

LAKE TIDES

A newsletter for people interested in Wisconsin Lakes

Volume 17 No. 2

Summer 1992

ORW: Outstanding Resource Waters

There are some waterbodies in the state that are truly public waters. They have little or no private ownership and no formal lake organizations to speak in their behalf. The following articles focus on what is being done on these water bodies.

Antidegradation and the Willow Flowage by Bob Young

At a size of more than 5,000 acres, the Willow is among the few remaining places in Wisconsin where one can still enjoy a boating experience in a remote setting. Like the Chippewa, Turtle/Flambeau and Rainbow Flowages, historical land ownership patterns have left the Willow's shoreline virtually undeveloped. Its naturally tea-colored waters support a trophy fishery and nurture myriad life forms, including high concentrations of eagles and ospreys. The Willow and the other "wild" flowage are a paradox. Created specifically to serve the economic needs of a young, developing Wisconsin, they have become some of the last bastions of water "wilderness." In contrast, many of the state's natural lakes have become crowded aquatic playgrounds and urban neighborhoods.

Some would agree that the expansive Willow Flowage, in western Oneida County, fits the description as one of the state's highest caliber waters, and is deserving of special protection status. That status is based on Wisconsin's antidegradation policy. The Department's

antidegradation policy for Outstanding Resource Waters (ORW) is designed to protect the state's highest quality lakes and streams from any lowering of existing water quality. Advocates of ORW status for the Willow point toward its unique, wild character, and its similarities with the Chippewa and Turtle/Flambeau Flowages, both ORW candidates. Others would argue that while the Willow is certainly a significant natural resource, special protection status may impede certain economic development they want in the area. They feel that the current classification of the Willow is sufficient to protect current use of the flowage. The debate has been brought sharply into focus since the discovery of a large mineral deposit in the Willow's watershed. If developed into a mine, the Willow could be a potential recipient of treated wastewater from the operation.

The antidegradation status of the Willow has yet to be decided. That decision will determine the future of the Willow's unique environment, and should reflect the wishes of Wisconsin's citizens.

Bob Young is Inland Lakes Coordinator for the DNR North Central District.

ANTIDEGRADATION POLICY

The amended Federal Clean Water Act of 1987 directed each state to develop an anti-degradation policy to protect clean water. To carry out the law in Wisconsin, the Legislature approved a system in 1989 that classifies state waters based on their water quality characteristics, fish and wildlife values, and recreational uses (NR 102). The Department of Natural Resources revised its "antidegradation policy" to enhance the future quality of Wisconsin waters.

In March, 1989, antidegradation rules took effect. They identified some of the state's highest-quality water resources and either prohibited or

restricted the discharge of waste water into those waters from point sources such as factories and sewage treatment plants.

Purpose

Antidegradation rules minimize or prevent pollution from reaching waters that already meet clean water standards. Most of Wisconsin's lakes, rivers, and streams fit this description. The antidegradation rules will ensure that Wisconsin's waters are kept clean for future generations.

Impact

The antidegradation policy attempts to balance environmental protection with economic growth and community needs. Depending on the quali-

ty and value of a particular water, NR 207 prohibits or restricts point source discharges (waste water from municipal and industrial facilities) to protect Wisconsin's highest-quality waters. These high-quality waters are identified by a classification system described in NR 102 (see box). They include state and national Wild and Scenic Rivers and 125 of Wisconsin's top trout waters.

In the future, the antidegradation policy may also restrict dredging, dam construction, irrigation, shoreline development, logging, pesticide application, and other activities that could potentially harm high-quality waters.

Classification Categories

1. Outstanding Resource Waters receive the highest level of protection. No lowering of current water quality is allowed. Waste water discharges into these waters are allowed only if the effluent is as clean as, or cleaner than, water in the stream receiving the discharge.

2. Exceptional Resource Waters can receive increased discharges from existing point sources or new discharges from communities that currently are unsewered, but only if these new waste water discharges are the best way to solve a public health or groundwater contamination problem. Water quality standards would still have to be met in these cases. NR102.11 lists Exceptional Resource Waters.

3. Fish and Aquatic Life Waters can receive new or increased waste water discharges if the discharge is needed to "accommodate important economic and social development in the area." Industrial or municipal dischargers must show that any proposed lowering of the water quality is in the public interest and is absolutely necessary. In no case can water

quality fall below existing water quality standards designed to protect public use of a stream or lake (swimming, fishing, etc.) or to protect fish and aquatic life.

4. Great Lakes Waters include Lakes Michigan (and Green Bay) and Superior and their tributaries. The level of toxic pollutants in waste water discharges is severely restricted in Great Lakes waters to prevent 21 of the most persistent toxic contaminants from building up in fish and sediment and threatening public health or the environment. Lakes Michigan and Superior and their tributaries may also be classified as outstanding or exceptional waters to protect them from other pollutants not defined as toxic pollutants.

5. Variance Waters allows waste water discharges that meet minimum water quality standards to protect the limited diversity of organisms typically found in these waters.

Adapted from "The Antidegradation Policy," DNR June 1991.

Priorities: New Watershed Projects

by Carol Holden

Landowners along the Wind/Big Muskego/Little Muskego chain of lakes in southeastern Wisconsin will have a chance to take part in a project designed to stem the runoff of sediment and nutrients into their lakes. The Wind/Muskego Priority Lakes Project is one of five projects getting underway as part of the Wisconsin Nonpoint Source Pollution Abatement Program, now in its 14th year.

To date, 56 priority watershed and lakes projects have been incorporated into the program. Ten of these have either been completed or are nearing completion. Other lake projects in the program include Lake Tomah and Minocqua Lake, both selected in 1990, and Bass Lake, a small-scale project selected in 1985 (Lake Tides Vol 16 #2). The slate of new projects, selected in 1991, is perhaps the best example of the types of projects the program has to offer. Here's a brief description of each:

The chain formed by **Little Muskego, Big Muskego, and Wind Lakes** lies within the Fox (Illinois) River basin. All three lakes are eutrophic, receiving nutrients and sediment from surrounding agricultural and urban land uses.

The **Upper Trempealeau River** watershed, located in Jackson and Trempealeau Counties, includes the entire drainage area to Lake Henry, a 44-acre impoundment undergoing rapid sedimentation. In 1979, 230,000 cubic yards of sediment were dredged from a 24-acre portion of the lake. The watershed also includes 95 miles of trout streams--all of which have degraded fish habitat. Nonpoint sources of pollution in the watershed include animal lots, eroding stream banks, and livestock grazing along streams.

The **Neenah Creek** watershed located in Adams, Marquette, and Columbia Counties includes the creek, its tributaries and 21 lakes ranging in size from five to 855 acres. The largest, Mason Lake, is eutrophic while most of the other lakes either have no water quality problems or little water quality information. The creek and its tributaries have degraded fish habitat in the form of eroded banks and sedimentation of the stream bed. Agricultural land uses are the major source of pollutants.

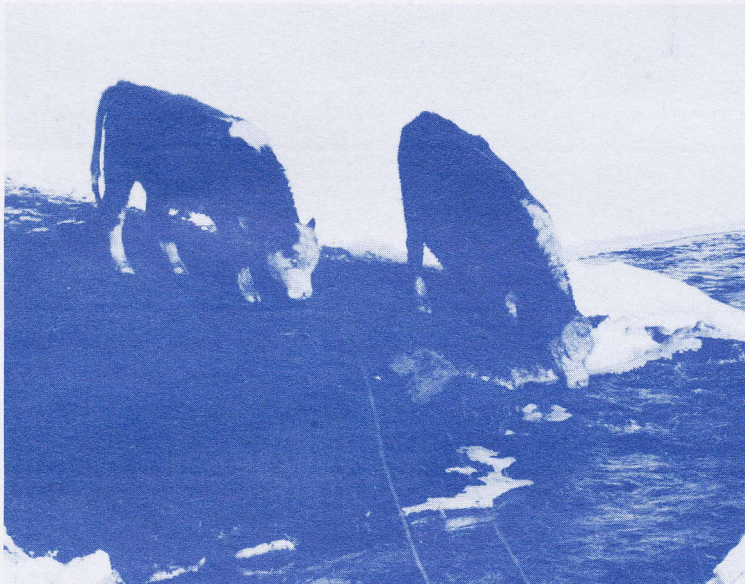
Becky Wallace, chief of DNR's Nonpoint Source and Land Management Section, predicts the program will see more lakes projects in the future. Her counterpart in the DNR Lakes Management Program, Jeff Bode, is equally optimistic. One reason is the existing network of lake

associations and lake districts that can lend support for adoption of a project and help provide information and education to others in the watershed.

Bode views lakes as key management targets in watershed projects. Because of their long retention time, lakes act as sinks for pollutants. "If we focus management objectives on controlling nonpoint

sources to the lakes, we'll also be dealing with much of the runoff to the streams as well." Both Bode and Wallace see real advantages to clustering problem lakes, like the Wind-Muskego chain.

Carol Holden is DNR's Nonpoint Source Education Coordinator in Madison. If you are interested in getting more information, contact the DNR Nonpoint Source Coordinator or Lakes Manager in your district.



Another Cycle Begins: Convention 92

The 15th Wisconsin Lakes Convention carried on the spring ritual of sharing experiences and developing a sense of community. Nearly 600 lake leaders, professionals, and legislators from around the state gathered at Stevens Point to take part in this annual assembly.



This year's winner of the Stewardship Award for an individual was Mary Danoski of Fox Lake. The group award went to the City of Tomah Lake Protection and Rehabilitation District Committee. Other people recognized for contributions to Wisconsin's lakes included John Avery, Post Lake; Alice Clausing, Tainter/Menomine Lake; William Maslowski, Nagawicka Lake; Frank Micale, Rock River-Lake Koshkonong; and Jim Leicht of Lake Neshonoc. Groups recognized included Fox Lake District, Lake Pewaukee Sanitary District, Tainter/Menomine Association, and Rock River-Koshkonong Association. Recipients pictured left to right: Micale, Maslowski, Danoski, Clausing, Lowell Keach (Fox Lake), Betty Crowley (Pewaukee), and Dan Franz (Tomah). Rep. Jim Holperin (far right) presented the awards. We send a hearty Congratulations to you all; your stewardship is exemplary.

One Voice for Wisconsin's Lakes

Noteworthy to this year's convention was the merger of the Wisconsin Federation of Lake Associations and the Wisconsin Association of Lake Districts. These two organizations (which represent the lake districts and lake associations of the state) used the conference to complete their unification. This consolidation will be

remembered as a significant episode in the history of the lakes program. The new organization called Wisconsin Association of Lakes (WAL), will be a powerful voice for the issues facing Wisconsin's lakes.

WAL will function as a statewide network of lake organizations. It will work closely with the DNR and UW-Extension to provide leaders of local lake organizations the chance to

share experiences and gain expertise. WAL members will promote public policies that will assist local lake organizations in becoming better stewards of our state's inland waters. WAL will also cultivate and enhance lake ecosystem education for lake leaders, lakeshore residents, lake-loving public, and children. WAL wants future generations to cherish Wisconsin's precious legacy of lakes and carry on lake stewardship.

This new organization will combine the strength of numbers and the experience of seasoned directors, to better promote Wisconsin lake stewardship. All board members of both WALD and the WFL will continue as directors of the new organization. Officers include Lisa Conley, President; Elmer Goetsch, Chair; Harry Hein, Vice-President; Al Habeck, Treasurer; and Mary Platner, Secretary.

For membership information: Write WAL, 25 W. Main Street, Suite 801, Madison WI 53703.



Here Today Gone Tomorrow:

Construction Site Soil Erosion Effects and Control
by Steve Bradley

The Department of Natural Resources estimates an acre of land that is under construction can lose 50 tons of soil (about two and a half dump truck loads) per year to a lake or stream. This compares to less than 5 tons/acre/year if the land is left undisturbed. High erosion rates occur when fields or construction sites are stripped of vegetation and the topsoil is left bare. This allows water to carry soil away. Most construction sites are drained by storm sewers or ditches that carry water and sediments directly into nearby waterways. By volume, sediment is the largest single pollutant of our lakes and streams.

Environmental costs of these large quantities of sediments carried into streams and lakes are enormous. Muddied water and fertilizers carried by sediment fuel aquatic plant and algae growth. Wetlands and shallow lakes are impaired when sediments artificially fill them in. When sediments are deposited in an stormwater system that empties into a stream or lake, pesticides and heavy metals carried by the soil particles can become health hazards for people as well as for fish and wildlife.

Monetary costs of construction site erosion can also be high. Such problems as the clean-up of neighboring properties and muddy streets can be expensive. Cleaning out storm sewers, culverts, and ditches, and dredging programs to clear sediment and weeds from bays in lakes can run in the millions. These expenses are seldom borne by those who cause the problem. Instead the price is paid by neighbors, downstream property owners, and the environment. Everyone pays through local, state, and federal taxes.

As a result of state legislative action in 1984, counties, cities, and villages have the authority to voluntarily enact construction site erosion control ordinances. A model ordinance for use by local governments was developed cooperatively by the

League of Wisconsin Municipalities and the Wisconsin DNR. More recent legislation has been introduced that would make the adoption of such an ordinance mandatory. SB281 has been signed by the Governor with partial vetoes.

Owners of land under construction can fulfill a responsibility to the environment and to future generations by keeping soil from eroding off their property. Planning before construction begins can serve to prevent or reduce erosion and sedimentation problems.

Steve Bradley is a graduate student in Resource Management at UW-Stevens Point.

Here are some basic principles and practices that can be easily employed:

1. Limit the amount of bare or exposed land and the time that the soil is exposed or free of any protective cover. Revegetate the site immediately after construction is completed.
2. Use mulches such as straw during the construction period. Detain surface water with straw bales and/or silt (fabric) fencing and encourage on-site infiltration as much as possible.
3. Redirect surface water drainage channels away from critical areas and reduce runoff velocities. Use appropriate structural soil erosion control measures--diversions, terraces, sediment basins.
4. Adapt the construction project to the natural site characteristics (soil, topography, drainage, etc.) rather than adjusting the site to suit the project.

To find out how your community is controlling its construction site erosion, contact your town, village, city or county officials.

CAPITAL REPORT



WASHINGTON

New Wetland Reserve Program

Wisconsin will be one of nine states which will be eligible for Wetland Reserve Program funding. Under this Department of Agriculture farm program, critical wetlands will be eligible for funding to acquire wetland easements for long-term protection. This program will help individuals and lake communities protect and manage wetlands for the long term within their watershed areas. Final guidance on implementing the rule will be out soon, with the program expected to begin in midsummer. This new element of the Farm Bill will provide federal programs to complement local and new state level initiatives in nonpoint source, stewardship, and lake protection programs designed to protect critical lake watershed areas. Contact your county land conservationist for further information as the program evolves.

Clean Water Act Reauthorization

Most parts of Senate Bill S. 1069, the Lakes Assessment and Protection Act of 1991, have been included in the latest Senate majority draft of the Clean Water Act amendments. This comprehensive expansion of federal programs targeting lakes is being considered by the

House of Representatives Subcommittee on Water Resources with action expected in the next few months.

(Editor's Note:

Wisconsin's 6th Congressional District Representative, Tom Petri, is ranking minority member of this subcommittee).

The 1993 Federal Budget

Once again, EPA did not request funding for the Clean Lakes Program and it will be up to Congress to restore funds. In addition to efforts to restore Clean Lakes Program funding, there is also optimism that a special, one-time lake specific appropriation for the states of the upper midwest may occur. If approved, this initiative would provide funding directly to statewide lake organizations, e.g. the new Wisconsin Association of Lakes, along with support for a wide variety of other lake educational efforts. (Editor's Note: Senator Kasten serves on the Senate's full Appropriations Committee and 7th Congressional District Representative Dave Obey serves on the House Appropriations Committee.)

MADISON

Although many parts of a major nonpoint source pollution control bill were vetoed, items of interest to lake communities remain. Nonpoint source (NPS) funds can now provide cost sharing for control of phosphorus released from lake sediments contaminated by past nutrient loadings. Typical control uses aluminum sulfate applications to strip phosphorus

from the water column and seal lake sediments to prevent future phosphorus release.

The bill also requires DNR to collect information necessary to identify all lakes needing watershed controls. Contact your local lake specialist, nonpoint source coordinator, water quality planner, or fish/wildlife staff to have your lake considered for inclusion in the NPS program process. The new law also includes expansion of regulations designed to control construction site erosion from homes and highway/bridge construction. Local governments can obtain guidance in developing ordinances on shoreland management.

Boating gas taxes will provide an additional \$1.5 million for funding of lake protection projects. Under draft rules now being developed, these funds provide \$1.5 million per year for purchase of sensitive watershed areas, restoration of wetlands, and development of local watershed ordinances designed to protect lake quality.

Governor Thompson signed legislation that regulates the use of personal watercraft by requiring a certificate of origin, limits on operation to daylight hours, operators to be over 12 years of age (over 16 to rent), face-forward operation only, use of personal flotation devices, limits on towing, and prohibiting wake jumping when within 100 feet of another boat.

To Be Or Not To Be:

Tournament Fishing

by Greg Hoffman

Wisconsin waters play host to innumerable competitive fishing events each year, year 'round. What kind of affect do these tournaments have on aquatic ecosystems and on user relations? These questions have only recently been addressed by the Wisconsin Natural Resources Board and Department of Natural Resources.

From local tavern "fisherees" to "In-Fisherman" and "Bassmasters", tournaments are growing in popularity every year. Or are they? Recent competitive fishing events, particularly "live-release" events, have drawn widespread criticism. Excessive fish kills, damage to crucial habitat, apparent indifference to boating regulations, "private-gain-from-public-resources", and user conflicts are all deemed problems. Two live-release walleye/sauger fishing events held last summer on the Lake Winnebago system are an example. Reports of damage to fragile cane beds, disregard of no-wake zones, and unethical fishing conduct were common following the events. I worked with a team of DNR Fisheries Biologists to monitor the survival of fish caught during the two tournaments, and the results were not impressive. Of nearly 2000 walleyes and saugers caught, over 50% were dead within a week of being caught. They included those deemed unable to survive if released and those found dead after being tagged and released.

In some instances, fish may have been transported up to 40 miles to the weigh-in site. Conditions at the weigh-in site were not ideal, either. Temperatures in holding tanks often were much cooler than lake water, which further stress the fish. Crowding of fish in the holding tanks was also a difficulty.

Biologists believe that a combination of unfavorable conditions led to the poor results. Average water temperatures on Lake Winnebago were in the mid-70s throughout both tournaments, probably too warm for survival of walleyes and saugers already stressed by being held in live-wells and handled.

The complaints and results of these tournaments did not fall on deaf ears. Ron Bruch, Fisheries Manager in Oshkosh, called a public meeting to

allow supporters and opponents of tournaments to air their grievances. The Natural Resources Board also requested that a study committee be formed to address these issues and prepare possible solutions, in the form of management and regulation recommendations. This has been done, and resource managers have been granted broad authority over all tournaments.

There are tournaments and organizations that successfully cope with controversy by modifying their events to conform with fish management policies and other concerns. Largemouth bass and muskie tournaments have been around for several years, and have been relatively successful. There are numerous reasons for this, including the fish itself. Largemouth bass are typically warm-water fish, and tend to be affected less from being caught and handled.

The format of a tournament can also be important. Several muskie tournaments have an arrangement in which tournament officials are on the water during the event. When a muskie is hooked by an angler, a flag is raised to notify officials, who promptly reach the anglers and measure their fish. Often the fish does not even leave the water. Walleye tournaments need to be changed in order to find the success that other tournaments enjoy. For live-release walleye/sauger tournaments in warm water, success is rare.

The process of governing competitive fishing is still very young in this state. Every licensed angler has the right to harvest a legal limit of fish from any water in the state, regardless of the motive. Should tournament fishing be considered commercial fishing? Should tournament fishing be restricted even more or totally banned?

Bigger and better boats, fish-finders, more precise methods of catching fish, big-money tournaments. Maybe it's time to take a serious look at this type of water-related recreation. Where will it end? Do we really need tournaments? I think eliminating these "advancements" in our pursuit of recreation, would be difficult. But we must improve upon our present practices. It will take a change in awareness, attitudes, ethics, and respect for other forms of life.

Greg Hoffman is a Fisheries graduate student at UW-Stevens Point.

The Return of The Last Straw for Algae

by staff of the Aquatic Weed Research Unit,
University of Bristol

In the Winter 91-92 issue of Lake Tides we ran a short article we had seen in Organic Gardening magazine on the use of barley straw to control algae. The amazing response to the article prompted us to contact the source, the University of Bristol, Berkshire, England. They were kind enough to provide us with the subsequent commentary. Remember, you must contact your local DNR and obtain the proper permits before adding anything to your lake.

The research is being done by the University of Bristol, Department of Agricultural Science, Sonning Aquatic Research Center, Aquatic Weeds Research Unit. The Unit has received many inquiries from individuals interested in the use of straw to control algae.

Although this work is still experimental, numerous trials with straw have been, and are being, carried out. So far, the reports on these trials have confirmed observations that straw can reduce algal growth and that the presence of straw in water can have other environmental benefits, either because of the increase in invertebrates associated with the straw or by acting as a physical barrier and filter.

Background When barley straw is allowed to rot in water, a chemical is produced which inhibits algal growth. This process involves microbial decomposition and is probably temperature-dependent, being slower in winter than in summer. Their experiments suggest that barley straw is more active than wheat straw or hay, although there is some evidence that both of these latter can also reduce algal growth.

The Chemical The chemical or chemicals involved has not yet been identified. This is because the active molecule is produced in minute amounts mixed with large numbers of other chemicals from the rotting straw. However, field and laboratory experiments with water known to contain the active ingredient suggest that it has the following properties:

1. The chemical inhibits algal growth but may not kill algae already present which can start to grow again if transferred to "clean" water.
2. The chemical appears to have a short persistence in water and is rapidly inactivated on contact with mud.
3. The chemical is rapidly taken up by algae.
4. The chemical is not produced if the water in and around the straw becomes anaerobic.
5. The amount of straw necessary to produce sufficient chemical to affect algal growth is in the range of 10g (or less) straw per cubic meter of water. Larger quantities may be more effective and/or produce faster results, and applications of up to 100g/cubic meter have been used. At this level, no deoxygenation in the surrounding water was recorded, but care should be taken to avoid deoxygenation by introducing excessive quantities of straw.
6. The chemical is not produced in significant quantities until the straw has been soaking for about one month. It is produced in increasing quantities for about six months, after which production diminishes.
7. All species of algae tested so far are affected. Tests have been carried out on both unicellular and filamentous forms including some cyanobacteria (blue/green algae). However, there is circumstantial evidence that Chara spp. may be resistant.
8. There is no evidence yet of any adverse effects on higher plants or on fish that may be attracted to submerged straw by the large numbers of invertebrate animals often associated with it.

Assessment of Effects It is not easy to measure algal growth accurately in field trials. The Unit has used chlorophyll measurements in algal cages, on suspended glass slides, and in water samples to assess algal growth. Details of these techniques are available from the Unit. Many other field trials have been assessed by subjective estimates of growth and scoring techniques involving comparisons of before and after, upstream and downstream, or adjacent control waters. Generally, the effects of the straw have been sufficiently marked for these subjective techniques to show that a level of control has been achieved.

(continued next page)

Information This research is still in its early stages and there are many aspects of the use of straw on which we have very little information. However, we believe that there could be many potential benefits in the management of waters by the use of straw (or similar materials). The Aquatic Weeds Research Unit would be grateful for reports on trials involving the use of straw. This helps with the research program. The Unit shall try to collate the information so that a comprehensive set of data is available. Two papers on this subject have been published in the Journal of Applied Phycology 2:231-239;241-248 1990.

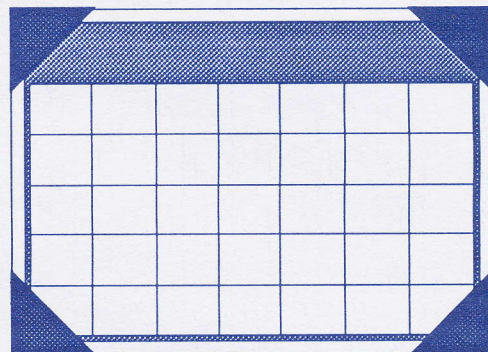
Remember you must contact your local DNR and obtain the proper permits before adding anything to your lake.

For more information contact:
Your local DNR or UWEX agent, or Lake Tides, or P.R.F. Barrett, Aquatic Weeds Research Unit
Broadmoor Lane, Sonning-on-Thames
Reading, RG4 0TH, England.

Good-Bye Carolyn

Carolyn Rumery Betz has moved from the Lakes Program and her work with Self Help Monitoring. In a career move, Carolyn has joined the Non-Point Source Program. At the Lakes Convention, Carolyn was presented a special award in appreciation for her years of hard work with the Self Help Program. We will miss you!

The 60-foot gentleman's tug Benjamin F. Bates was completed last August by Palmer Johnson in Sturgeon Bay. It will be used as a day cruiser on Lake Geneva.



Calendar of Events

- Delavan Lake Fair - May 30
- Shawano Lake Fair - June 6
- NALMS Conference - November 3-6, Cincinnati
- Wis. Lakes Convention - Apr. 16-17, 1993, Stevens Point

LOOK FOR MORE LOCAL LAKE CONFERENCES AND LAKE FAIRS COMING YOUR WAY THIS SUMMER. Call or write your local DNR, UWEX or WAL representative for times and dates or call us at 715-346-2116.

The Silence of the Auction

Betsy Schulte would be delighted to share her recipe for success with the silent auction and raffle held at the Lakes Convention. She can be reached at 608/846-9311.

REFLECTIONS



In the breathless, mirrored afterglow of sundown, the final colors dissolve into night. A long-drawn, mournful cry of a loon fails to shatter the deepening silence, but settles over the lake like darkness, as it has for thousands of years. Intensifying the quiet of the hour, blending easily with the evening, like the outer edge of our campfire's light.

Woody Hagge



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