



Lake  
Tides  
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*A Newsletter for People  
Interested in Wisconsin's  
Inland Lakes*

**WLEX**

COOPERATIVE EXTENSION PROGRAMS  
UNIVERSITY OF WISCONSIN-EXTENSION



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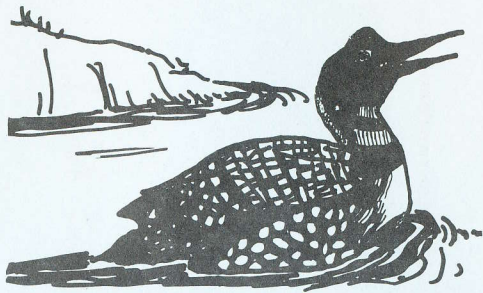
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## IN THE WAKE OF A LOON -- AN EDITORIAL

At 12:59 p.m. on April 25th, nearly 200 lake scientists and managers crowded into the Lakeshore Room of the Wisconsin Center at the University of Wisconsin-Madison. Others tried to gain admittance but could not be accommodated. The occasion was a conference on the "Mechanics of Lake Restoration."

The lake professionals came from California, Maine, Ohio, Florida, British Columbia, Quebec and 24 other states and provinces. They came to share knowledge and experiences on lake management. They came to Wisconsin because Wisconsin is recognized as a pioneer in lake management.

For nearly a year, University of Wisconsin-Extension and Department of Natural Resources personnel planned the conference. The finale unfolded over four days:

- April 25th - Funding and Administration
- April 26th - Understanding the Watershed
- April 27th - Collection and Interpretation  
of In-Lake Data
- April 28th - Implementation

Thirty-nine speakers made presentations during the course of the four days. Special interest was shown in the future of federal aids under Section 314 of Public Law 92-500. At the request of con-

ferees, two breakfast meetings were held on the topic and an informal coalition was formed to pursue the matter.

The extra meetings, the ton of booklets taken home by conferees, and the consistent attendance at the sessions were evidence of both the seriousness of purpose of conferees and the quality of the program. Evaluations at the end of the conference were very gratifying and most conferees want another such conference in a year or two.

We are proud of the role we played in organizing the conference and pleased by the results. However, the pride extends beyond the conference planning committee. It extends beyond John Soderberg and the Inland Lake Council which he chairs. It extends beyond the Legislature and the Governor. It extends to all Wisconsinites interested in our lakes.

The proportion of speakers and of published materials vividly displayed the leadership of Wisconsin. The conferees were impressed by the technical advances being made in the infant science of lake management in Wisconsin. They appeared even more impressed with the application of that science through involvement of local communities in a partnership with the state. As the Milwaukee Sentinel quoted a conferee from New England: "The University of Wisconsin is mecca to any scientist interested in aquatic biology, but the governmental cooperation is the thing we can't match. Every time we try, we run into clashes between the town and the state."

Sincerely,

*Ron Hennings*

Ron Hennings

*Lowell Klessig*

& Lowell Klessig  
Lake Management Specialists

## ECONOTES

### Phosphorus is the Culprit

Yes, Mr. Phosphorus is guilty! He is not the only criminal "element" causing eutrophication (premature aging) and death of Wisconsin lakes, however. Black Bart Carbon and Slippery Nick Nitrogen are also family members. But, Mr. P was caught. He was caught in the act with his excessive presence contributing to the delinquency of young lakes everywhere. He would get them hooked on weeds and algae, requiring more and more each year. Eventually, the habit would overpower the lakes' energy budget, causing it to fill with its own waste. Evidence of his presence is familiar. Breathing becomes irregular, bottom sediments become smelly, oxygen is deficient, and death comes by suffocation.

### THE CHARGE IS LAKE SLAUGHTER IN THE 1ST DEGREE!

#### The Investigation

The investigation began in the mid 1960s. Mr. P was first observed sneaking away from his home -- fields and lawns where he was spoiled by too much attention and overuse. He often cruised with dirt and runoff to the nearest waterway. Sometimes he extended his range to other watersheds by soliciting rides with wind-blown particles and dust.

He fell in with the bad company which hangs around septic tanks and sewage outfalls. Here he learned how to break and enter the ground water and surreptitiously seep into unsuspecting watercourses.

He was training with one purpose in mind -- to someday hit the big time and enter a lake.

Mr. P's activities were first noticed in shallow lakes with large, fat watersheds. They accepted him gladly with his promises of increased fertility and productivity. "The better for us and the better for fish," said diatoms and pondweed.

"True," replied Mr. P, "have all you want. I've got a million pounds more where that came from. By the way, meet some of my friends -- blue-green, Duckweed and Coontail. They are hungry, too."

If a little is good, then more should be better, the pitch goes. But before long, it was too late to turn back. Rough-looking fish with dirty habits moved in as walleye and bass sold out.

Then the hard stuff -- Elodea and Milfoil from the European connection, was pushed. The end was in sight. The lake became a degenerate monoculture of a single obnoxious weed, main channeling P and gasping for breath. Gone were the variety of plants and animals -- the lake community was dead.

#### The Trial

Detective Schindler testified first: "We needed water-tight evidence that Mr. P was the ring leader. For that job we used 'decoy' lakes 226 and 227. 226 and 227 were clean, wired for water samples and kept under surveillance. Bart Carbon and Nick Nitrogen came first. 226 accepted them, but nothing happened. They were waiting for someone else. Mr. P arrived at 10:42 a.m. and within hours, the green algae were multiplying rapidly, getting aggressive and threatening to take over. To document the leadership role of Mr. P, we had Carbon and Nitrogen picked up and removed from the scene. The algae crop, under Mr. P's direction, successfully obtained replacement

forms of carbon and nitrogen from the atmosphere, with nitrogen-fixing blue-green algae dominating both 226 and 227. Only after Mr. P was removed from the lakes and taken into custody, was algae growth retarded. This demonstrates that he is the limiting nutrient that we can control at this time. Without him, the spread of noxious weeds and algae can be kept under control."

"Untrue," cried Soapy Detergent, Inc. for the Defense. "How could my client, who cleans your whites whiter than white and brights brighter than bright be guilty of such a dastardly deed as a dirty lake? Surely it is Bart Carbon and Nick Nitrogen who are guilty of lake slaughter. Mr. P was only an innocent bystander visiting his relatives. After all, he can choose his friends, but not his relatives."

The jury deliberated and pronounced the verdict:

"GUILTY AS CHARGED!"

#### Epilog

Mr. P was sentenced by Judge Dee N. Are to life in exile from the waters of the state. No appeal was made, but the Mr. P's come in many forms and most still swim free.

Federal EPA agents report that organized phosphorus is strongest southeast of a line running from Green Bay through Madison. The average concentrations of non-point source (background runoff) phosphorus in streams of this region range from 0.1 to more than 0.2 mg/l. Phosphorus is also well entrenched south of Highway 64 with most concentrations averaging between 0.03 to 0.1 mg/l. North of Highway 64, the average concentrations are usually less than 0.015 mg/l.

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J. M. Omernik, "Nutrient Concentrations in Streams from Nonpoint Sources," U.S. EPA, Corvallis Environmental Research Lab., Corvallis, OR, 1977.

Total phosphorus values of 0.02 or 0.03 mg/l and higher are usually considered hazardous to a lake's health, depending on the size, depth and flushing rate of the lake. In general, forested watersheds harbor the least phosphorus and urban and agricultural land the most.

Citizens are asked to help fight the spread of organized phosphorus into our lakes and streams. You can do the following:

1. Support your county Soil and Water Conservation District, Planning Office, and local lake district or association.
2. Report the location and activities of known phosphorus carriers and pushers. Soil and stream bank erosion, manure on frozen ground, feedlot and barnyard runoff, urban sewers and storm drainage, faulty septic systems and inadequately-treated municipal and industrial wastes have all been incriminated.
3. Avoid associating with phosphorus-rich cleaning agents.
4. Do not overfertilize lawns and avoid using phosphorus fertilizers within 100 feet of a lake or watercourse.
5. Leave the natural landscape and a barrier of vegetation along shorelines and stream-banks.
6. See your County Extension office or write to Lake Tides, 1815 University Avenue, Madison, WI for more information on soil erosion, septic tanks, sewage treatment plants, natural landscaping and lake districts.

## A SOIL-LESS DAY FOR LAKE HENRY

Ted Amman  
Soil Scientist  
Office of Inland Lake Renewal  
DNR

Lake Henry recently received a grant award of \$180,000 from the U.S. Environmental Protection Agency. The proposed lake rehabilitation plan includes both watershed improvements and lake dredging.

Lake Henry, located in Blair in eastern Trempealeau County, is a 43-acre impoundment of the Trempealeau River. The lake drains a 116,000-acre watershed that includes parts of Trempealeau and Jackson Counties. Soil erosion in this large watershed and the subsequent in-lake sediment accumulation have severely restricted recreational activities on Lake Henry. The gradual accumulation of this sediment has reduced lake depth to the point where both emergent and submergent vegetation are choking off all but a narrow channel during summer months.

In response to the Lake Henry Protection and Rehabilitation District's request, a feasibility study was conducted during 1975. The following year, management alternatives were completed and a federal grant proposal was forwarded to the U.S. EPA for consideration.

Early this year, the lake district decided on a combination of a watershed protection/stabilization program with an in-lake dredging project. Shortly thereafter, the lake district hired a project manager to oversee the development of their rehabilitation plan and to generally supervise the project at the local level.

The proposed watershed work includes intensive bank protection and stabilization along the Trempealeau River and tributary streams in both Trempealeau and Jackson Counties. A substantial effort will also be directed towards improving soil conservation practices on upland farms adjacent to the Trempealeau River and tributary streams. The watershed work should get underway this summer.

During the lake dredging portion of the project, roughly 200,000 cubic yards of sediment will be removed. This will nearly double the lake's present water volume. Also, this should increase the lake's depth to the point where aquatic vegetation should not be a serious problem in the lower half of the lake. Development of diked disposal areas for the dredged spoil may be completed this summer. Lake dredging is scheduled for the summer of 1978. This lake rehabilitation project is expected to be completed by the fall of 1978.

### Source of Funds

Federal	-	\$180,000
State	-	135,110 (eligible)
Local	-	<u>63,346</u>
Total		\$378,456

### Expenditure of Funds

Lake dredging and site preparation	-	\$240,000
Watershed improvement	-	118,456
Monitoring	-	10,000
Administrative overhead	-	<u>10,000</u>
Total		\$378,456

## RUMBLINGS IN THE ROTUNDA

Representative Calvin Potter and 19 of his colleagues in the Assembly and Senate have introduced Assembly Bill 754 to revise the inland lake protection and rehabilitation law.

The major sections of the bill are outlined below:

1. Increases from \$500 to \$2500, the minimum value of contracts which must be let by bids.
2. Provides that towns creating lake districts must conform to the procedures used by counties in creating lake districts.
3. Provides that lake districts may use many of the financing powers of other municipalities and must conform to the general municipal procedures.
4. Clarifies the procedure for special (user) charges under which a district may collect an equal sum from each property owner rather than adopt a mill levy.
5. Gives jurisdiction in creating a multi-county district and over motions of attachment and petitions for dissolution to the county with the largest portion, by property valuation, of the (proposed) district.
6. Removes the requirement that DNR approve district work to be funded by special assessments.
7. Exempts a district from paying the state for material dredged from a lake.

## COMMISSIONERS' CORNER

In March, about 40% of the 500 lake district commissioners attended one of the workshops held in Eau Claire, Antigo, and Fond du Lac. The 2nd annual workshop on the "Operation of a Lake District" covered annual meetings, taxes, legal questions, aids, and related programs. Commissioners again seemed pleased with the format and content of the sessions.

They were especially pleased to receive a Reference Handbook for Lake District Commissioners. Most districts were represented by at least one commissioner, and some commissioners have purchased an additional handbook for each commissioner not in attendance.

The Handbooks contain copies of relevant state laws and administrative codes, personnel directories, description of agency roles, tips on maintaining citizen participation, sample activities for annual and commission meetings, and selected informational publications. The Handbooks are also designed to serve as a file and should be kept up-to-date and passed on to new commissioners.

We strongly recommend that each commissioner be provided with a personal copy. The Handbooks are available at 1815 University Avenue, Madison, for \$4.00 each or can be ordered by mail for \$5.00.

## SUMMER SEMINARS FOR OWNERS OF RURAL PROPERTY

What is the potential for a mine near my cottage?  
How are property taxes determined?  
Does ground water influence lake levels?  
What trees should I plant and which should I cut?  
How can I stop my lakeshore from washing away?

A series of seminars on managing your rural property will attempt to answer such questions. The focus of the seminars will be on your personal property rather than on the lake.

For further information on these seminars, write to Lake Tides, 1815 University Avenue, Madison, or contact your County Extension Office. The seminars will be held as follows:

Eagle River - July 23rd	Green Lake - Aug. 19th
Hayward - Aug. 13th	Elkhorn - Aug. 27th