last fall. Today, they're the proud owners of four rain gardens and a new crop of native lakeshore plantings. These landscape improvements will serve not only to enhance the look and function of their property, but also to protect the lake by capturing large volumes of storm runoff.







The Lodge property is part of a six-acre subbasin of the Lake Ripley watershed that drains directly to Lake Ripley. This subbasin contains all or part of 19 residential parcels, including the Hoiby's. Six acres may not seem like a significant amount of area, but it does produce a tremendous amount of runoff that gets funneled right past the Lodge and into to the lake.



The six-acre, kidney-shaped subbasin is shown on the above parcel map. The map also includes topographic contour lines showing a 50-foot elevation change within the subbasin Direction of water flow is from east to west toward the lake. The Lake Ripley Lodge property is represented by the hash marks at the far west end of the subbasin.

During a 24-hour storm that produces 2.78 inches of rain—an event we can expect on average every two years (called the "2-yr, 24-hr storm")—over 100,000 gallons of runoff are produced within the subbasin. This is the amount of water that cannot be readily absorbed into the ground. The Lake Ripley Lodge parcel, which generates about 9% of the total, is positioned at the lowest point in the subbasin, meaning it also receives runoff from the parcels above.

In the middle of one 2010 storm, the Hoibys captured video showing rivers of storm runoff flowing past their yard toward the lake. It was yet another piece of evidence that motivated the Hoibys to work out a plan and cost-sharing arrangement with the Lake District to start addressing the problem. The plan called for a combination of rain gardens, water diversions, rain barrels, and shoreland vegetation as part a comprehensive approach to stormwater management. Given its scope and other project-ranking considerations, the initiative was eventually awarded a 50% cost-sharing grant from the Lake District.

Continued >>

oin us for a FREE seminar on Saturday, March 24th, from 8:30-1:00 at the Oakland Town Hall. Lake scientists will explain how our lake works, share insights obtained through lake-bottom sediment coring, delve into the mysteries of algae growth, and explore the status of the aquatic plant community and weed-control laws.

Lake Ripley Seminar

To reserve your spot, **RSVP by March 20th** by calling (608) 423-4537 or e-mailing ripley@oaklandtown.com, and indicate the number of people attending.

# A Primer on Lake Systems, Algae, Aquatic

Plants, c	and Plant-Management Laws
8:30 am	Doors Open (breakfast treats and refreshments)
9:00 am	Welcome & Program Overview John Molinaro, Chair, Lake Ripley Management District
9:05 am	How Our Lake Works Patricia Cicero, Jefferson County Land Water Conservation Department
9:30 am	<b>Long-term Water Quality Trends</b> Paul Garrison, Wisconsin DNR
10:00 am	<b>Algae</b> Gina LaLiberte, Wisconsin DNR
10:30 am	<b>Break</b> (snacks and refreshments)
10:45 am	Aquatic Plants Michelle Nault, Wisconsin DNR
11:45 am	Laws and Considerations for Managing Nuisance Plant Growth Susan Graham, Wisconsin DNR
12:45 pm	Q&A with the Experts

## **Speaker Bios**

Patricia Cicero has a MS in Water Resources Management from the University of Wisconsin-Madison. She has worked on lake and water quality issues for the Jefferson County Land and Water Conservation Department for 12 years. Patricia will cover the basic physical, chemical, and biological



characteristics of lakes, and the role aquatic plants play in lake ecosystems.

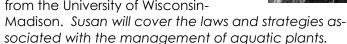
**Paul Garrison** has a MS from Montana State University and has been with the Wisconsin Department of Natural Resources since 1977. He has worked on a variety of lake problems as a research scientist, but is particularly interested in



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evaluating long-term trends by looking at the fossilized evidence contained in lake-bottom sediment cores. Paul will present findings from sediment coring performed on Lake Ripley, including long-term water quality trends relative to major changes in land-use practices.

Susan Graham has worked in Wisconsin's inland lakes for 20 years with the Wisconsin Department of Natural Resources. She has a BA in Botany and an MS in Water Resources Management from the University of Wisconsin-



**Gina LaLiberte** has a BS in Biology and a MS in Resource Ecology Management from the University of Michigan. She also did graduate work at Bowling Green State University in Ohio. She has worked for the Wisconsin De-



partment of Natural Resources since 2000, specializing in paleolimnology and aquatic bioassessment using algae. Gina will discuss the types of algae found in lakes, the effects of zebra mussels on the algal community, and trends in algae populations.

Michelle Nault moved to Wisconsin in 2002 to attend the University of Wisconsin-Madison, graduating with degrees in Biology, Zoology, Conservation, and a certificate in Environmental Studies. She has worked as a lakes research scientist for the Wisconsin Department of Natural Resources for the past several years,



conducting research related to aquatic plant ecology and invasive species management. Michelle will explain how aquatic plants are sampled in lakes. She will also present data from Lake Ripley's aquatic plant surveys, including dominant plants, invasive species, summary statistics and a variety of quality indicators. ♦

## Lake Ripley Electrofishing Report

These annual surveys are performed at night using a large boomshocker boat. An electric current temporarily stuns fish in the immediate vicinity of the boat, allowing them to be identified and measured before being returned back to the lake. Electrofishing occurs in fairly shallow water, moving parallel to shore, and within pre-selected lake zones representing a range of habitat types.

2011 sample zones included two stations, each 1.5 miles long (3 miles and 1.72 hours total effort), where gamefish were specifically targeted. Two additional stations, each 0.5 miles long (1 mile and 0.67 hours total effort), targeted all fish species. Length measurements were taken from a subset of the total fish collected in each species category. Data were then used to estimate relative abundance; the size structure of sampled gamefish and panfish populations; and general fishery health in terms of growth and recruitment.

#### **Gamefish Summary**

Largemouth bass	2011	2010	2009	2008
<b>Total Catch:</b>	273	190	95	81
Catch Rate (fish per hour):	114	67	37	29
Length Range (inches):	2.1-18.5	2.8-15.2	1.8-15.6	2.4-16.0
Average Length (inches):	7 9	8.7	9.6	99

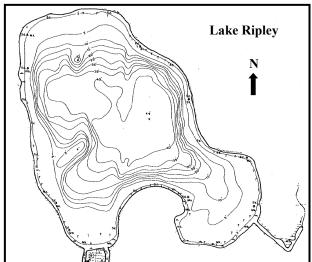
In 2011, the largemouth bass catch rate was higher relative to earlier fall surveys, but with a comparatively lower average length. The number of largemouth bass over 14 inches (current legal harvestable size) was 5% in 2011, which is consistent with findings from recent surveys. Juvenile ("young-of-year") fish produced in 2011 represented 20% of the fish sampled. The largemouth bass population is naturally reproducing, and no stocking is currently conducted by Wisconsin DNR.

Smallmouth bass	2011	2010	2009	2008
Total Catch:	12	12	6	11
Catch Rate (fish per hour):	5	4	2	4
Length Range (inches):	3.1-14.9	5.1-16.3	3.1-11.7	7.9-13.3
Average Length (inches):	8.7	10.3	8.2	11.7

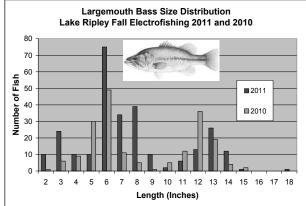
Smallmouth bass were first documented in the lake during a 2004 electrofishing survey. Natural reproduction is occurring, and no stocking is currently conducted by Wisconsin DNR.

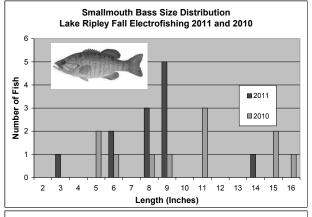
Walleye	2011	2010	2009	2008
Total Catch:	20	43	31	28
Catch Rate (fish per hour):	8	15	12	10
Length Range (inches):	7.5-18.2	7.4-19.2	6.9-19.3	8.9-19.9
Average Length (inches):	14.3	13.1	13.9	16.5
Stocked Fingerlings:	14,630	7,524	14,630	0

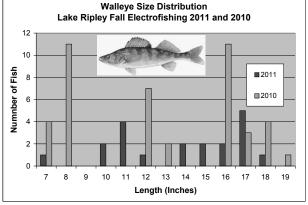
Walleye catch rates and size distributions are comparable to those found in prior surveys. The walleye fishery is sustained by regular stocking due to limited natural reproduction.



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## **Electrofishing (cont.)**

Northern pike	2011	2010	2009	2008
Total Catch:	3	10	6	7
Catch Rate (fish per hour):	1	4	2	3
Length Range (inches):	20.0-20.5	11.1-35.0	16.6-41.7	22.8-29.7
Average Length (inches):	20.3	23.2	26.6	26.3



Panfish Relative Abundance Lake Ripley Fall Electrofishing 2011 (Number of fish sampled = 345)

Yellow perch

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Black crappie

Electrofishing is not an effective method for sampling northern pike, as pike population data are best obtained using fyke nets during spring spawning.

#### **Panfish Summary**

Lake Ripley's panfish community is generally comprised of bluegill, yellow perch, rock bass, white bass, pumpkinseed sunfish, black crappie and green sunfish. Bluegill were the most abundant panfish species sampled.

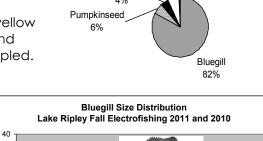
Bluegill	2011	2010	2009	2008
<b>Total Catch:</b>	285	102	81	113
Catch Rate (fish per hour):	425	123	121	136
Length Range (inches):	1.1-8.5	1.5-7.7	1.4-7.7	1.9-8.3
Average Length (inches):	3.7	4.3	5.4	4.2

In 2011, the bluegill catch rate was above average relative to earlier surveys. A relatively low 9% of the bluegill sampled were greater than 6-inches in length, compared to 22% in 2010, 44% in 2009, and 14% in 2008.

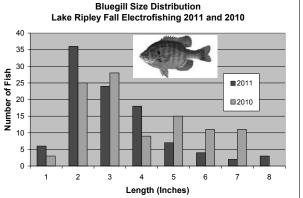
Yellow Perch	2011	2010	2009	2008
Total Catch:	23	24	10	4
Catch Rate (fish per hour):	34	29	15	5
Length Range (inches):	1.9-7.6	2.4-6.1	2.3-5.2	2.2-5.8
Average Length (inches):	4.6	4.3	3.6	3.8

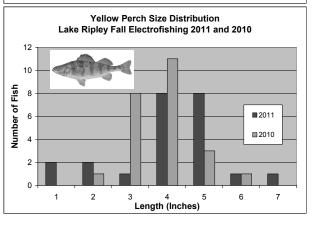
Pumpkinseed	2011	2010	2009	2008
Total Catch:	20	1	3	11
Catch Rate (fish per hour):	30	1	5	13
Length Range (inches):	3.5-7.6	N/A	3.8-7.3	3.2-6.7
Average Length (inches):	5.8	N/A	5.9	5.9

Rock bass	2011	2010	2009	2008
<b>Total Catch:</b>	15	9	5	0
Catch Rate (fish per hour):	22	11	8	0
Length Range (inches):	5.4-9.3	4.8-9.0	4.3-8.7	N/A
Average Length (inches):	7.4	6.9	6.9	N/A



Rock bass





## **Non-game Species**

Lake Ripley supports a diverse, non-game fish community. Species include bowfin, grass pickerel, white sucker, brook silverside, golden/emerald/mimic shiners, bluntnose and fathead minnows, yellow/black/brown bullhead, longnose gar, central mudminnow, blackstripe topminnow, Johnny darter, lowa darter, bigmouth buffalo and common carp. Historically, the lake also supported several intolerant fish species (blackchin shiner, blacknose shiner and banded killifish), as well as rare "Special Concern" species (lake chubsucker and least darter), and one "Threatened" species (pugnose shiner). Fall electrofishing is not the best method for sampling most of these species. However, lake chubsuckers were documented during the 2011 survey, and have been found in prior surveys. Small numbers of longnose gar, white sucker, bowfin, bigmouth buffalo, grass pickerel, golden shiner, bluntnose minnow, common carp, brook silverside and yellow bullhead were also sampled.

We thank Laura Stremick-Thompson, Wisconsin DNR Fisheries Biologist, for the information and charts used in this article