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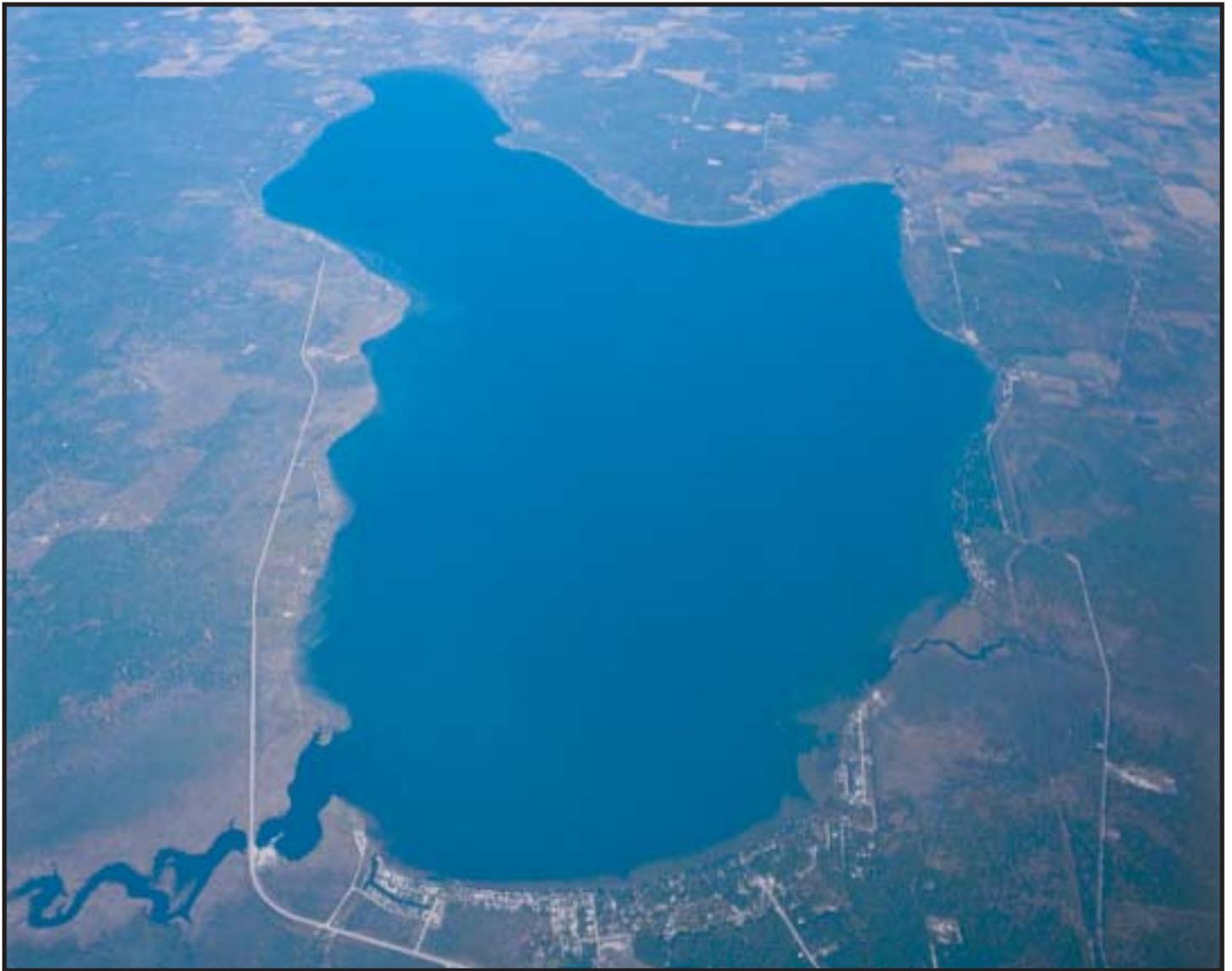
THE MICHIGAN
RIPARIAN



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DEVOTED TO THE MANAGEMENT AND WISE USE OF MICHIGAN'S LAKES AND STREAMS

Published Quarterly – February, May, August and November



HUBBARD LAKE – ALCONA COUNTY

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In This Issue

Cover: Hubbard Lake, Alcona County

- 8 MANAGEMENT OF LAKEFRONTS AND RIVERFRONTS THROUGH PLANNING & ZONING
- 10 PETE PETOSKEY INDUCTED IN MUCC'S CONSERVATION HALL OF FAME
- 11 THE ATTORNEY WRITES—Clifford Bloom
- 14 STREAM STUDY TRAINING—IRON RIVER
- 15 NEW SEPTIC SYSTEMS APPROVED
- 20 FAYETTE STATE PARK—DELTA COUNTY
- 21 GIANT INVADERS THREATEN FISHERY

The Michigan Riparian magazine adds Contributing Editors to its staff. The new editors and their areas of expertise are listed below:

Dr. Lois Wolfson, Institute of Water Research, Michigan State University. Area of expertise—Aquatic Plants.

Anthony Groves, Progressive AE of Grand Rapids. Tony's area of expertise is Land Use and Water Quality.

Dr. Don Garling, Department of Fisheries and Wildlife, Michigan State University. Area of expertise is Fisheries Management.

Bob Weir, Writer and Communications Consultant, Port Huron, Michigan. Areas of expertise include land use, water resources, and stewardship of those resources.

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Management of Lakefronts and Riverfronts through Planning & Zoning

by John D. Warbach, Ph.D., Principal
 Planning & Zoning Center, Inc., Lansing, MI
 Phone: (517) 886-0555

Big Picture

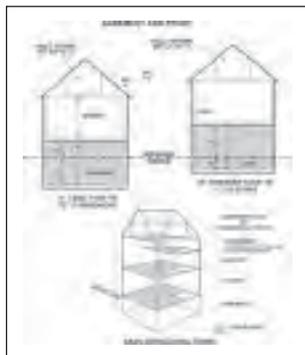
- Lakes need protection
 - Water quality
 - The lakefront experience



- How we build on the lakefront and in the watershed affects:
 - Water quality
 - Lakefront experience



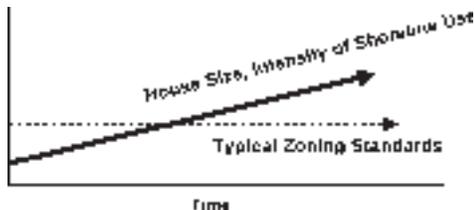
- The form of building is generally regulated by zoning.
- Local government (usually townships) is the arena in which planning & zoning takes place



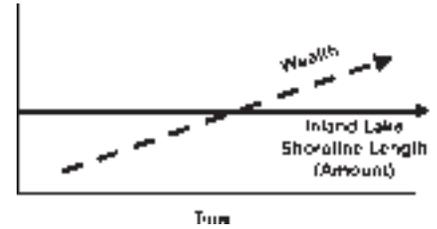
- There is a continual turnover of lakefront property owners



- Is Zoning Typically Up-to-Date?



- Pressure Increasing On Waterfront



- Axiom: Someone will initiate change on the lakefront.



Who will initiate change?

- Existing lakefront cottage or home owners
- Future property owners • Absentee owners
- Local government • Speculators • Developers
- Will the impact of that change be planned for—or will it just happen?

Discussion Point for your Lake Association:
 Management by Dreaming or by Planning

- Individuals who want to do their own thing without consequences:
 - Develop shoreline to maximum fun use but want lake to stay in good shape
 - Everyone else be lake-friendly
- Or is there a community spirit?
- What will be cumulative effect of individual actions?
- What will be cumulative effect of individual actions?



Involvement

- Jobs • Kids/grandkids • Increased travel time due to sprawl • Keeping up house and yard • Church or service organizations • Lake association activities
- Recreation/stress relief/unwinding • Hobbies
- Time for community planning?

Planning Tools to Support Zoning

- Watershed Plan
- Lake Management Plan
- Local Master Plan, Land Use or Comprehensive Plan

Sets Forth Goals

- Protection of water quality
- Access to the water
- Community character and lake naturalness

Three keys:

1. Public education—public input
2. Inventory—data base to know what you have and trends (water quality, access, variance requests, etc.)
3. Strategies—how to achieve goals

Three Approaches:

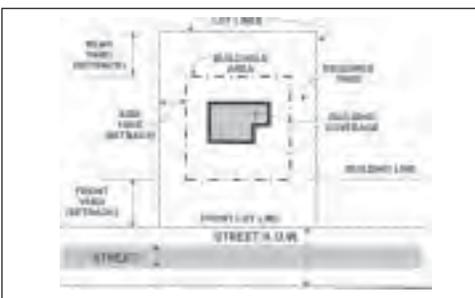
1. Education
2. Regulation
3. Ownership

• Education

- Lake management principles (action—result)
- Lake friendly landscapes
- Pollution prevention
- Green building practices
- Zoning ordinance (does your lake association have a copy?)
- COMES BEFORE, DURING AND AFTER PLANNING AND REGULATION

• Regulation—zoning and police power

- BALANCES PRIVATE RIGHTS AND PUBLIC INTERESTS
- Setbacks
- Lot coverage
- Height
- Keyhole
- Fertilizer, Septic & Pet Waste
- Performance standards
- Building codes
- CHANGES IN REGULATION COMES AFTER EDUCATION AND PLANNING



Performance Standards

Examples:

- Clean stormwater
- No nutrient pollution
- Public views of the water remain
- Emergency access
- Other



• Ownership

- IF YOU ARE UNHAPPY WITH THE PROSPECT OF DEVELOPMENT—BUY THE PROPERTY
- Purchase of parklands/access
- Conservation Easements
- Purchase of Development Rights (PDR)
- IS A TOOL TO IMPLEMENT PLANNING AND COMES AFTER EDUCATION AND PLANNING AND ALONG WITH REGULATION

Ownership:

Access sites need to be reasonable in relation to adjoining property owners and carrying capacity of lakes



Take home lessons:

- Change will happen with you or without you.
- Planning and zoning is a tool to balance private rights with public interests—remember the word balance—you are sometimes dealing with competing interests.
- Education has to be constant—new lakefront owners and turnover of local officials.
- Planning and zoning are part of the handbook of life on the lake—like the instructions on your boat motor. ♦

PETE PETOSKEY INDUCTED IN MUCC'S CONSERVATION HALL OF FAME

Courtesy Albert Township, Montmorency County, Michigan

The name of Merrill "Pete" Petoskey is legendary in conservation circles, not only here in Michigan, but nationally as well. His abbreviated resume is so extensive that a typist would have to use a size 8 font to fit it all onto one page.

Born in 1923, Pete has devoted both his personal and professional life to conservation and a passion for "stewardship" of our natural resources. After getting his B.S. in Forestry-Wildlife Management from Michigan State University in 1943, Pete served his country in the Field Artillery of the U.S. Army during WWII, during which time he advanced from Private to Captain and suffered the significant hearing loss that has become the foundation for the booming voice that is impossible to ignore. After mustering out, Pete returned to Michigan State University and earned his Masters in Forestry-Wildlife Management in 1947. After that, Pete returned to the military to serve in the Korean conflict, and then embarked on a long and significant natural resources career that took him from Wildlife Ecologist to Chief of the Wildlife Division with the Michigan Department of Natural Resources (then the Michigan Department of Conservation), to Director of Wildlife Management for the U.S. Forest Service. He continued his service to the conservation cause as Deputy Administrator of Natural Resources and Rural Development for the USDA's Extension Service until he "retired" in 1984.

During and subsequent to his professional career, Pete has been involved in conservation activities, organizations and projects ALMOST too numerous to mention – but I will. To name a few, the Society of American Foresters, the Society for Range Management, the NRA, Ducks Unlimited, National Audubon Society, Michigan Audubon Society, Ruffed Grouse Society, National Wild Turkey Federation, Izaak Walton League, National Wildlife Federation, Michigan Outdoor Writers Association, Lewiston Sportsmen's League, Montmorency County Conservation Club, Montmorency Conservation District, Michigan Resource Stewards and MUCC have all benefitted from his active membership.

Pete has distinguished himself in just about every phase of his extensive career. Here in Michigan, though, it was his tenure as Wildlife Chief of the MDNR that earned him his place in Michigan's conservation history. As Dave Dempsey cited so eloquently in his book *RUIIN AND RECOVERY, Michigan's Rise as a Conservation Leader*, Pete Petoskey paralleled "the trajectory of the state's ever-growing wildlife management regime from the 1940's through the 1970's." Believing that "there's more to hunting than a chunk of meat" Pete initiated a change in the name of his division from "Game" to "Wildlife Division." He "boldly" predicted that the paltry state deer population of the 40's, 50's and 60's would rebound to one million by 1980. His proposal to set aside \$1.50 from every deer hunting license to fund deer management soon burgeoned to over one million dollars. By implementing sound herd and range management policies, the deer population exceeded his one million prediction before 1980, making him true to his word. To quote Dempsey again, Pete "is typical of a breed of wildlife professionals unafraid to challenge both established doctrine and the beliefs of his paying constituency, the hunters. Proud of their training and knowledge, committed to letting biology rather

than politics govern their decisions, Petoskey and peers won a national reputation for Michigan as a wildlife leader."

One of Pete's great strengths has been his ability to express his opinion, to suggest both a problem and its solution, whether it was politically correct or not. He is a man of great conviction and personal courage. Many people gravitated to his strong leadership style, as they knew that he could always be counted on to speak the truth, regardless of the personal risk. In fact, "speaking the truth" is number 16 on Pete's list of 24 Principals of Leadership that have been his personal and



professional guide. Among these are:

- Principal #6: When assigned a duty, do it without squawking.
- Principal #9: A position is easy to handle when the previous incumbent was fired.
- Principal #10: Regardless of how much you know, or think you know, you don't know everything.
- Principal #16: Always speak the truth, and then you don't have to remember what you said.
- Principal #24: In any assignment, anywhere, don't lose your sense of humor, and never fail to count your blessings. You will find your blessings will far exceed your troubles.

Pete's sense of humor is legendary. When told that the dress for a Christmas party was "casual," Petoskey showed up in his bathrobe and bedroom slippers!

In Montmorency County, Pete has been a presence, if not a force of nature, for decades. He served as the Chairman of the Montmorency Conservation District Board for many years. During this time, he has motivated everyone he's worked with to embrace his deep commitment to conservation and responsible stewardship of our natural resources in everything they do. His philosophy that we are all part of a "greater community" is a life lesson that he has shared with countless individuals. He has served as an elected Trustee of Albert Township for a considerable time, serves on the Twin Lakes Property Owners Association Board, and sings in the church choir. He annually sponsors a rabbit hunt for young hunters, providing his beagle "Big Mouth Bill" for tracking. He's also been involved in Hunter Education training on a local (and national) level as well.

In addition to being a passionate conservationist, Pete is a devoted American, Christian, husband, father and friend. His presence in the lives of those who have had the pleasure of knowing him is a treasure. As if this weren't enough, Pete Petoskey has been an exceptional friend and supporter of MUCC. He is a regular participant in MUCC's annual convention, has been his local club's MUCC representative at board meetings for decades, and has served on numerous MUCC committees. Over the years, he has sat in the audience and sincerely applauded the many past recipients of the award for which he is being nominated. Now, it is **his** turn. His contribution to the state of Michigan's conservation legacy during his 81 years is remarkable, and that is why he is a most worthy and overdue candidate for MUCC's Conservation Hall of Fame. ♦

Editor's Note: Pete has been a Trustee of the Michigan Riparian Board for twelve years and continues to serve as its Vice President.



Attorney Writes

By Clifford H. Bloom

Law, Weathers & Richardson, P.C.

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WHY IS INSURANCE SO IMPORTANT FOR LAKE PROPERTIES?

An amazing number of riparians are underinsured when it comes to liability insurance coverage for their lake property. Many riparians still have liability insurance coverage of only \$300,000 to \$500,000 for their lake property. Where jury verdicts or even settlements in excess of \$1,000,000 (or even more) are not uncommon, prudence dictates that liability insurance coverage below \$1,000,000 (and in many cases, even more) is probably unwise.

Lakefront properties and their appurtenances pose potential injury or death situations which are not present for conventional dry land properties. For instance, riparian properties carry water risks such as drowning, diving into shallow water from a dock or swimming raft and similar situations. Boat propellers, high speed boating, water skiing, personal watercraft, water trampolines and other water “toys” all increase the risk of injury or even death.

Many property owners believe that they can only be sued if they are, in fact, at fault. Even claims which are without merit often end up in litigation, for which the property owner will have to legally defend himself/herself. The attorney fees and court costs alone involved in defending oneself against a tort action can exceed \$50,000, \$100,000 even more, even if you ultimately prevail in court. Furthermore, under the American system of attorney fees, in most cases, each side pays his/her own attorney fees, regardless of who prevails in court. In addition to the legal defense costs for trial, one should also consider the additional attorney fees and costs associated with any appeal (whether by the property owner or the party bringing the lawsuit). Most liability insurance policies cover not only potential damages judgments against the insured, but also usually pay for the legal defense costs (although there are always policy limits). Whether or not a property owner is at fault for the injury or death involved is a question of fact to be determined by a judge or jury, and the results can often be unpredictable.

Proper and sufficient liability insurance coverage can also give you peace of mind. If one is unfortunate enough to have a damages verdict rendered against them in court for an injury or death occurring at their property and the insurance coverage is not sufficient to cover the damages verdict, the property owner would normally be personally liable for the portion of the verdict which is not covered by insurance proceeds. In some situations, that can financially ruin a person, prompt bankruptcy or both.

A common minimum recommended liability insurance for lake properties in Michigan is \$1,000,000, although some experts recommend \$1,500,000 or even \$2,000,000. Quite often, a liability insurance policy “umbrella” can be purchased which is on top of your normal homeowners or other liability insurance (for example, a \$1,000,000 liability insurance umbrella on top of a basic \$300,000 liability coverage for the lakefront house). Of course, if you have a teenage driver or drivers in your family, liability insurance premiums can be dramatically higher.

It should be noted that general liability insurance for lakefront property will not cover any damages, lawsuits or related matters arising out of use of a boat, personal watercraft, snowmobile or other vehicles—normally, a person must purchase separate policies (or policy riders) for coverage for such vehicles.

You should also confirm with your insurance agent that your liability insurance policy will cover lake appurtenances such as docks, shorestations, swim rafts, water trampolines and similar items. If there is an injury or death at or involved with your lakefront property, notify your insurance carrier immediately. That might not only be required by the insurance policy itself, but it is often helpful to have the insurance company potentially investigate the facts and circumstances soon after the accident rather than some time later. ♦



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HUBBARD LAKE

CALEDONIA TOWNSHIP, ALCONA COUNTY

A short summary by Douglas Cameron, President, Hubbard Lake Sportsman and Improvement Association; email: hlsia@deepnet.com

Located in northern Alcona County, Hubbard Lake is one of Michigan's largest natural inland lakes covering 8,850 acres and almost 20 miles of shoreline, a mean depth of 36 feet and an official maximum depth of 97 feet. Originally named Lake Alcona and considered sacred by the Chippewa Indians, Hubbard Lake was named for Dr. Bela Hubbard, who, along with Dr. Douglass Houghton, first surveyed the area in 1850. Fed by the West Branch River, Sucker Creek, and Holcomb Creek, it is the source of the South Branch of the Thunder Bay River. A dam built at the north end in the late 1800's to support the timber industry raised the lake level about six feet. Thunder Bay Power currently controls the water level at limits established thru negotiations between HLSIA and the MDNR and included in TBP's FERC license agreement.



Since 1946, Hubbard Lake Sportsman and Improvement Association (with a current membership 223 families and 136 individuals) has worked to improve the fishery and monitor water quality. A monthly newsletter is published for its members and other residents of the Hubbard Lake community reporting news of association and social events and water level measurements.

Walleye, smallmouth bass, and perch fisheries currently hold dominance in a lake renowned for its pike and perch. Recently the DNR has been planting "pike fry" to bolster a slumping pike population and an HLSIA perch-raising program has supplemented the perch fishery. The State of Michigan began walleye stocking in 1977 and rainbow trout were unsuccessfully stocked in 1969.

Water quality efforts in cooperation with Michigan Lakes and Streams include the use of the Secchi Disk and measurements of phosphorous, chlorophyll "a", and dissolved oxygen. Hubbard Lake is generally deep and clear with dissolved oxygen at the deep levels to support cold-water fish such as trout and whitefish, and pike, bass, walleye and perch at the upper levels. Zebra mussels were first observed in 1999.

In 1992 with the lakes's vegetation declining possibly because of an infestation of rusty crayfish, HLSIA embarked upon a fish shelter program. An eleven-year effort placed over five hundred fifty slatted wooden crates (3 feet by 3 feet by 8 feet) filled with unsold Christmas trees and weighted with

(Continued on page 16)

Stream study training held along the Iron River

By Janet Rohde

IRON RIVER—Michigan Lake and Stream Assoc. along with the Iron Lake Homeowners Assoc. sponsored a stream study training program in Iron River on Oct. 24. The presentation was held at the West Iron County Schools administration building followed by field work in and by the Iron River along the RV trail.

Jeff Kalember of Gaylord presented the program whereby water-quality of streams and rivers could be monitored. He explained that collecting samples of benthic macroinvertebrate – stoneflies, mayflies and other bugs – the overall health of the stream could be determined.



Munising High School student Garrett Saari wades into the Iron River and dips his net deep to unearth some of the riverbed to be checked for stream quality during the Michigan Lake & Stream Assoc. stream study training program.

Two students and their science teacher from Munising High School accompanied Kalember to demonstrate the field process. The students will be required to report on the training session and assist in programs in their area. Also participating in the training were members of the Iron Lake Homeowners Assoc., WIC High School science teacher Joel VanLanen and two other high school science teachers from Marinesco and Norway.

THE STREAM STUDY held in Iron River, Kalember explained, was part of a three part program sponsored by Michigan Lake and Stream Assoc. to educate Michigan youth about stream quality. The training began in 10 schools in the northern Lower Peninsula. The second step, he continued, was to bring the training to the Upper Peninsula and the third would be to reach schools in the southern Lower Peninsula.

Kalember, a science teacher at the Gaylord High School, said that he grew up in the U.P. and was glad to be here working. Michigan Lake and Stream Assoc., along with the Gaylord High School had received grant funding to develop a lake testing program, and has recently received additional funds to expand the program to include streams.

The association states that the purpose of the program is to foster working relationships between lake associations and high schools, gather water quality data, and to educate youth about the delicate and important nature of our lakes. ♦



Jeff Kalember (second from left) shows members of the Iron Lake Homeowners Assoc. and high school science teachers attending a stream study training on Oct. 24 a three-year old dragonfly which was brought up from the river bottom. Kalember said that this shows a sign of a healthy river for the past three years.



Bob Miklesh, science teacher at Marinesco looks on as teacher Ted Williams and student Cassie Heyrman of Munising check the amount of dissolved oxygen in the Iron River. Cassie said that trout optimally need eight-to-10 parts-per-million of dissolved oxygen in the water and their test showed seven-to-eight parts-per-million in the river.



Munising High School science teacher Ted Williams (left), Iron Homeowners Assoc. Pat Swanson and WIC High School science teacher Joel VanLanen study a viewing pan looking for samples of stoneflies, mayflies or other bugs as part of a workshop for testing overall health of streams.

NEW SEPTIC SYSTEMS APPROVED FOR LAKE FRONT PROPERTY

(This is Part 2 of a series by Doug Coates, P.E. with Gosling Czubak Engineering Sciences, Inc., Traverse City, Michigan.)

INTRODUCTION

In the previous newsletter we provided some background information about Benzie and Leelanau County's new ordinances allowing septic systems for lots that previously would not "perc." These new standards allow sewage treatment using "innovative or advanced" treatment technologies. The advanced technologies protect the water quality of lakes and groundwater.

ENVIRONMENTAL CONCERNS

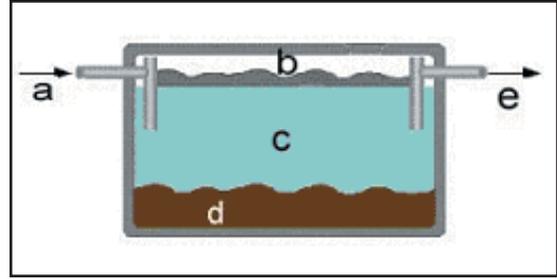
Septic tank systems serve a large portion of the homes in Northern Michigan. The discharge from these systems percolates into the groundwater. Because septic systems can only partially treat sewage, the groundwater receives pollutants and other compounds from the wastewater that can harm water quality. As the groundwater migrates and "vents" to surface water, the water quality of lakes and streams is degraded. These discharges can inhibit recreational use of rivers and lakes, and affect the quality of groundwater used for drinking water wells.



Lake front property is particularly vulnerable to septic system discharges because the water table is high around the lake and the housing density is often high along shorelines.

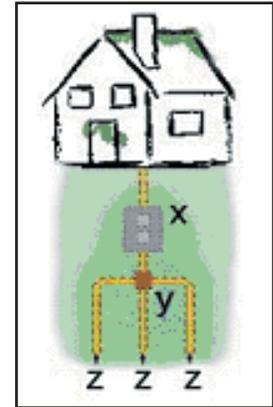
HOW SEPTIC SYSTEMS WORK

A conventional septic system detains wastewater in a tank for a period of several days. During this time, some solids settle to the bottom of the tanks and greases and oils float to the top of the water in the tank. Bacteria that do not require oxygen to survive (anaerobic bacteria) reside in the tank and partially treat the wastewater in the septic system. A septic system typically removes about 25 to 35% of the contaminants in wastewater before it is discharged to the drain field. By comparison, municipal sewage treatment plants remove 80 to 90% of the contaminants.



a = Wastewater In c = Wastewater
b = Scum Layer d = Sludge Layer
e = To Drain Field

The septic system drain field distributes the wastewater over a large area of sandy soil. The wastewater percolates through the soil until it contacts the water table. At that point, the wastewater mixes with groundwater. The sandy soil provides some additional treatment. However, after the wastewater reaches the groundwater table, very little additional treatment occurs. This is why it is important to have a deep deposit of sandy soil above the water table for septic system construction.



x = Septic Tank
y = Distribution Box
z = Drain Field

ALTERNATIVE TREATMENT SYSTEMS

Alternative treatment systems provide a much higher degree of treatment before discharging the water to the soil. There are two key advantages to this higher level of treatment. First, groundwater and surface water quality impacts are reduced. Second, the area required for drainfields can often be reduced.

There are several different alternative treatment systems available. They include:

- Advanced Treatment Systems
 - Sand filters (single pass and recirculating)
 - Aerobic and Mechanical treatment systems
 - Packed Bed Filters (single pass and recirculating)
- Advanced Phosphorus removal systems (only removes phosphorous)
- Disinfection using ultraviolet light or chemicals (only removes fecal coliform)

(Continued on page 16)

MDEQ DIRECTOR, STEVEN E. CHESTER HAS REQUESTED NEW RULES FOR EVALUATING MARINA APPLICATIONS

In a letter to Dave Dempsey, Dr. Niles Kevern and Donald Winne, DEQ Director, Steven Chester has directed “the Geological and Land Management Division to draft new administrative rules for the evaluation of Part 301 applications for new marina facilities.”

The rules for enforcing Rule 9 were approved and effective on June 15, 2000. Rule 9 provides that the DEQ shall not issue a permit for a marina unless the department determines that the facility meets all of the following criteria:

1. Does not unreasonably affect the public trust or riparian interests.
2. Ingress or egress are within the riparian owners interest area, or the riparian has secured written authorization from the adjacent owner whose riparian or property interest is or may be affected.
3. Increased use brought about by the marina will not create congestion or safety problems or aggravate existing congestion or safety problems.
4. Operation of the facility will not destroy or adversely impair the use of the waters or natural resources of the state.
5. The facility is not aesthetically displeasing and conforms to similar structures and activities in the area or similar watercourses.
6. The facility has adequate parking space to accomodate anticipated users.
7. The facility is in compliance with local zoning ordinances. If the local government does not file an objection within 30 days, the department may issue a permit if all other criteria are met.
8. The structures do not constitute a safety or navigational hazard and are in good repair.
9. The potential adverse environmental effects of operating a marina have been determined under Rule 281.814.

When permits for a marina are issued by MDEQ, they are authorized for a period of 3 years. Renewal for a permit must be applied for in October of the third year. The second permit expires in December of the following third year. ♦

NEW SEPTIC SYSTEMS APPROVED FOR LAKE FRONT PROPERTY *(continued from page 15)*

Each of these systems are similar in the way they are configured. All of the systems typically include a septic tank, a septic tank effluent filter, an alternative treatment system, a pumping station, and a drain field.

A table showing the treatment capabilities of these systems is provided below. The details of how these systems work and where they are best applied will be discussed in the next newsletter.

ALTERNATE TREATMENT SYSTEM PERFORMANCE

WATER QUALITY	Septic Tank	Advanced Treatment System (Single Pass)	Advanced Treatment System (Recirculating)	Phosphorous Removal Unit	Disinfection Unit
Biological Oxidation Demand (mg/l)	200	<15	<10	NA	NA
Total Suspended Solids (mg/l)	150	<15	<10	NA	NA
Total Nitrogen (mg/l)	45	<30	<10	NA	NA
Ammonia (mg/l)	35	<5	<5	NA	NA
Phosphorus (mg/l)	5	5	5	<2	NA
Fecal Coliform (mg/l)	>1,000,000	<5,000	<5,000	NA	<500

OPERATION AND COST

All of these alternative systems have a significantly higher construction cost than a conventional septic system. Sometimes this additional cost can be 3 to 4 times the cost of a conventional system. They also require more maintenance and attention from the property owner.

1-800-968-1062
www.goslingczubak.com

HUBBARD LAKE—CALEDONIA *(con't from page 12)*

concrete blocks. This ceased in 2003 when Michigan’s Department of Environmental Quality would not renew the permit.

HLSIA holds hunter safety clinics and an extremely successful youth fishing day held each June. One hundred of the area’s youngsters and twenty special needs citizens have lunch followed by brief instructions on bait, fish and aquatic life identification, knot tying, boat safety, birds, and the chance to catch a rainbow trout in a small netted area of the lake stocked with 250 rainbow trout. The fishers take home the trout (cleaned and bagged in ice for a future dinner), a new fishing rod and reel, a t-shirt and memories of an enjoyable day. Area merchants, U.S. Fish and Wildlife Service, the Alpena Power Boat Squadron, and the South End Fire Department support this effort. The fish that are not caught are released into the lake so, unofficially, the stocking of rainbow trout does continue. ♦

IMPERVIOUSNESS IS DEFINED AS THE SUM OF ROADS, PARKING LOTS, SIDEWALKS, ROOFTOPS, AND OTHER IMPERMEABLE SURFACES.

(The following information is from an article by Maureen Kennedy Templeton entitled, "Impervious Measures Impacts of Land Development" that was printed in the May 1989 issue of *The Michigan Riparian* magazine.)

Over the last few years there has been a lot of discussion in our community about growth management, watershed protection, quality of life, conservation easements, greenways, stormwater ordinances, alternative transportation, new roads versus improved roads, Keep the Bay Clean, Design book principles, open space, sense of place, farmland preservation, etc. We have some great initiatives across the region that are certainly making a difference in protecting what we all love about being here. It seems that there is consensus that we strive to reach our vision of continued regional economic stability while maintaining our high water quality resources and open spaces. It isn't the amount of growth that is a problem but rather it is the pattern of growth that could enable us to reach our vision or completely destroy our preferred way of being.

Imperviousness is a very useful indicator with which to measure the impacts of land development on aquatic systems. There is scientific evidence that relates impervious cover to specific changes in the hydrology, habitat structure, water quality and biodiversity of aquatic systems. According to the Center for Watershed Protection, this research, conducted in many geographic areas, concentrating on many different variables, and employing widely different methods, has yielded a surprisingly similar conclusion – stream degradation occurs at relatively low levels of imperviousness (10-20%). ♦

15-acres protected on Hubbard Lake

This 15-acre parcel located on Hubbard Lake in Alcona County has been permanently protected with a conservation easement held by Headwaters Land Conservancy. The property includes 400 feet of frontage on Hubbard Lake and approximately 1500 feet of frontage on Stevens Creek. Within the property are natural wetland areas and northern hardwoods make up the forest type. The protection of this property helps to ensure the quality and quantity of water and wildlife resources within the Hubbard Lake Watershed.

Headwaters Land Conservancy
Fred Gottschalk, Executive Director
P.O. Box 783, Gaylord, MI 49734-0783
989-731-0573 • email: headwaters@gtlakes.com
www.headwatersconservancy.org

THREE LAKES ASSOCIATION DEDICATED TO IMPROVING WATER QUALITY (Torch, Clam & Bellaire Lakes)

Three Lakes Association's Strength Water Quality

Inherent in everything the Three Lakes Association has done over the past nearly 40 years has been a goal of maintaining or improving the water quality of Clam Lake, Torch Lake and Lake Bellaire. Countless hours and a lot of money have been spent gathering and storing data. Many of our best efforts have included volunteers willing to gather samples. Yet, to this day, we cannot go into a contentious situation and irrefutably prove, based on all our data, a cause and effect relationship between human actions and changes in water quality.

There are a few key reasons why this is so: The lakes are huge volumes of water, with very complex hydrology, resulting in a major dilution factor on damaging changes. Sampling only takes in a few points of data, which may, or may not, represent overall impacts on the lakes. The total sum of our data has never been tabulated and modeled to demonstrate trends. Trends are very slow to develop, especially with very complex systems.

The Executive Leadership of TLA has committed to re-enforcing our efforts on water quality monitoring and data gathering. This is a timely move as we have some excellent people available to carry on this effort. The Water Quality Committee includes Bob Oswald, chairman, Dean Branson, Alan Hickman, Duane Drake, Jinks Ross, Tim Hannert and Jack Norris. All of these people either have a strong interest in the subject or professional qualifications, making them ideally suited to pursue this goal. We thank them for their continued commitment to this critical work.

We believe this focus on water quality will benefit all who use and love the lakes. It will also help emphasize the TLA role in the community as a resource for information to promote factual decision-making. We hope you will support and encourage these efforts by providing your time or resources. We need volunteers to monitor Clam Lake this coming summer. Please call 231-533-4852 if you can help. Thank you. ♦

— Ray Ludwa

RIPARIAN PROPERTY RIGHTS CASE LAW IN MICHIGAN

Selected Michigan Supreme Court Decisions that establish the ownership of the bottomland of inland lakes and streams to the centerline. Indefinite anchoring on someone else's bottomland is an act of trespass.

Lorman v Benson 8 Mich 18 (1860)

SUBJECT: Private riparian ownership of river bottom – Detroit River – log boom blocking access to river – right to remove ice – trespass action – public easement – state regulation of streams

FACTS: The plaintiff was a leaseholder of riparian property. The defendant had constructed a log boom which blocked plaintiff's access to the river to gather ice. The plaintiff's action is in trespass for obstructing the access to the Detroit River.

HELD: A riparian leaseholder may bring a trespass action upon land submerged under a public access river.

The Court adopts the common law rule that the title to the soil under public rivers is in the adjacent riparian owner. This soil when held by the State or by private hands is part of the *jus privatum* (private law) until the legislature intends otherwise. The riparian owner has a right in the property only so long as he regards the public easement. He is entitled to every beneficial use of the property in question, including enforcement of trespass rights, provided he exercises due regard for the common (public) easement of passage. But the State may still regulate the waterway although the soil belongs to the riparian owner. The trespass action was upheld.

Clark v Campau 19 Mich 324 (1869)

SUBJECT: Riparian right – trespass action – boundary line dispute

FACTS: This was a trespass action based upon a boundary dispute between adjoining riparian owners

HELD: The property lines for submerged land should be extended at right angles with the centerline of the stream from the point where the border line meets the shore. The aim in every instance is to secure to each owner such share as was indicated by his shoreline, and not by his land back of it. This agrees with *Lorman v Benson*, 8 Mich 18, and *Rice v Ruddiman*, 10 Mich 125.

Hall v Wantz 336 Mich 112 (1953)

SUBJECT: Navigable waters – riparian rights – Great Lakes – inland lakes – subaqueous ownership – trespass – indefinite anchorage – injunction

FACTS: Plaintiffs are riparian owners on White Lake who seek an injunction to restrain defendant from anchoring a raft indefinitely in the waters above plaintiffs' submerged lands. White Lake is a large, inland, navigable lake with an outlet upon Lake Michigan. Defendant owns and operates a 25 by 40-foot raft covered by a house which he operates as a fishing business. Plaintiffs seek a permanent injunction against indefinite anchorage, claiming a trespass. Trial court found for defendant.

HELD: The Court reiterates that riparians on the Great Lakes have different riparian rights than those riparians on inland lakes. Inland riparian lake ownership carries ownership to the middle of the lake, no matter how deep. This ownership to mid-lake doctrine has overcome some early dicta in *Rice v Ruddiman*, 10 Mich 125, which suggests that deep water might limit inland lake riparian rights. The Court rests its holding upon *Johnson v Burghorn*, 212 Mich 19, and *Paterson v Dust*, 190 Mich 679. These cases hold that a riparian's rights are limited by the public right to navigation, but this does not include the right to anchor indefinitely off the riparian's shoreline. The non-riparian defendant is a trespasser and injunction sought by plaintiffs issues. Reversed for plaintiffs. ♦

Big Whitefish Lake Association Ecology Committee Jim Ogg – Chairperson

500 acre Big Whitefish Lake, Montcalm County, has been engaged in an ongoing battle with Eurasian Watermilfoil for the past several years. In 2002 and 2003, we attempted the eco-friendly solution of weevils. That introduction proved to be ineffective. We believe that this was due to the significant number of seawalls around the lake. The weevils require beaches, leaf debris, etc. over the winter. Without them, they do not survive winter. In 2004 we went back to an aggressive Sonar treatment program. Professional Lake Management, Caledonia, MI managed this process. As I write this on July 12, we are witnessing almost complete knockdown. We will monitor closely and spot treat with 2-4D, as required in the future, optimistically hoping that we will not require another full lake treatment for several years. We have witnessed the usual and expected negative by-products of the eradication program, namely algae blooms and foam. We elected to *not* treat the algae blooms with copper sulphate and instead have allowed nature to take its proper course. Copper Sulphate has already been entirely banned in some of the environmentally very progressive states. We believe they are on the proper course. The foam is another by-product of the introduction of organic compounds as a result of the decomposing milfoil. It collects on the windward shores, does not occur often, and dissipates quickly. We are also closely monitoring e.Coli readings in our lake. We are getting some readings that are higher than would be expected, but not at an unsafe level. We suspect this is a result of our extraordinarily high swan population on the lake and on nearby ponds upstream. We have the good fortune of having a very proactive and aggressively protective Lake Association and Ecology Committee. We truly love our lake and will go to great lengths to protect it for future generations. ♦

Michigan Natural Resources Commission Appoints Rebecca A. Humphries, Director, Michigan Department of Natural Resources

by Brad Wurfel



Rebecca A. Humphries, a 25-year veteran employee of the Michigan Department of Natural Resources, has been named the new director of the agency responsible for the stewardship of the state's natural resources.

"Michigan is blessed with an abundance of natural resources that deserve the best care we can provide,"

said Keith Charters, chair of the Natural Resources Commission (NRC) responsible for Humphries' appointment. "Becky's extensive experience and balanced approach to natural resource management will provide the momentum we need in this arena," Charters added. "Her strong relationships with our stakeholders are key to finding solutions for the many challenges facing Michigan."

Humphries has spent her career with the MDNR, leaving her position as chief of the Wildlife Division to head the multi-disciplined agency.

"It is imperative we move into the future of resource management in this great state with a strong commitment to our natural resources, our agency, and our many partners," Humphries said. "I look forward to working with our dedicated staff and all our stakeholders. Collectively we can make a difference in preserving the integrity of our air, water, and lands."

Humphries' diverse background includes experience in four divisions with extensive field management experience. She has worked at a variety of levels in the department—from area field wildlife biologist to acting resource management deputy—directing and coordinating the work of several divisions.

"It is with great pleasure that we [the Natural Resources Commission] promote from within the ranks of the men and women who work so diligently in conserving and managing our natural resources," Charters said.

Most Recent Employment by MDNR (1998 to present)

Chief, Wildlife Division, Michigan Department of Natural Resources, 1998 to present. Responsible for administration of wildlife programs in Michigan including a budget of \$24 million (state, restricted state, federal and private fund sources) and a staff of 150 full-time employees. Administers statewide programs for Game and Natural Heritage programs, a member of the Statewide Council (supports ecosystem management) and the Department of Natural Resources Management Team. Provides leadership to the Division by identifying emerging issues, setting program direction, establishing priorities, and evaluating programs. Prepares wildlife hunting regulation recommendations for the Natural Resources Commission. Works with the legislature, other agencies (federal, state and local), conservation partners and the public. ♦

HOUSE BILL No. 5687

March 23, 2004, Introduced by Reps. Farhat, Palsrok, Brandenburg, Hoogendyk, Pappageorge, DeRossett, Garfield and Richardville and referred to the Committee on Great Lakes and Tourism.

House Bill No. 5687, introduced on March 23, 2004, by Representatives Farhat, Palsrok, Brandenburg and others, amends Part 801, Marine Safety, of Act #451, Public Acts of 1994 as follows:

Section 80141. (1) "Except as otherwise provided in subsection (2), a person less than 16 years of age shall not operate a motorboat on the waters of this state. (2) This section does not apply to the operation of a motorboat that is powered by a motor or motors totaling no more than 6 horsepower."

Section 80215. (1) Except as provided in subsection (2) and (3), a person under the age of 16 shall not operate a personal watercraft on the waters of this state."

WHAT IS THE ORDINARY HIGH WATER MARK OF THE GREAT LAKES?

The Michigan legislature established the ordinary high water of the Great Lakes by passing Act No. 247, Public Acts of 1955, declaring that the following elevations above sea level were established at the Ordinary High Water marks for the Great Lakes as follows:

Lake Superior — 601.5
Lakes Michigan and Huron — 579.8
Lake St. Clair — 574.7
Lake Erie — 571.6

More recently, the ordinary high mark for the Great Lakes based on the 1985 International Great Lakes Datum is as follows:

Lake Superior — 603.1
Lakes Michigan and Huron — 581.5
Lake St. Clair — 576.3
Lake Erie — 573.4

FAYETTE STATE PARK — HISTORIC TOWN SITE — BIG BAY DE NOC, DELTA COUNTY



Fayette, former iron smelting town of 500 population in the 1870s and 80s, has now become Fayette State Park. Fayette is located on the West shore of the Garden Peninsula. This site for iron smelting was chosen by Fayette Brown in 1867 because of the proximity of dolomite rock, and an abundance of maple trees on the peninsula for making charcoal. Iron ore was brought to Escanaba and transferred by boat to Fayette.

Charcoal for the smelting furnaces was prepared in kilns, an inverted cone of bricks and mortar, with a hole in the top for inserting cut up maple logs and heating to drive out the moisture. At one time there were as many as 31 charcoal kilns operating in the Fayette vicinity.



Charcoal Kiln

Another ingredient in making iron ore was dolomite. The rock on the east side of the bay was mined and transported to the blast furnaces, where it was broken into small pieces, and mixed with ore and placed in the blast furnaces along with charcoal. As the ore melted, it dropped to the sand floor of the furnace and flowed to an area to cool. The impurities in the smelting process rose to the top and collected with the dolomite. This slag was removed from the furnace and used for filling unlevel ground and other uses.



Blast Furnaces



In June of 1959 the first park manager was appointed to Fayette, and a campground was developed. Gradually, as funds became available, restoration and cleanup progressed. The area was to have the atmosphere of a ghost town with the buildings, furnaces, and kilns made to look as they had during the busy company days. Structures which were in total ruin were leveled and cleaned up. Work on the doctors' office, opera house, hotel, and company office was implemented. The goal of being able to walk through each building and view the artifacts of a century past is constantly being worked toward. Cleveland Cliffs Iron Company has aided in this restoration with gifts of land and money. ♦



GIANT INVADERS THREATEN GREAT LAKES FISHERY

(From: *The Lake Effect*, Quarterly of Lake Michigan Federation, Winter 2002)

A new aquatic invader is eating its way north through Illinois and threatening to enter the Great Lakes via the Chicago River, and the last chance to stop them is just 30 miles from Lake Michigan.

The newest, but certainly not last, biologic threat to the health of the Great Lakes is the Asian carp. These fish consume huge quantities of small plants and animals called **plankton**. Most Great Lakes fish rely on plankton as a food source at some point in their life cycle. In turn, small fish that feed on plankton provide food for large predators. A fish that decimates plankton populations could destroy the entire food web.

“An Asian carp invasion of Lake Michigan has the potential to devastate our precious whitefish and yellow perch fisheries,” says Joel Brammeier, Federation habitat coordinator. “It could turn the Great Lakes into giant carp ponds.”

“Asian carp” refers to a group of species including bighead, silver, grass, and black carps. They are native to lakes and rivers of eastern Asia. Much larger than most Great Lakes fish, bighead carp grow to 50 pounds, while silvers tip the scales at more than 100 pounds. Scientists estimate the fish can consume up to 40 percent of their body weight daily. Silver carp jump up to 10 feet clear of the water when disturbed, posing a unique hazard to boaters.

Fish farmers imported bighead and silver carp into the United States in the early 1970s. The aquaculture industry believed that the carp’s prodigious appetite for plankton would make them useful as pond cleaners. A combination of flooding and intentional release allowed Asian carp to access the Mississippi River ecosystem, where they dominate the food web in some areas.

Bighead and silver carp now are less than 60 miles from Lake Michigan in the Illinois River. Between these carp and the lake is an electrical barrier designed to stop invasive fish, such as the round goby, from entering the Mississippi from Lake Michigan. But with gobies already present in Illinois, agencies now are hoping the barrier will prove effective against carp entering the Great Lakes.

“This barrier, designed for another problem, can only be a temporary fix,” Brammeier points out. “In addition, the Chicago-area chokepoint between the Mississippi River basin and the Great Lakes basin affects the ecology of over half of the United States. We need a coordinated effort of states in both basins to identify a solution that prevents invasive species from crossing either basin into the other.”

Congress is considering the National Invasive Species Act of 2002 (NAISA), introduced in September, to provide about \$10 million in funding for stronger barriers between the two ecosystems and research on a permanent solution. However, Brammeier says that, while the act is a strong first step toward controls at the Chicago chokepoint, it does not provide immediate controls on other pathways.

“The Federation will continue advocating for strict, enforceable measures that prevent new invasions from sources including ballast water and deliberate importation,” explains Brammeier. “We should



(Photo: Jerry Rasmussen, U.S. Fish & Wildlife Service)

The bighead carp is one of several Asian carp threatening to invade Lake Michigan, potentially decimating the entire Great Lakes fishery with its giant plankton appetite.

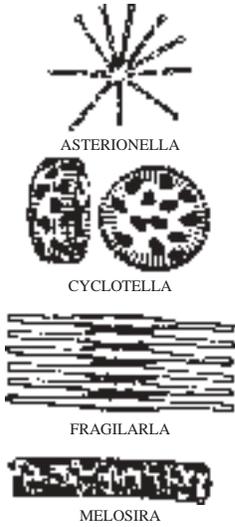
use this opportunity to eliminate an ecological problem that affects millions of citizens while reinforcing the fact that, just like extinction, invasion is forever.” ♦

For more information, visit www.lakemichigan.org/habitat/exoticsttest.asp or contact Joel Brammeier at 312-939-0838, ext. 4, or jbrammeier@lakemichigan.org.

PLANKTON— animal and plant life of a body of water consisting chiefly of minute plants such as diatoms, green and blue-green algae, and minute animals such as protozoans, rotifers, cladocerans, copepods, etc. (See next page for plankton examples.)

AQUATIC PLANTS

DIATOMS



DIATOMS
 Diatoms, by their photosynthetic activity, harness the sun's energy and lock it into organic compounds such as sugars and starch which provide an energy source for zooplankton that feed on them.

GREEN ALGAE



Green Algae
 A Scenedesmus
 B Closterium
 C Spirogyra
 D Staurastrum
 E Chlorella
 F Micrasterias
 G Xanthidium
 H Cosmarium
 I Pediastrum

BLUE-GREEN (Cyanobacteria)



Cyanobacteria
 A Oscillatoria
 B Microcystis
 C Anabaena
 D Coelosphaerium
 E Spirulina
 F Aphanizomenon

AQUATIC ANIMALS

PROTOZOANS



A Vorticella
 B Codonella
 C Diffugia
 D Zoothamnium

ROTIFERS



A Asplanchna
 B Polyarthra
 C Filinia
 D Keratella
 E Kellicottia
 F Hexarthra
 G Synchaeta
 H Brachionus

CLADOCERANS



A Leptodora
 B Daphnia
 C Bosmia
 D Ceriodaphnia
 E Polyphemus
 F Diaphanosoma
 G Holopedium

COPEPODS



A Limnocalanus
 B Eucyclops
 C Epischura
 D Canthocamptus
 E Diaptomus
 F Larva of Diaptomus
 G Senecella