LPL 55

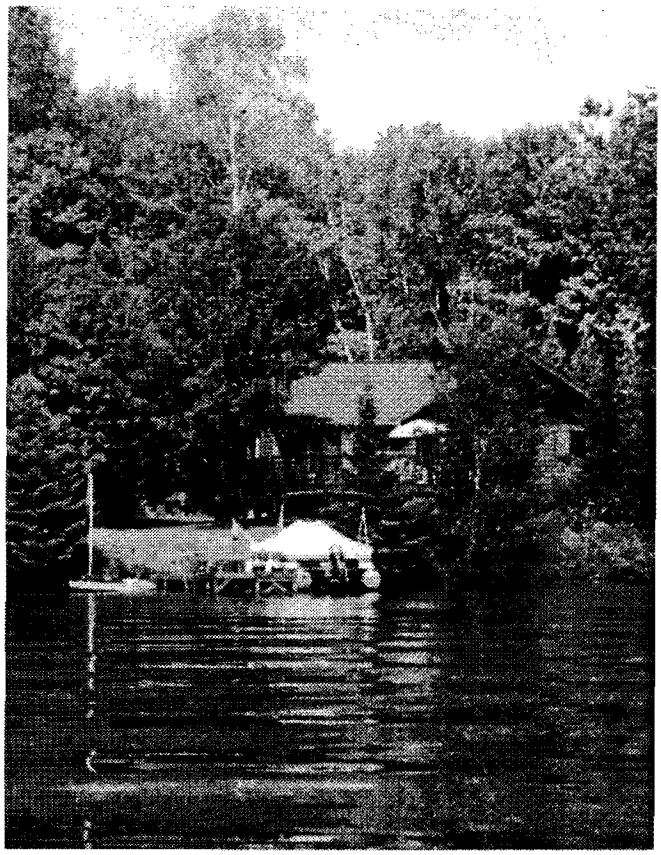
Kentuck Lake

Forest /Vilas County, Wisconsin

May 2001

HOW IT ALL FITS TOGETHER

A lake is an extremely dynamic community. We tend to look at different aspects of that community separately. "The ice fishing was great last winter," or "the weeds are really bad this summer". What we need to realize is that all aspects of this community are connected. If we make mistakes developing our shoreline we can increase runoff. The runoff carries nutrients that feed the plants or algae and can destroy fish breeding grounds. It can also cloud the water making it difficult for aquatic plants to survive. If the plants aren't growing it further hurts the fishery by eliminating food and cover sources and allows algae to gain an upper hand, adversely affecting aesthetics. If the plants survive and are "overfed", their populations can explode, recreational opportunities can be lost, a stunted fish population can result, and winterkill may become more likely. Many potential problems stemming from one action.



Our recreational activities can have a similar "domino effect". Improper, high-impact recreational activities pound the shoreline and destroy plant communities, both of which lead to sedimentation and water-quality problems which can result in the same set of problems as the "shoreline" example above.

It is the responsibility of every lake-property owner and lake user to understand the impact that his or her actions have on the overall health of the lake.

Each of the articles in this report looks at a separate study area, but you will notice that it is not possible to discuss any single issue without discussing its relationship to another.

Kentuck Lake

Then and Now

References to the body of water that would become Kentuck Lake go back nearly 140 years to the period of time that the area was being considered for the construction of the "military road" between Ft. Howard in Green Bay, WI and Ft. Wilkins in Copper Harbor, MI. Land along the shores of the lake was granted to private parties in exchange for helping with construction of the road.

The next 60 years passed without much activity on the lake, with most of the land being passed around by lumber companies in large tracts. Access to nearby towns was difficult, so settlers on the lake were few and records of those who did settle are even more scarce.

In the 1920's a fine private lodge was built and access to the lake improved. Within the next few years, a couple of small developments sprang up on the west shore. One of these would become known as "Wally's Fishing Camp" and the other, which sometimes housed prisoners and used them for site improvement, became a private girl's camp.

However, development of the Lake continued quite slowly up until about 25 years ago. According to research for this project, there were an estimated 40 dwellings on the lake in 1970, 76 in 1980, 105 in 1990 and 135 in 2000.

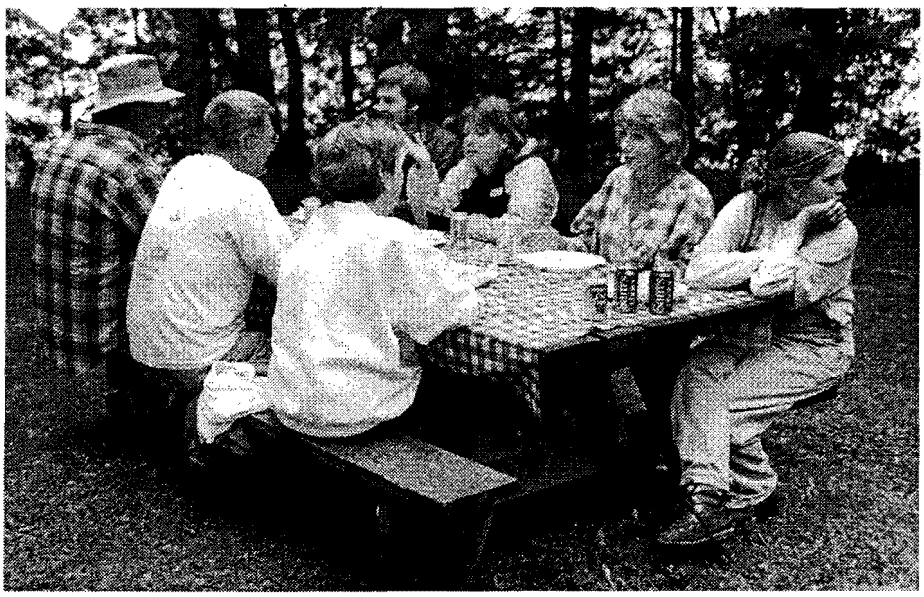
(Please read the entire lake history compiled by Gerry Maciolek – available at your request from your commissioners.)

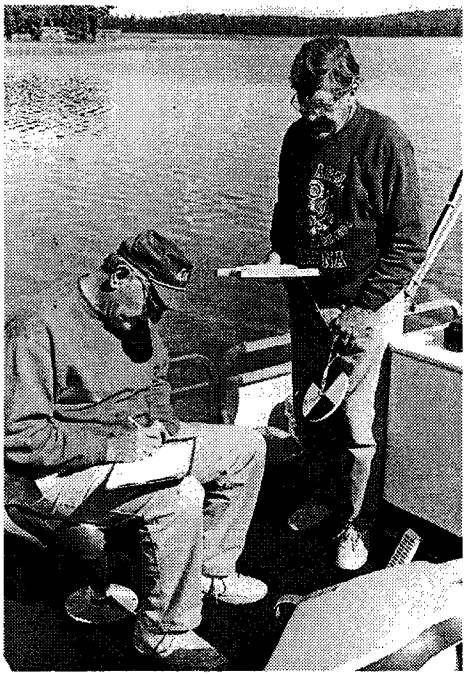
Through the years, there have been a number of lake studies performed and a large amount of data collected on Kentuck Lake – MUCH more then on most surrounding lakes. The purpose of this study is to bring all the technical data together, interpret it and produce two items. Item one is this report – a non-technical summary of the data for residents. The emphasis of this magazine is to provide a very general view of the data and provide residents with information on how they can preserve, protect and improve the lake.

The other product is a technical report that consists of all of the available data with interpretation and recommendations for the commissioners. This technical information is available for any resident to review.

The Kentuck Lake Protection and Rehabilitation District would like to recognize the following members who were instrumental in collecting data for this project:

Gerhard Becker
Hilde Becker
Joanne Casey
Art Crampton
Chuck Hill
Betty Hillenbrand
Bob Hillenbrand
Bob Kiedrowski
Louise Kiedrowski
Bill Lund
Barry McLeane
Gerry Maciolek
Ron Pickarts
Grace Secombe
Tom Secombe
Les Smith
Jim Steenport
Nancy Steenport
Bob Winblad
Bob Yuhas





WATER QUALITY

A great deal of water quality data has been collected from Kentuck Lake, dating back to the early 1970's. The data can be divided into three groups – macronutrients, micronutrients and buffering capacity parameters.

The macronutrients consist of nitrogen and phosphorus. These are the components that "drive" the entire living lake community. They are discussed on the next page.

The micronutrients are a number of other elements that are found in the water in very low concentrations. They also "feed" the system, but their effects are usually subtle and often not very well understood. The full technical report contains some information on these elements, but they are not discussed in this report.

The buffering capacity parameters are pH and alkalinity. They are indicators of the potential effects that acid rain can have on a lake. They are discussed next.

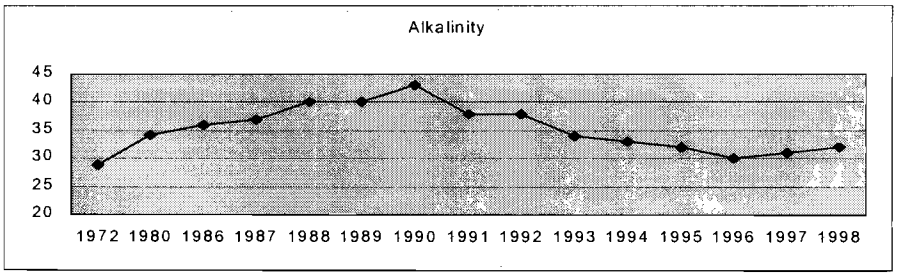
ACID RAIN AND KENTUCK LAKE

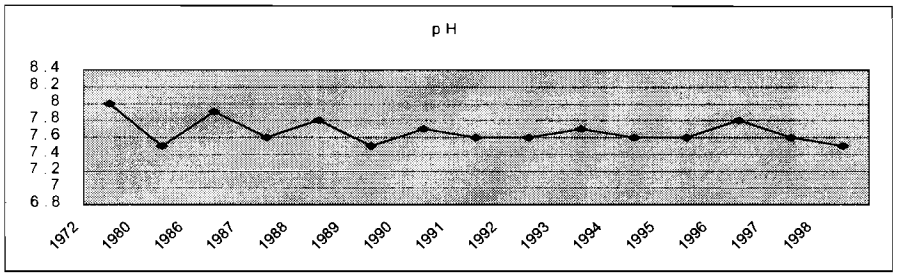
Acid rain is a product of airborne contaminants (mostly from vehicle emissions and industrial smokestacks) being trapped within raindrops and snowflakes and redeposited on earth. In certain lakes the effects of the acid deposition can be devastating. The measurement of alkalinity and pH are indicators of a lake's susceptibility to these effects or the current state of these effects.

pH is the measurement of the acidity of a lake. The lower the number, the more acidic the water, the higher the number, the more basic. A value of 7.0 is neutral. Most of the lakes in our region are around the neutral area of this scale and most vary a bit seasonally, due to natural processes. The plants and animals in these lakes can withstand the natural fluctuation, but begin to suffer when the pH moves further toward one end or the other. A number of lakes in the region are naturally acidic – plants and animals in these lakes have evolved to require the lower pH.

Alkalinity is the measurement of certain dissolved materials that neutralize acid. The higher the alkalinity, the more acid can be deposited in a lake before the pH is changed. This is the same effect that many stomach remedies rely on. Research has indicated that lakes with alkalinity levels of greater than 31 mg/L are at very low risk of the adverse effects of acid rain.

The pH in Kentuck Lake has been relatively high since data collection began – usually just above neutral. This means that the lake is in the expected range and has quite a bit of room on the scale for healthy plant and animal populations to flourish. The alkalinity over this period of time however, has often been very close to the level of susceptibility. Fortunately over that period the consistency in the pH seems to indicate that the alkalinity levels are keeping up with whatever acid deposition is occurring.





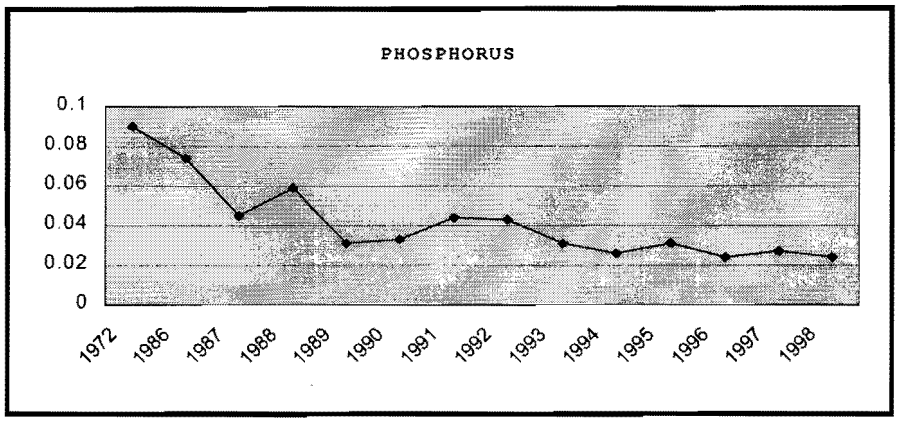
PHOSPHORUS AND NITROGEN. . .THE MAIN PLAYERS

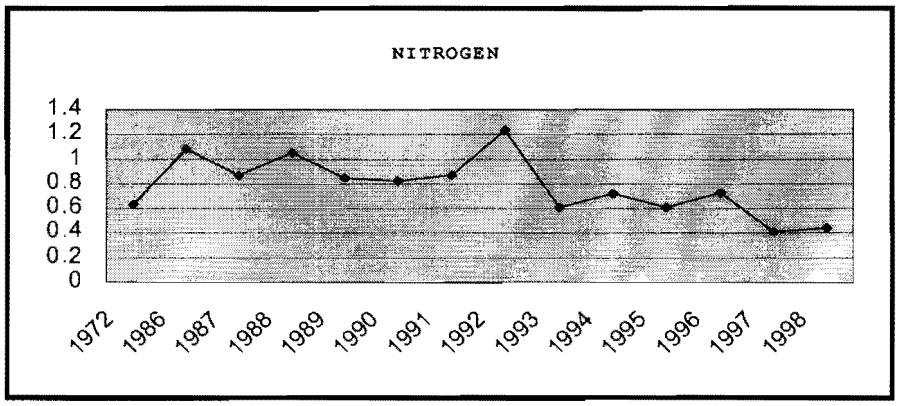
It may seem hard to believe, but nearly all of the reasons we enjoy our lake experience, and most of the reasons that the experience can sometimes be not so enjoyable, are related to these two elements. They supply the living system in our lake with its primary "food" supply and their presence can be greatly affected by our activities. Generally speaking, we use their levels as a measure of a lake's health.

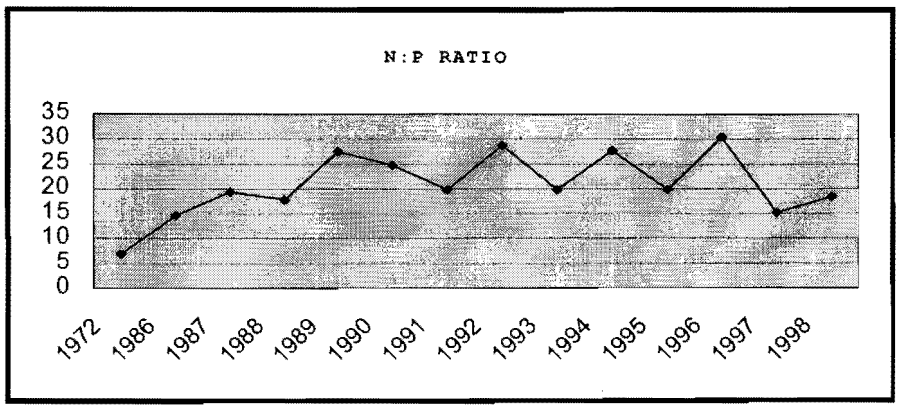
Phosphorus comes from the surrounding shoreline and from the sediments. Removal of shoreline vegetation, fertilization, and improper or insufficient waste treatment (septic systems) can all contribute enormously to the phosphorus loading from the shoreline. Off shore, weed removal and high-impact activities in shallow areas can lead to additional nutrient loading from the sediment. Generally, phosphorus levels of greater than .013 PPM can support nuisance levels of plants and algae. The accompanying graph shows that while the phosphorus levels have remained above that level, that they have decreased significantly over the past thirty years.

Nitrogen levels over that same period have fluctuated but remain within an expected range. Nitrogen levels tend to fluctuate seasonally due to natural processes.

In most lakes, Kentuck among them, nitrogen is present in excess. That means that the amount of phosphorus present determines the amount of plant and algae growth, which in turn affects the fishery, the aesthetics and our lake experience in general. A ratio of nitrogen to phosphorus of 13 or greater indicates that this is the case. The third graph on this page shows that ratio over the same period of time.







THE SIMPLE SOLUTION TO WATER QUALITY MONITORING

Phosphorus feeds algae, algae clouds the water – that's the concept. Testing for phosphorus and algae (Chlorophyll A) requires complex chemical tests and many dollars. The alternative is a simple, inexpensive method that involves lowering a heavy disk (Secchi disk) into the water and reporting the lowest depth at which it is still visible. The shallower the visible depth the more algae and ultimately the more phosphorus in the system.

Thanks to a few dedicated Kentuck Lake residents, we have a large database of Secchi disk measurements, tracking water quality trends for several decades.

The table below contains summer averages and shows fairly steady improvement. The dip in the early 90's corresponds to the drought and is an expected effect. Continued monitoring will show whether or not the latest dip is a similar situation.

Lake Model Shows Water Quality Improving

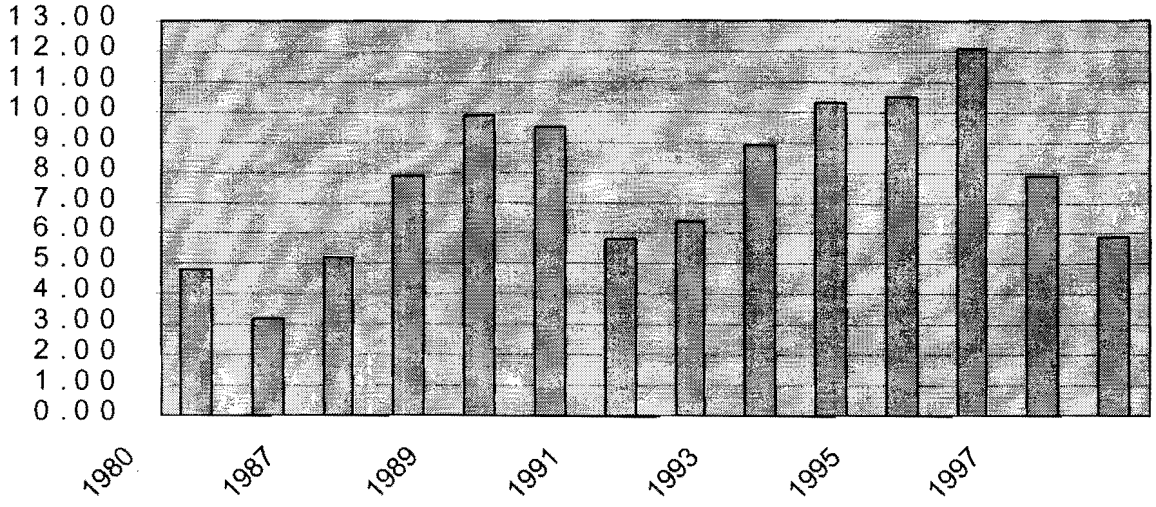
The Lillie and Mason water quality model was developed in 1983 and uses phosphorus and transparency (Secchi depth) to rate the water quality of a lake. The following table shows the water quality of Kentuck Lake according to this model at three points over the last three decades and shows a steady improvement over that period. You can use this table along with the graph below and the phosphorus graph on page 4 to create a more complete model of water quality.

Septic Situation

Failing septic systems often contribute to the nutrient load of a lake. This is usually a problem when the system is very close to the water table and the shoreline. Symptoms of septic pollution include pooling in the drain field and thick, localized algae blooms. The District has assembled a package of information on the importance of a properly-operating system. If you did not receive a package please contact your commissioner. Rules governing systems on Kentuck Lake fall under either of two counties. If you have questions about the regulations that pertain to your property, consult your commissioner. Additional information on septic systems can be found on page 11.

Lillie and Mason Water Quality Model

	Phosphorus	1972	1987	1998	Secchi	1980	1988	1995
Excellent	<0.001				>19.7			
Very Good	.001-.010				9.8-19.7			10.5
Good	.010-.030			0.02	6.6-9.8		7.9	
Fair	.030-.050		0.05		4.9-6.6	4.8		
Poor	.050-.150	0.09			3.3-4.9			
Very Poor	>.150				<3.3			



Aquatic Plants

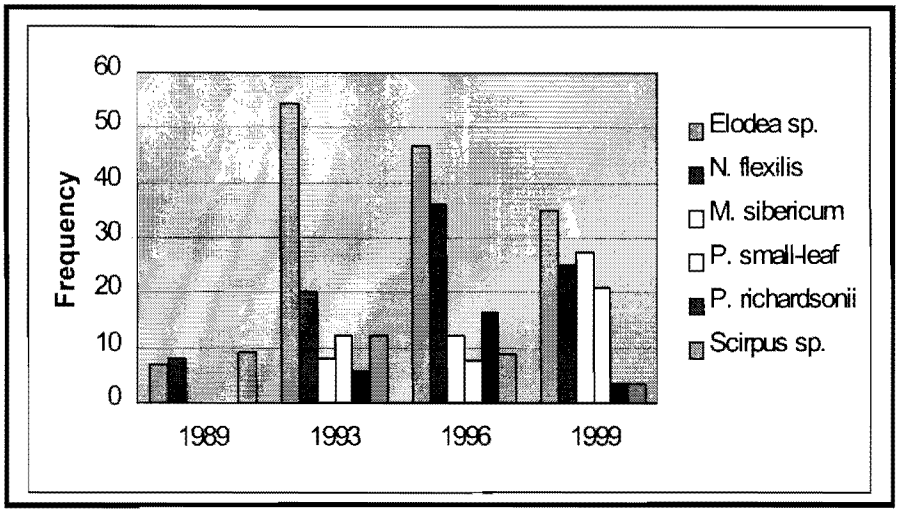
The aquatic plants in a lake can provide numerous benefits or endless headaches. A healthy, diverse plant community supplies food and cover for fish and other wildlife, provides sediment and shoreline stabilization, utilizes nutrients that might otherwise lead to algae problems and even adds to the aesthetics in the eyes of some. But, unless you are a fisherman who relies on that "perfect cabbage bed", you may not feel a great appreciation for the aquatic plant community in Kentuck Lake.

On the other hand, a plant population out of control inhibits recreational activities, increases the likelihood and severity of winterkill and negatively impacts aesthetics.

The plant community in Kentuck Lake has, at times, played both the hero and the villain. Unfortunately, the positive effects, as mentioned above, are much less noticeable than the negative.

Over the years, a fairly large amount of data on the plant community in Kentuck Lake has been collected. Studies were performed in 1989, 1993, 1996, 1997 and 1999. The plant community in 1989 was characterized as "recovering" from the effects of the rusty crayfish. Since then, diversity and density of aquatic plants has increased. A good balance of submerged, emergent and floating-leaf vegetation exists. Such a balance is necessary to provide the full compliment of benefits listed above.

Because Kentuck Lake is a fairly fertile system, occasional nuisance weed growth can be expected. An awareness of the factors that encourage plant growth and efforts to control these is the best management tool in maintaining a healthy plant community in Kentuck Lake.



THE GOOD...

The table on this page shows the re-establishment of several species since the crayfish invasion. It contains the most common plants in Kentuck Lake.

Elodea is known as waterweed. This is the plant that has been a nuisance in the lake at times. *Najas flexilis* is a small-leafed plant that usually grows in a "pincushion" form. *Elodea* and *Najas* both provide shelter and food sources for small fish.

Scirpus is bulrushes – the tall, thin plants that extend out of the water. They provide shelter and nesting grounds for fish and support insects, which in turn are eaten by fish.

A number of different small-leafed pondweeds (P. small-leaf) were collected. This is a fairly diverse group of plants which provide varying degrees of benefit. *Potamogeton richardsonii* is one of the large-leafed pondweeds, collectively referred to as cabbage. These plants are valuable as food sources for small fish and cover and hunting grounds for large predator fish.

Myriophyllum sibericum is one of our native milfoils. It is also a valuable food source for fish.

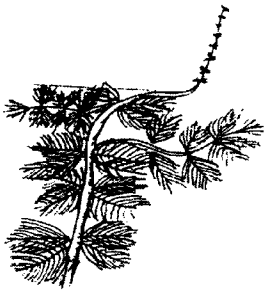
AND THE BAD

Our northern Wisconsin lakes are threatened by several aggressive non-native aquatic and semi-aquatic plant species. During the first three studies none of these species were collected.

In 1997, a small bed of purple loosestrife was reported in the eastern bay. This community has been dealt with and does not pose a major threat to the lake as long as the District remains aware of it.

POTAMOGETON CRISPUS
Curly-leaf pondweed

During a 1999 survey by lake volunteers,a small bed of curly-leaf pondweed was reported in the south end of the lake. This is an aggressive, Eurasian species that is usually associated with very turbid waters. Selective removal and monitoring by the District should keep this plant in check.



MYROPHYLLUM SPICATUM
Eurasian water milfoil

Eurasian milfoil has <u>not</u> been reported in Kentuck Lake, but the likelihood of it finding its way here is high. It is important to know how to identify this plant and closely monitor the boatlandings for its presence.

RECREATIONAL USE

Most studies of this sort do not include information on a very important piece of our "Lake" puzzle - recreational usage. Recreational activities can have a major impact on water quality, can lead to user conflicts and are very often at the root of management activities. Determining how our lake is being used, helps decision makers determine where their efforts should be placed. In 1996, as part of a county-wide lake study, recreational usage information was collected.

Additional information was collected in 2000. A summary of this data is presented in the table below.

The table contains the average activity during three periods each day. Values of <1 indicate 1 or 2 participants during the three periods. Note that the decline in "lounging" is probably due to a difference in data collection and not a true representaion of this activity.

Kentuck Lake is large enough to support a number of activities without much conflict, however it is important to keep certain activities in appropriate areas. As was illustrated in the opening article, **high impact activities can have a very detrimental effect on water quality if they are done in shallow, sensitive areas.** Speed restrictions near the shoreline are put in place to protect these areas, not to inhibit enjoyment of certain activities.

	7/6/96	7/30/96	8/17/96	7/1/00	7/3/00	7/4/00
FISHING	40	4	27	23	30	15
SPEEDBOATING	8	1	5	2	2	0
WATER SKIING	1	0	<1	0	2	<1
JETSKIING	0	0	0	2	0	0
SAILING	<1	0	<1	0	0	<1
SMALLBOATING	2	0	<1	0	2	3
SWIMMING	3	0	1	0	3	1
LOUNGING	20	4	18	2	<1	<0

SHORELINE PRESERVATION

The Key to A Healthy Kentuck Lake

The living communities within a lake are "fed" by several different sources. The surrounding watershed and the sediments within the lake both provide the nutrients that either maintain healthy populations or, in some cases, lead to communities out of control.

Considering Kentuck Lake has a relatively small watershed without a great deal of nutrient load, the area near the water's edge is a vital area of impact.

In 1999, consultant Sandy Gillum and a team of Kentuck Lakers, set out to assess this impact and identify areas to target for improvement. The plan was an ambitious one – an extensive survey was performed on each lot along the lakeshore to find out how natural factors and man-made "improvements" were potentially impacting water quality.

The survey team gathered hundreds of pieces of data which have been compiled and interpreted by Sandy. The entire report, including photographs of the entire shoreline, is available for review through your commissioners.

The tables on the next page are a sample of the information gathered. The table on the top left shows current shoreline types and indicates that the native shoreline of Kentuck Lake is much more intact than many lakes. The table below the first one shows shoreline slope and indicates that a vast majority of parcels are in the moderate to steep catagory. This means that shoreline preservation is especially important since disruption will likely lead to dramatic consequences. The final table shows current erosion problems and indicates that these are quite rare but still present.

TEARING DOWN THE WALLS - THE MYTH OF SEAWALLS

It is often assumed that the best shoreline stabilizer is a sturdy concrete seawall. While this type of wall can significantly lessen the effects of wave action on the zone directly behind the wall, it can often lead to more devastating effects on the shoreline adjacent to the wall. The wave force is actually magnified by the wall and applies that force to the areas of the end off the walls. Seawalls can also eliminate "microhabitats" important to small fish and amphibians (see page 10)

THE NATIVE SHORELINE

The primary goal of a "properly functioning" shoreline is to minimize nutrient load to the lake by:

1. Slowing runoff
2. Stabilizing the shoreline
3. Lessening the impact of precipitation

The best way to ensure these things are happening is to simply leave the native shoreline completely intact. The native vegetation has evolved to naturally provide these functions.

The layers of plant growth act to intercept precipitation and utilize nutrients before they can reach the water. Also, native plants have significantly deeper and more complex root systems that work to hold the soil tightly in place. For many of us though, some modification is necessary for us to be able to take advantage of the activities that we enjoy. When we consider these modifications we need to determine what effect they might have on this process and try to minimize that impact.

WHAT DO I DO?

So, you've decided to improve your shoreline but aren't sure how to proceed. Consider following this checklist:

1. Address serious erosion problems as soon as possible. Attempt to divert water flow away from the lake. A "patch" of screen material with rigid support may be necessary to repair major gullies.

2. Redesign areas that may contribute to erosion problems. Divert runoff from eves. Add some twists and turns to the path to the lake. Dig a shallow ditch near driveways, patios, and other flat surfaces to intercept runoff. **Be sure that these activities are reducing erosion and not contributing to it.**

3. If there are no obvious erosion problems, simply leave the shoreline alone for one season. The soil, even beneath lawn grass, contains a "bank" of native seeds. Often, native plants will re-grow in an area if left undisturbed and unmowed.

4. To take a more active approach to re-establishing shoreline vegetation, first determine what is appropriate. Visit with neighbors and review the shoreline project report (available through your commissioners) to see what kind of plants grow on adjacent properties. Consider similarities in slope, soil and shade when trying to decide on appropriate plants. You may also want to check out some of the many references currently available on shoreline restoration. Page 12 of this magazine contains a partial list.

5. At any point in this process, you may want to involve a consultant. But, certainly at the point when you have determined what you would like to plant, you should ask an expert to evaluate your plan. A consultant will be able to give you an idea of cost, availability, and expected success rate of specific vegetation.

6. You may wish to contact a District commissioner to find out if funding assistance is available for your lake improvement project. Some major projects may require a permit or other regulatory consideration. Be sure to ask your commissioner or a DNR representative about this.

"BLOWDOWNS"
POLLUTION, EYESORE – MYTH NUMBER 2

Fallen trees or "blowdowns" in the lake are often removed immediately. There is usually the sense that the lake should be "cleansed" of this "mess". But, blowdowns provide a number of benefits. They provide for a number of wildlife activities both above and below the water surface. They are shelter and feeding sources for fish and other aquatic animals, "basking" areas for turtles, and "hunting grounds" for raccoons and other small, carnivorous animals. They also act to disrupt wave action thus protecting the shoreline behind them. So, the next time Mother Nature provides you with a blowdown, consider leaving it where it is and enjoy the wildlife it supports.

Care of Shoreline	feet of shoreline	% of shoreline
Rip/Retaining Wall	1,159	3.56
Natural Vegetation	28,730	88.37
Mowed Lawn	724	2.22
Bare Ground	751	2.31
Other	10	0.03

Slope	# parcels	% parcels
Flat	8	6.11
Slight	17	12.98
Moderate	28	21.37
Steep	78	59.54

Erosion Evidence	# parcels	% parcels
None	104	79.38
Ruts/Gullies	7	5.34
Bare Ground	12	9.16
Other	3	2.29

THE LIVING SHORELINE
Wildlife and Our Lake

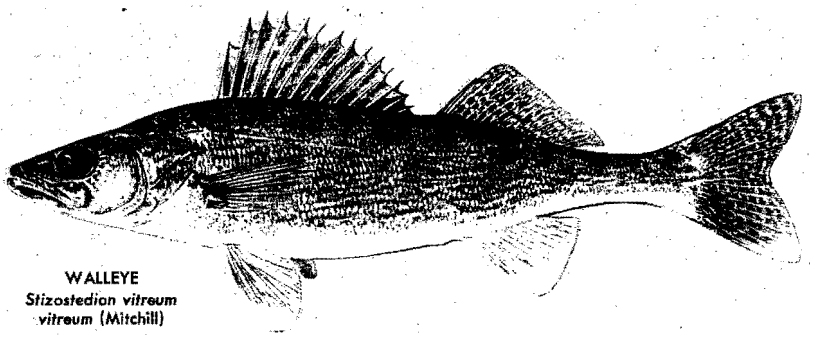
A natural shoreline provides countless advantages for wildlife. Some very obvious, others not so.

BIRDS – Studies by our very own Sandy Gillum, have shown that while total numbers of birds might not decline with removal of native shoreline vegetation, the types of birds change dramatically. Different bird species are very dependent on specific types of vegetation for food and shelter. A suburban-type lawn almost immediately leads to a loss of native woodland bird species and an influx of "urban, park" species.

INSECTS – Like birds, many insect species rely on very specific plant life for subsistence. And, while fewer of us appreciate our native insects than do our native birds, these smaller flying friends provide a number of benefits. The most important to most of us would be the dragonfly, which consumes an enormous amount of mosquitoes and other insect pests. Dragonflies require protected areas near shore where they can complete their metamorphosis into adults. Many species prefer tall, native vegetation.

FISH – Fish, like the other animal groups mentioned, are usually somewhat selective in their habitats. The most frequent loss of fish habitat is due to sedimentation of breeding grounds. For many lake users, there is nothing more exciting than landing a "monster" fish or even spotting one. But, it's important to remember that the big ones rely on the little ones, which often rely on the even littler ones, which may require very shallow, clean breeding areas. These areas are the first to become sedimented and can be completely lost if seawalls and other man-made shoreline stabilization structures are installed.

AMPHIBIANS – Our native amphibians include several of the most threatened species of wildlife in our area. They require continuous cover from woods to waterline and beyond, along with access to the water. Lawns, landscaping, beaches, and seawalls can disrupt their breeding activities.



WALLEYE
Stizostedion vitreum vitreum (Mitchill)

Maynard Reece Iowa Fish and Fishing 1951

The fishery in Kentuck Lake has been managed for over a half a century. Records indicate that as early as 1939 the Wisconsin Conservation Department (the predecessor of the Department of Natural Resources) was stocking fish. For the first several decades of stocking, the lake was managed for bass and panfish. In the 60's, muskies were stocked and in the 80's interest shifted to walleye. Numerous studies have been performed to assess the fish populations and to determine success of stocking activities. Since the onset of walleye spearing by Native American tribes, the Great Lakes Fish and Wildlife Commission has monitored the fishery with some oversight by the WDNR

According to the results of the resident's survey, the state of the fishery in Kentuck Lake is a very high priority for many residents. Unfortunately, it is difficult to make recommendations in this area since the issue is somewhat political and there is no strong scientific support for any specific recommendations. Also, the fact that the fishery has been manipulated for an extended period of time and the lake has undergone some changes that have greatly affected the fishery (rusty crayfish invasion and other, more subtle cycles) further confuse this issue. Generally, the best fishery management strategy is to support the naturally successful fish species. However, this does not mesh with the current expectations of many residents, lake users and public agencies.

It is important to understand and expect the fishery to be somewhat dynamic, as the table below demonstrates. Also, those interested in this issue should remain well educated on the activities of both the DNR and the Great Lakes Fish and Wildlife Commission. A comprehensive collection of study results and correspondences on fishery issues can be obtained from the District.

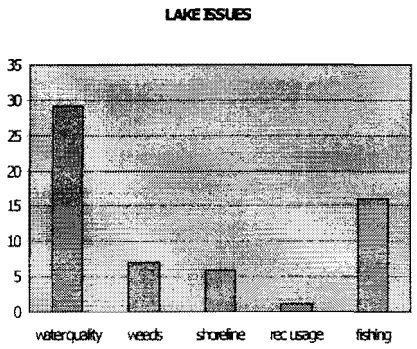
	1944	1950	1958	1971	1983	1984	1996
WALLEYE	0	0	0	2	97	86	3
SMALLMOUTH BASS	6	27	65	168	24	77	215
LARGEMOUTH BASS	4	3	0	1	1	3	282
BLACK CRAPPIE	41	3	590	19	78	75	3080
YELLOW PERCH	-	42	1075	188	96	8	90

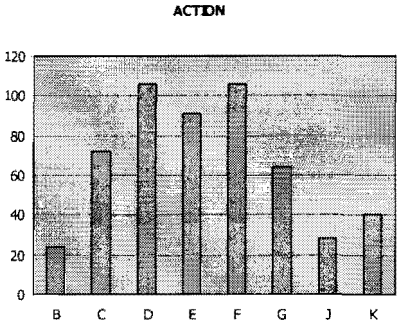
This chart represents fish captured during summer fyke netting and survey seine which reflect biased results. It is provided to show the dynamics of the fishery.

RESIDENT SURVEY

In 1999, a survey was sent to all Kentuck lake residents. The survey asked residents to rate their top concerns regarding lake management and how they felt these issues should be dealt with. Response was tremendous. Of the 142 surveys sent, 103 were returned. The tables on this page show some of the results of the survey. The first graph summarizes the total number one votes for most important lake issue. The next graph shows how residents feel these issues should be dealt with. This graph shows "weighted results" (number 1 vote = 3 points, number 2 vote = 2 points and number 3 = 1 point.). The graph shows only the top eight responses, but all received some votes.

Over sixty percent of those who responded, said they feel that **lake property owners** should be the group primarily responsible for monitoring the lake.





A strengthen lake organization
B develop a plan
C define the problem, determine the cause
D stock fish & improve habitat
E assure proper use of septic systems
F manage plants, algae & monitor water quality
G restore natural shoreline and vegetation
H enforce environmental and safety laws
I provide citizen monitoring of gov't decisions which affect the lake
J educate people about environmentally friendly land use practices
K manage boat numbers, size, horsepower or activities
L leave things as they are, no action

Septic survey

The survey also included a section on private waste systems (septic, etc...). Response indicated that Kentuck Lake probably does NOT have a large number of "non-compliant" systems, which are a major problem on many other lakes. 42 of the 82 respondents to this portion reported that their systems are less than 10 years old. 25 systems are 10 – 20 years old and only 15 are over 20 years old. Also, only about 15 % of the systems are within 100 ft. of the lake.

Several area lakes where septic contamination has been determined to be a major area of impact, have initiated very costly and controversial programs to tackle this issue. If the District continues to educate residents on septic issues and support local zoning regulations that promote healthy systems, there should be no need for a more aggressive approach to this item at this point.

RECOMMENDATIONS

1. Encourage, **however possible**, preservation and restoration of the native shoreline. Consider a matching funds program and/ or a "compliance timeline." This is the most vital aspect to the preservation of Kentuck Lake. Make new residents aware of this issue "before it's too late."

2. Continue to collect water quality data and track trends. The more extensive and complete the data base, the more meaningful interpretations can be made.

3. Monitor activities in sensitive areas – near-shore, shallow water and bulrush beds. High impact activities in these areas will have an adverse effect on water quality and wildlife. Some lake users feel that restrictions are in place only to "take something" away from them. Educate them on how proper recreational use help the lake continue to "give" everything it's capable of giving.

4. Continue to be involved in fish management decisions. Concerned District members should consider developing a **detailed, formal** request to be involved and submit it to the WDNR and GLFWC.

5. Continue the high-quality educational effort that has kept Kentuck Lake residents informed on issues concerning the lake. Specifically stress wise land development to residents on the steep slopes and septic monitoring to those in lower areas. "Specialized" education will likely have a greater impact. Consider group "seminars" designed for residents with particular land use issues.

6. Maintain an aquatic-plant team to monitor the lake and especially the boatlandings for non-native species.

7. Support local zoning regulations that promote septic monitoring and improvement.

Selected District and lake management activities

1985 Kentuck Lake Protection and Rehabilitation District formed.
1986 Volunteer water quality monitoring is begun (and has continued uninterrupted to 2001).
1989 DNR personnel perform an aquatic plant survey.
1990 West side boatlanding closed.
1990 District votes 59 – 20 to keep landing closed.
1991 District votes to request a moratorium on walleye spearing while lake recovers from crayfish infestation.
1992 District personnel report on lack of support by DNR and GLIFWC for 1991 request .
1993 District approves motion to provide $5000 for building to house a fire truck. DNR performs plant survey.
1995 Fire committee disbanded as this is determined to be a town responsibility.
1996 USFS personnel reports that 30 fish cribs and 50 "half-log" nesting structures will be placed in the lake. DNR performs plant survey.
1997 Kentuck Lake is included in a county-wide (Forest) study of lakes. Data on aquatic plants, shoreline development and recreation is collected.
1998 District votes to pursue a Lake Planning Grant for the purpose of developing a lake management plan.
1999 District volunteers, under the direction of Sandy Gillum, complete an extensive survey of current shoreline use and condition. District volunteers perform an aquatic plant survey.
2000 Kentuck is included in a scientific "runoff" study.
2001 Final planning grant report is issued.

References / Resources

Better Homes and Groundwater WNDR PUB # WR386-95
Landscaping for Wildlife and Water Quality call Minnesota Bookstore 1-651-297-3000
Life on the Edge...Owning Waterfront Property UWEX-Lakes Program College of Natural Resources, UWSP, 1900 Franklin St. Stevens Point, WI 54481
The Living Shore Video UWEX and UMEX call 1-800-542-LAKE
Shoreline Plants and Landscaping UWEX 1994 / WDNR PUB-WR-461-94
The Water's Edge WDNR PUB-FH-428 00