

Lake Lines Editor Mike Kornmann, UW-Extension Community Development Agent www.uwex.edu/ces/cty/burnett/

Newsletter Design Marleen Seul,

Fall/Winter 2006 Issue

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Aquatic Invasive Species: Burnett County Focus for 2006

The Burnett County Aquatic Invasive Species Program kicked off in high gear this year thanks to a Department of Natural Resources Aquatic Invasive Species grant that was generously matched by the following Burnett County Lake Associations: Yellow Lake, Wood Lake, Love Lake, Austin Lake, and Mud Hen Lake.

The threat from aquatic invasive species comes from their ability to overtake native aquatic plants and form dense mats of vegetation. Once established, aquatic invasive plants can be extremely difficult to eradicate. The invasive plant Eurasian water milfoil was found on both Ham Lake and Round (near Trade Lake) in Burnett County in 2004. This year's program made lakes near these infested lakes and lakes with the busiest boat landings high priorities to prevent further spread of this and other aquatic invasive species.

Jena Seglelstrom, AIS intern, provided public education, boat inspections, and aquatic plant inventories at all public boat landings in Burnett County. Jena also assisted consultant Matt Berg with a full lake aquatic plant

survey on Big Wood Lake. The program used the Wisconsin Clean Boats, Clean Waters materials and techniques to provide information and to monitor landings throughout Burnett County. The Clean Boats, Clean Waters program trains volunteer monitors across the state to educate boaters about the need to clean aquatic plants from boats to prevent the spread of aquatic invasive species. Jena checked boats and trailers and spoke with boaters about the threat of invasive species and the importance of removing aquatic plants when entering and leaving lakes. Informational materials from the Clean Boats, Clean Waters program were left on vehicles parked at the landings.

By Cheryl Clemens & Jena Segelstrom

The Burnett County AIS program reached all 58 Burnett County developed boat landings at least twice this summer and high priority lakes several times over the summer. On average, a landing was monitored for two or three hours with an emphasis on the high use times: early morning and evenings, Friday through Sunday and holidays.

During the course of the summer (Memorial Day-Labor Day), the AIS program reached a total of 926 PAGE 2

President's Column

It is with excitement and anticipation that I assume the position of president of the Burnett County Lakes and Rivers Association (BCLRA).

Cruising the shores of North Sand Lake for the past 50 years has allowed me to observe dramatic changes in man's impact on our natural resources. Some of the change is wonderful and healthy. Some, if it continues, will destroy the natural resource that we all cherish. Thank goodness for the BCLRA and the lakes and rivers associations that continue to serve our precious waters. Many dedicated individuals have created and developed the BCLRA and thirty eight plus lakes and rivers associations. Thank you for your commitment.

Based on the groundwork that has been established, the task of monitoring our lakes and rivers in Burnett County has at least some focus. As we near the end of 2006, many lakes associations are well entrenched in the issues that threaten our waters. Many individuals, as part of their associations, have dedicated their time and money to making others aware of the dangers that exist. From boat landing inspections, to shoreline violation, to exotic plant species combat, concerned association members are pitching in to help.

Speaking for the BCLRA, it takes all of us who love and cherish our wonderful resources to keep them healthy. The BCLRA can help you as an individual or your lake or river association. There exist numerous resources/agencies that the BCLRA may be able to refer to you. Let us help you.

With this in mind, be aware that any association is only as strong as its individuals. As an individual whether you are a part of an association or not, you can make a huge difference in the monitoring of our lakes and rivers. As with nature, pay attention, be observant to what is taking place on your lake or river on a daily basis. There are changes occurring almost daily and many are not in the best interest of our natural resources. If you see something that does not look healthy, call someone.... the DNR, the sheriff, your association president, your township chairman, or the BCLRA.

As Aldo Leopold tells us "Wilderness is a resource which can shrink but cannot grow".

Thank you for listening. We tinued support.

Sincerely,

Roger Noe 1-715-635-6309



Burnett County Lakes & Rivers Association **Board Members** Roger Noe President * Greta Michaels Secretary * Ralph (Buck) Gooding Treasurer * David Dopkins Board of Directors * Gordon Hesselroth Board of Directors * Jim McLaughlin Board of Directors * Tom Twining Board of Directors * Fred Kruger Board of Directors * Susan Wallin

BCLRA News

What's in a mission statement and why? By Mike Kornmann

UWEX Community Development Agent

Each day members of our lakes associations go out and do great work. Yet do all of the members of the association know what their association's mission is? Is a mission statement the same as a vision statement? And why have a mission statement anyway?

Too often mission statements are developed early on in an organization's development and then are buried in the by-laws and forgotten years later as the founding members move on. Mission statements ultimately are statements of purpose and answer why an organization exists. More specifically, a mission statement should describe what social or political problems an organization seeks to solve. A vision statement on the other hand is a statement of how an organization hopes to function including a description of the means.

Why should your lake association have a mission statement anyway? Mission statements help an organizations focus on what is truly important and clarifies the organization's purpose. It can

help reduce conflict by being clear on what goals should be pursued or problems addressed. Most conflict centers around solutions and if the goals of an organization are unclear, the opportunities for more conflict are increased tremendously. Lastly, a mission statement gives explicit attention to philosophy, values, and culture. In our day to day operations it is too easy to forget about the bigger ideals of how we want our organizations to work. A mission statement can reflect these values. If you haven't looked at your mission statement in a while, you may want to review it and see if it is still relevant. Your founding members mission may need updating. The following are key elements to a good mission statement:

- Is short and sharply focused
- Is clear and easily understood
- Defines why we do what we do; why the organization exists
- Does <u>not</u> prescribe <u>means</u> (the how you are going to do things)
- Is sufficiently broad
- Provides direction for doing the right things
- Addresses our opportunities
- Matches our competence
- Inspires our commitment
- May identify our most valued stakeholder(s)

A mission statement should describe what social or political problems an organization seeks to solve.

• Says what, in the end, we want to be remembered for (including values)

If you decide to update your mission statement make sure to get buy in from the people in your organization. Many

can't force a mission statement on people that don't believe it what it says. Lastly, think strongly about making the statement public in your literature, letterhead, web page, and boat landing signage. This way, your members, customers, and other stakeholders will know what you are about and what you stand for.

Sources:

Bryson, John, M. <u>Strategic Planning for Public and</u> <u>Nonprofit Organizations</u> 1995

Druckers, Peter. <u>Managing the Nonprofit Organiza-</u> <u>tion</u>. 2006

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The Secchi Disk and Our Eyes -

by Larry Bresina, Lake Leaders Institute Crew V, with contributions from Tim Asplund,

To the citizen lake monitor and professional lake manager, the Secchi disk is an indispensable tool for assessing lake clarity. It has provided an index of water body clarity throughout the world for over 100 years. The Secchi depth measurement is valuable because it is simple, low cost, relates well to our general perception of a lake's clarity, and can be compared to a large historical database. Yet we tend

to interpret this measurement in a variety of ways.

Sometimes we consider it a rough measurement, giving a ballpark estimate of a lake's clarity. At other times we rely on the Secchi disk as a quantitative tool to help make costly lake management decisions. Most often we can select a tool designed just right for the specific task at hand.

When I made up some "Chex Mix" last Christmas, I measured out the Worcestershire sauce with a teaspoon and the Chex cereal with a quart-size measuring container. I used two different tools because I needed to measure the Worcestershire sauce much more accurately than I needed to measure the Chex cereal. The citizen lake monitor usually has access to only one tool for measuring lake clarity – the Secchi disk.

So should the Secchi disk measurement be considered a ballpark tool or a highly precise instrument? The answer is that it depends on the precautions taken while making the measurement. The Secchi depth measurement can be on par with and even exceed the utility of modern electronic instruments when following a well-defined protocol. To explain why following the protocol is so important, below is a discussion on the general science of the Secchi disk measurement and why variability can be large - or small.

How Does the Secchi Disk Work?

The Secchi depth measurement involves 4 basic elements common in optical measurements: a radiation source (sunlight); a medium that the radiation travels through; an object (the Secchi disk), and a sensor (our eye).

The sun's radiation consists of various forms such as ultraviolet, visible, and infrared. Only the visible portion is important in the Secchi depth determination because our eye is the sensor. The medium includes outer space, the atmosphere, and the lake water. Visible light travels largely unobstructed from the sun to the atmosphere. The atmosphere absorbs and scatters (deflects) some of

the light before it reaches the earth. This absorption and scattering is usually a consistent amount, except for variations caused by clouds and pollutants. When the sunlight reaches a lake surface, the light consists of both rays coming in a straight line from the sun and rays that strike the lake from various directions. At the lake surface some light bounces off (reflects), especially early and late in the day when more light strikes the water at low angles. While traveling through the water, the light intensity decreases (attenuates) much more per unit distance traveled than while in the atmosphere.

This larger decrease partially results from the

attenuating characteristics of pure water. But most of the decrease is usually due to absorption and scattering by algae, decaying particles, suspended soil particles, and colorants (yellow to brown) leeched from plant material such as fallen leaves.

The effect of these light attenuating materials in the water is what we sense when we make personal observations on a lake's clarity. This effect is also what the

Secchi disk measures. After reflecting from the disk, the light attenuates further as it travels back up through the water to the eye

What's a Secchi Disk?

Wisconsin uses an 8-inch diameter disk separated into four quadrants which alternate from white to black.

The disk is attached to a graduated rope and has a bottom weight to keep it horizontal as it is slowly lowered into the lake.

Wisconsin's Protocol

The general measurement protocol in Wisconsin is to take readings from the shady side of an anchored boat on a clear and calm day between 10 a.m. and 4 p.m. Slowly lowering the disk until it disappears gives one data point. Slowly raising the disk until it reappears gives a second data point. The midpoint between depth of disappearance and reappearance is the Secchi depth result.

of the lake monitor.

Now we are at the last stage of our Secchi disk reading - detection of the light by our eyes. Our eyes and brain work remarkably together to determine when they no longer can distinguish between the white and black quadrants of the disk surface.

What Are Sources of Variability?

As you can see from the above brief description, factors other than a lake's water clarity itself can

affect the results obtained with this simple measurement. The more important of these external factors are:

- 1. Whiteness (and blackness) of the disk
- 2. Altitude of the sun
- 3. Surface ripples and waves
- 4. Shadow of the boat or observer
- 5. Surface reflections off the water
- 6. Clearness of the sky
- 7. Observer vision characteristics

(e.g., abnormalities, adaptation, sunglasses, etc.)

8. Number of repeated measurements

Because of external influence, investiga-

tors consider the Secchi depth an apparent optical property of the water. An inherent property would not have external influence. This does not make the Secchi

depth measurement a poor measurement. But it does bring home the point that minimizing the external factors, or making them as constant as possible, is important to make the measurement precise.

Following a well-defined measurement protocol is essential to maximizing the value of the Secchi depth measurement. For example, taking the Secchi depth within the 10 a.m. to 4 p.m. period recommended in Wisconsin helps minimize the influence of the sun's altitude. Based on one study of the solar altitude effects, Secchi depth values would vary by about 6% due to altitude changes in mid summer Wisconsin over the 6-hour measurement period. Over the full May-September period, the variation increases to 15% because the sun's altitude is lower at the beginning and end of the summer season. Taking measurements outside the times recommended in the protocol will tend to introduce additional variability.

Another example is the effect of waves. Most monitors have experienced the difficulty of taking Secchi depths when the lake is rough and try to take readings when the lake is calm. Waves contributed an average 10% decrease in Secchi depth values when 5-inch waves were present in a recent study. This study and others have demonstrated that a view-scope (a tube between the eye and water to block out waves and glare) can decrease this effect of waves.

The above examples demonstrate the variations caused by individual factors can exceed a 10% range. The sum varia-

tion resulting from several factors can increase the variability far beyond that of just one factor. Although studies to date demonstrate potential protocol improvements, the studies are insufficient to be sure that changes would produce an overall benefit, especially in light of the large existing Secchi depth database using Secchi.

Furthermore, a protocol change that increases complexity must be weighed against the

possibility of reducing the number of times that monitors truly follow the protocol. The Wisconsin Citizen Lake Monitoring Network is conducting several studies this year to learn more about the importance of factors mentioned above. These studies will address a goal to reduce measurement variability, thereby improving ability to detect "real" clarity variations of a lake over time as well as differences among lakes.

In the meantime, careful attention to following the existing protocol will keep variation to a minimum.

One step all monitors could add to improve precision or reduce variability is to take several consecutive readings on the day of sampling and report the average. This change would not jeopardize the current protocol. Averaging several readings is a well-documented and statistically



Continued from page 1

people directly and 120 vehicles indirectly through informational packets. Fifty-eight percent of the people contacted were already aware of the law that states that no watercraft may enter a body of water with aquatic plants attached to either the trailer or watercraft itself (before the Clean Boats, Clean Water contact). No watercrafts or trailers were found entering the water with aquatic plants on them, and all watercraft and trailers leaving the water were cleaned off of all aquatic plants



Where: Burnett County Government Center

Who: Any lake association involved in the camera grant application (five lakes); or other lake associations who are interested in learning more about the project.

What: The project entails putting automated cameras at landings to ensure boats are clean of weeds and of potentially dangerous invasive species. The grant, if funded, will fund cameras

before leaving the landing.

Aquatic plant surveys

Public boat landings were surveyed for aquatic plants because invasive plants will most likely show up at the landing area first. The surveys provided not only an inventory of aquatic invasive species but also a baseline of native aquatic plants present. During these surveys, forty-two different aquatic plant species were found. Surveyors found two aquatic invasive species: curly leaf pondweed and Eurasian water milfoil. Though curly leaf pondweed was at six public landings, it was scarce when found. The only public landing with Eurasian water milfoil was Round Lake, known previously to have EWM.

The aquatic plant survey for Big Wood Lake used the Point Intercept Method provided by DNR with approximately 800 points surveyed. Wood Lake has a diversity of native aquatic plants with 46 species present in the shallower areas next to the shore. Because of limited water clarity, aquatic plants were not found deeper than 10 feet. Curly leaf pondweed was the only invasive species present. It was scarce when found.

The Land and Water Conservation Department will be seeking matching funds for the program again in 2007 and 2008. Interested individuals and lake association representatives should contact Dave Ferris, County Conservationist.

If you have any questions regarding this report or would like additional information, please contact the Burnett County Land and Water Conservation Department at 7410 County Road K, #109 Siren, WI 54872 or (715) 349-2186.

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This BCLRA Newsletter that comes to you each spring and fall is made possible by the many wonderful volunteers who for the past few years have given their time to assemble and prepare it for mailing. We thank them for their assistance!

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Pat Olson

"Common highways and forever free"- Wisconsin's Public Trust Doctrine

By Michael Cain, Department of Natural Resources

Article IX, Section 1 or the Wisconsin Constitution provides that "...the river Mississippi and the navigable waters leading into the Mississippi and St. Lawrence, and the carrying places between the same, shall be common highways and forever free, as well to the inhabitants of the state as to the citizens of the United States...." This language provides the basis for the Public Trust Doctrine in navigable water in Wisconsin.

With 2003 designated as the Year of Water in Wisconsin to celebrate the state's remarkable water resources and address future water challenges, it's vital to understand and consider the history of the protections that have been put in place to assure the state's waters remain "common highways and forever free."

The "common highways and forever free" language in the Constitution can be traced back to ancient Rome, when Emperor Justinian, in 528 AD condensed prior decrees of Emperors into a code of law that included the phrase, "By the law of nature these things are common to all mankind, the air, running water, the sea and consequently the shores of the sea." These same concepts were incorporated into English law in the Magna Carta, in 1225, under which the sovereign -- the King -- owned the public lands, but held them in trust for the public, and that all citizens had the right to use and enjoy those public resources.

This same "doctrine of the public trust" was brought to colonies in America and incorporated into the laws of the original 13 states. As settlement continued to the west, it was declared in the Northwest Ordinance of 1787 that "The navigable waters leading into the Mississippi and St. Lawrence...shall be common highways and forever free...." This language was obviously adopted as part of the Wisconsin Constitution in 1848.

Over the 155 years Wisconsin has been a state, the state Supreme Court, the Legislature, the Depart-

ment of Natural Resources, and the citizens of the state have been responsible for administering this public trust established in the Constitution. The Wisconsin Supreme Court has been very active in upholding the trust doctrine and has broadly construed it. Citizens have routinely brought violations of the Public Trust Doctrine to the court seeking remedies. Additionally, the Public Trust Doctrine has evolved as society's understanding of the ecology of water and waterways and the uses made of our waters have changed over time.

In 1914, in the Husting case, which affirmed that all citizens had the right to hunt on the waters of the Rock River as they flowed though the Horicon Marsh, the state Supreme Court noted the public nature of all state waters and recognized the need to broadly construe the trust doctrine so "the people reap the full benefit of the grant secured to them."

The court admonished that, at the time of statehood, the State of Wisconsin "became a trustee of the people charged with the faithful execution of the trust created for their benefit" and that the "wisdom of the policy which steadfastly and carefully preserved to the people the full and free use of public waters cannot be questioned, nor should it be limited by narrow constructions."

In the 1930s, the courts noted that as people began to use waters for more recreational activities, "sailing, rowing, canoeing, bathing, fishing, hunting, and skating" are public uses that are protected under the trust doctrine.

In the 1950s, both the Legislature and the Supreme Court noted that enjoyment of natural scenic beauty is a protected public right. In the 1960s, as the Clean Water Act was being adopted on the federal level, and as water quality problems became critically

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important in Wisconsin, the Wisconsin Court noted that the right to clean, unpolluted waters was an important consideration under the Public Trust Doctrine.

The state Supreme Court also held that state officials must consider the cumulative impacts of fills and structures in waters, noting that: "A little fill here and there may seem to be nothing to become excited about. But one fill, though comparatively inconsequential, may lead to another, and another, and before long a great body of water may be eaten away until it may no longer exist."

In 1972, the Court noted that wetlands, which were once considered "wasteland," now are recognized to play a "vital role in nature" and that protection of such areas is critical "not only to promote navigation but also to protect and preserve those waters for fishing, recreation and scenic beauty."

The Legislature has adopted regulations, which are administered by the DNR and local municipalities, to assure that the "public rights and interests" in state surface waters and wetlands are protected under the trust doctrine. The courts have recognized that those citizens who own property abutting waters have rights to use their frontage for access to the water and have the right to "reasonable use" of the water for such things as piers and boat storage. These private rights are, however, subject to the rights of the public under the public trust doctrine.

This tension between the rights of the public and rights of private landowners often results in controversy. The Wisconsin Supreme Court has repeatedly made it clear that regulations put in place to prevent harm to these public trust waters are reasonable and necessary under the Public Trust Doctrine and do not constitute a taking of private property.

It is sobering, to look back over the 155 years of statehood at the impacts people have had on Wisconsin's lakes, rivers, and wetlands. But the doctrine that these resources are held in public trust has greatly helped Wisconsin protect its water and wetland resources.

During this same time we have also made great strides in understanding the ecology and interconnectedness of natural systems. We are developing new information, through research and experience, concerning how we can preserve habitat and scenic beauty while allowing development of water bodies to occur.

There is more work to do and many challenges remain. But the doctrine that was handed down to us through time assuring that state waters are "common highways and forever free," will continue to reinforce our efforts to assure that



North America's Largest Water Bird, Thriving in Burnett County

By John Haack, UW Extension Natural Resources Educator, St. Croix Basin

Once extirpated from Wisconsin, the state's Trumpeter Swan population is now estimated at more than 500 birds. Many of these swans got their start on wetlands and lakes here in Burnett County.

Trumpeters were reintroduced to Burnett County's Crex Meadows in the late 1980s. Swans eggs collected in Alaska were hatched at the Milwaukee Zoo and the cygnets (young swans) were transported to Crex. The swans were raised through a process called "decoy raising". The technique allows biologists in large swan decoys to watch over the swans yet preventing cygnets from imprinting on their human foster parents. It proved to be successful and the original swans went on to mate and raise their own young. Thanks to these efforts, Crex provides excellent Trumpeter viewing along Phantom Flowage and Hwy F north of Grantsburg.

Trumpeter swans are the largest waterfowl species in North America. Adults are all white and stand up to 4 feet tall, weighing 20-30 pounds with up to a 7-foot wingspan. Trumpeters form pair bonds as early as their second winter and some may nest for the first time at age three years. Most however, don't nest until they are four to six years old. Trumpeters mate for life and may live for 20 to 30 years. Young swans, called cygnets, have grayish plumage and are smaller, but are significantly larger than Canada geese. During the spring and fall of the year you may observer the slightly smaller Tundra Swan as they migrate from tundra areas of Alaska and Canada through Burnett County on their way to wintering areas.

Pat Manthey, avian ecologist from the DNR explained "While the state's population is growing, swans are still susceptible to poisoning from lead shot and this year maybe worse due to lower water levels" Manthey received reports of swan mortality on Crex Meadows late this summer. It appears that this year's lower water levels allow swans to forage in previously deep water areas, where swans are gaining access to lead shot laden sediments previously beyond reach. Lead shot once legal for waterfowl hunting does not sink into the depths, but remains suspended by dense sediments and plant roots, still within reach of swans. In Wisconsin, lead poisoning is a significant mortality factor for the Trumpeters. Of 110 Trumpeter Swan carcasses submitted to the Wisconsin Department of Natural Resources for post-mortem examination between 1991 and 2004, 34 deaths (~31%) were attributed to lead poisoning. Other causes of mortality include shooting and power line collisions.

While some Wisconsin Swans migrate as far south as St. Louis, many local swans spend the winter on open water areas below Nevers Dam on the St. Croix River and further downstream at Hudson. As the swan population expands their habitat selection is becoming less selective, remote, and private and a bit more tolerant of humans. So don't be surprised if a Trumpeter pair arrives on a lake or wetland near you. Manthey cautions that swans are very powerful birds and especially protective of eggs and nest locations, so remember to give them space and observe and enjoy these magnificent birds from a distance.

You can read more about Trumpeter Swans on line at this web site:

http://www.dnr.state.wi.us/org/land/er/factsheet s/birds/swan.htm BURNETT COUNTY LAKES & RIVERS ASSOCIATION 7410 COUNTY ROAD K, #107 SIREN, WI 54872



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