NOVEMBER, 1979

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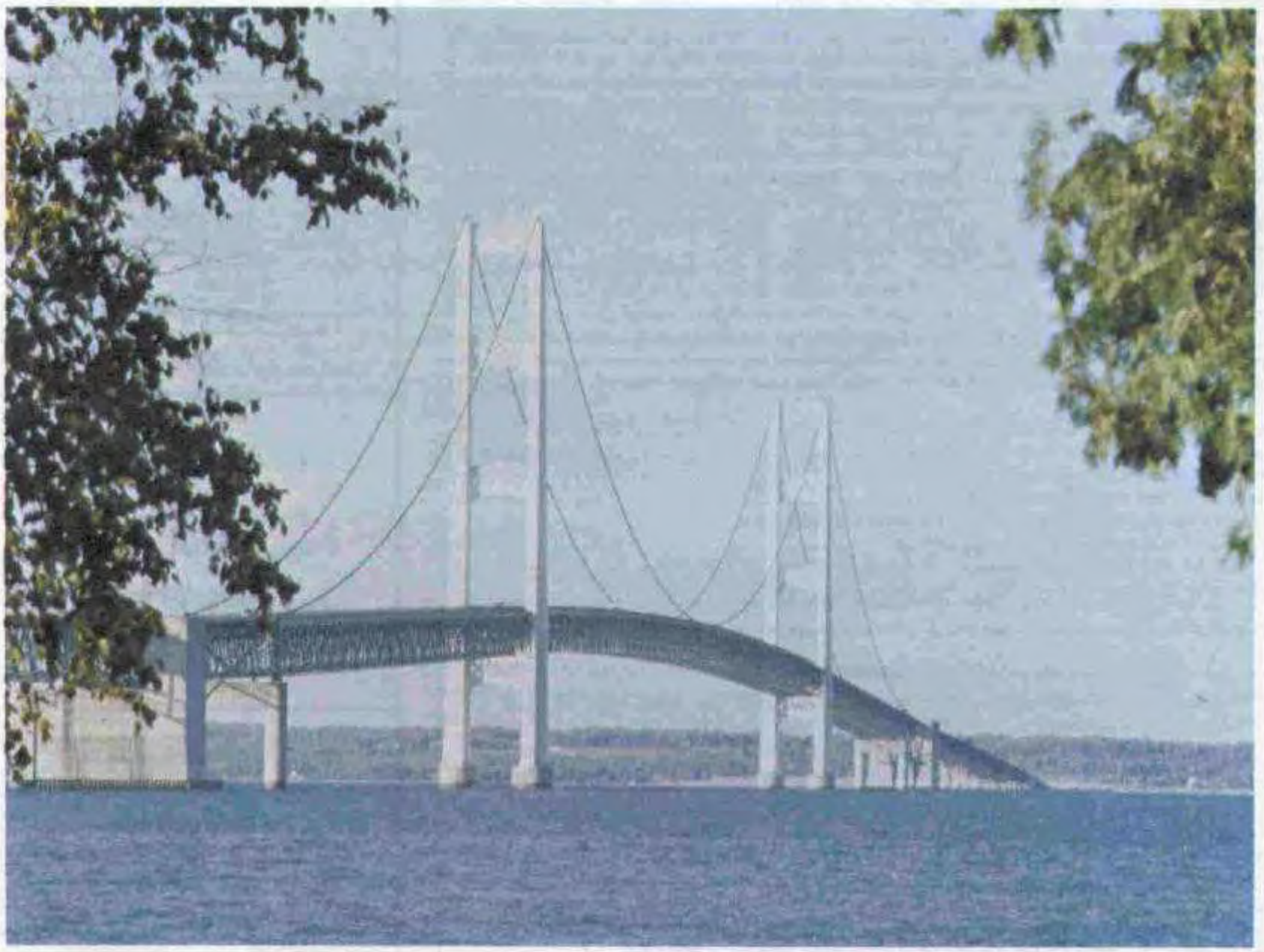
THE MICHIGAN RIPARIAN



READ BY MORE THAN 32,000 WATERFRONT PROPERTY OWNERS

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PICTURE ON COVER OF MACKINAC BRIDGE
(Taken by Don Winne, September 1979)

The Mackinac Bridge, first opened for traffic in November 1957, is now 22 years old. Work began on the Bridge in 1954 when foundations were laid 206 feet below the lake level and on which the main towers were raised to a height of 552 feet above the water surface. The total length of the suspension bridge, including anchorages, is 8,614 feet, the longest in the world. The center suspension span is 3,800 feet in length. Erected at a cost of $100,000,000, the bridge links the two peninsulas of Michigan, connecting Mackinaw City with St. Ignace.

COMING EVENTS

NOVEMBER 1 - Michigan Interdepartmental Environmental Review Committee, Lansing.

NOVEMBER 7-9 - Second Annual Better Waste Management Conference, Waldenwoods Conference Center, Hartland, MI.

NOVEMBER 8 - Water Resources Commission Delta Township Hall, 7710 W. Saginaw St., Lansing.

NOVEMBER 8-9 - Natural Resources Commission, Law Building, Lansing.

NOVEMBER 26 - Michigan Environmental Review Board Baker-Olin West Bldg., 3500 N. bgan St., Lansing.

DECEMBER 6 - Michigan Interdepartmental Environmental Review Commission, Lansing.

DECEMBER 6-7 - Natural Resources Commission, Law Building, Lansing.

DECEMBER 17 - Michigan Environmental Review Board, Lansing.

DECEMBER 20 - Water Resources Commission, Lansing.

Dear Riparian Subscriber:

The Michigan Riparian magazine can no longer be published with the same high production quality without an increase in the blanket subscription rate. Consequently, the blanket rate will be increased to $2.00 per member year effective with the February 1, 1980 issue. The individual subscription rate of $2.50 will remain the same.

There has been no increase in the blanket subscription rate since January 1971. During those eight years, paper costs have tripled and mailing costs have increased drastically.

The alternative of decreasing the number of pages from 24 to 16 and of using cheaper quality of paper was rejected by the Board of Directors. The Riparian will continue with 24 pages, good quality paper, some color and the same high quality writing.

The Michigan Lake and Stream Associations, Inc. is in the process of revising its By-Laws to separate the blanket subscription to the Riparian from the ML&SA dues structure, and to adopt a more simplified annual dues. (See By-Laws changes in article with ML&SA News).

The Board of Directors of the Riparian is hopeful that the increase in subscription rates will not result in a decrease of subscriptions. In order to encourage all associations to order a subscription for each of their members the following quantity rates have been adopted effective January 1, 1980

Associations that order 49 or less subscriptions	$2.50 (Individual Rate)
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Associations that order 100 to 149 subscriptions	2.30 per subscription
Associations that order 150 to 199 subscriptions	2.20 per subscription
Associations that order 200 or more or a blanket subscription – a subscription for every dues paying member	2.00 per subscription

(It may be that the blanket subscription does not equal 200 subscribers, but the fact that an association is giving all its members the Riparian, warrants the lowest rate.)

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I am a riparian property owner in the State of Michigan and support the purposes of ML&SA. Enclosed is my dues of $5.00 for membership in ML&SA. I understand that $2.50 will be retained by ML&SA, and that $2.50 will be deposited with The Michigan Riparian, and that I will receive the next four issues of the magazine at my address given below.

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RIPARIAN

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LETTER TO THE EDITOR:

"I get your magazine through our Rifle Lake Association. I enjoyed everything in the last one. Each copy of the Riparian seems to get better. It has in it things lake property owners should know and do something about."

Mrs. Marian M Dezeng,
Lupton, MI

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EDITORIAL

Donald Winne

MICHIGAN OUT IN FRONT

We hear and read alot about hazardous and toxic wastes, yet little attention is being paid to such news until it strikes home. All too frequently only a few persons are concerned about wastes that are being transported across political boundries and are being deposited in landfills untill there is a threat to life or someone gets sick from drinking their well water.

The Water Resources Commission in their proposed ground water quality rules describes HAZARDOUS MATERIALS as "those substances that, singly or in combination pose an unacceptable existing or potential risk to human health or to the environment because they may be flammable, explosive, reactive, corrosive, toxic, radioactive, infectious, carcinogenic, bioconcentrative, persistent or irritating when present in sufficient concentrations". The rules describe TOXIC MATERIAL as a "substance that is or may become harmful to plant life, animal life or to food chains when the substance is present in sufficient concentrations or combinations".

A lack of knowledge on the part of township, county and State government officials about the production, transportation and use of such substances makes it all but impossible for them to carry out their duty of protecting the publics health and safety.

The legislature of the State of Michigan has taken a needed step in controlling hazardous and toxic wastes by passing Act 641, Public Acts of 1978. This Act, which became effective when signed by Governor Milliken on January 11, 1979, provides, among other things, specific standards for the development of four types of landfills. Landfills will now be designed for the kind of wastes placed in them lessening the likelihood of groundwater contamination. The next major step in protecting our health is the establishment of rules to implement this law and Act 64 which was passed by the legislature and this year approved by the Governor, July 25, 1979.

Every citizen should be so concerned about this problem that he not only learns all he can about it, but also does something about it. How we handle our hazardous and toxic wastes will determine how long manking can survive on this planet. WHEN THE EARTH CAN NO LONGER FILTER OUT THE POISONS WE CREATE, AND WHEN OUR WATER IS NO LONGER FIT TO DRINK, WE WILL HAVE LOST THE STRUGGLE TO SURVIVE.

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The Great Lakes Must Be Looked At As A

MRS. LEE BOTTS

The algea blooms and depletion of oxygen in Lake Erie were being reported in scientific literature in the 1920s. But it was not until the 1960s that there was more and more talk about how to protect the ecological system of the Great Lakes.

Lee Botts, chairman of the Great Lakes Basin Commission and keynote speaker at ML&SA's 18th Annual Meeting and Conference, emphasized that the protection of the long term future of the Great Lakes depends upon our understanding of the Great Lakes as a hydrological and ecological system.

The Great Lakes Basin Commission is working diligently to help bring this understanding about. The Commission is a group of eight Great Lakes states and 11 federal agencies who have joined together to plan for the future of one-fifth of the world's fresh water. The Commission, which was created by the Great Lakes states in 1967, has adopted a plan for bringing together people and governments in the Great Lakes watershed to consider ways of dealing with eight problem areas of major concern. Handling these problem areas are the eight goals of the Commission. Mrs. Botts discussed some of these objectives and pointed out some of the difficulties being encountered in trying to accomplish them. The major portion of her address follows.

"The people all along the boundary between Canada and the United States in 1909 had no concept of ecological systems so that the original treaty between the two countries covered only four of the five Great Lakes. It did not include lake Michigan, the only one of the five Great Lakes states that is entirely within the United States boundary.

EARLY INDICATORS OF DEGRADATION

In 1972, when the Water Quality Agreement was adopted, it specifically addressed water quality questions, which was not true of the treaty in 1909, although somethings were already begining to happen that were not recognized as signals of what was to come. The sturgeon had already disappeared from Lake Erie. Some people were thinking that maybe the sewage from Cleveland and Detroit had something to do with that, but no one was very much concerned. The algae blooms and depletion of oxygen in Lake Erie were being reported in scientific literature in the 1920s. But it was not until the 1960s that there was more and more talk about how to protect the ecological system of the Great Lakes. There is more and more recognition that unless we understand how that system works, and seek to protect it as a system, we will not succeed in our effort to protect the long term future of the Great Lakes.

POLLUTION FROM THE AIR

The idea of the Great Lakes being a system is being debated within the International Joint Commission (IJC) by scientists on both sides of the border, yet there are other things which are reinforcing this idea. One of those things is what we have learned in the 1970s about where the pollution to the Great Lakes is coming from. When the 1972 Clean Water Act was passed by Congress, emphasis was upon stopping what comes out of the end of the pipe. Whether it was from a sewage treatment plant or from an industrial pipe. What we didn't know then, but we do now, is that very large part of the pollution to the Great Lakes is getting there through the air. It is getting into the other lakes and rivers through the air as well. We now think that at least 20% of the total pollution to the Great Lakes is getting there through the air, and in some places it may be more. We now know that this is why PCB levels are very high near Isle Royale in Lake Superior very far away from any possible industrial source of PCBs.

ACID RAIN A THREAT TO WATER QUALITY

The current concern is with acid-rain. You have probably been reading alot about acid-rain. Acid-rain results primarily from sulphur-dioxide which results from burning organic fuels, and this is of tremendous concern in the Great Lakes region as well as Adirondacks of the northeast, and across the Atlantic in Sweden, Norway and Denmark where they have been aware of the problem for some time.

One thing about the Acid-rain problem that needs to be understood is that so far no one conceives that the Great Lakes will become acid. The reason is that the size of the Great Lakes, and the fact that they have a limestone bed, buffers the effect of the acid. However, small lakes and rivers do not usually have that protection, and the small lakes and tributaries of the Great Lakes region are very vulnerable to acid-rain. One of the consequences of acid-rain which is of great concern, and which is bound to rise, is the effect it will have on vegetation. The long term effect on

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Hydrological System.

forests is of great concern in our region.

ENVIRONMENTAL IMPACT OF FOREST REMOVAL

We now understand that we have already had some large consequences of change in the vegetation pattern for the Great Lakes. The removal of the hardwood forests along the tributaries of the Great Lakes is believed by many people to have changed the natural system sufficiently to allow the invasion into the natural system of the Great Lakes by the lamprey eel. It is believed that one of the factors, not the only one but a factor in the way the lamprey eel was able to assume such a large role in the Great Lakes ecosystem was the small change in the temperature of the rivers that resulted from removal of the forests and cover by lumbering. These are the kinds of factors which the scientists are concerned about so that we can better understand the total system.

HAZARDOUS WASTES A REAL PROBLEM

Another problem within the Great Lakes Basin that you are going to keep on reading alot about is the discovery of cases of disposal of hazardous wastes which have resulted in contamination of groundwater.

Last week, Jack Bails, who is head of the enforcement division of DNR was quoted in the Detroit Free Press as saying that "It may come to the point that we have to write off the groundwater supplies of much of southern Michigan". That is a pretty shocking statement, and I hope that it is not as general as he says. But the fact of the matter is we do know of a number of locations in Michigan where contamination of deep aquifers has already been discovered and the fear is that we may find more of that. I think this has a lot of implication for the Great Lakes because the Great Lakes will be the water supply that we turn to even more than we do now for the uses that we have for water -- drinking water, industrial uses and other purposes.

The Basin Commission is only one of the agencies that has responsiblity for the Great Lakes. The states have a very large role and in Michigan it is the Michigan DNR which has the primary role.

HOW COSTLY IS POLLUTION CONTROL ?

What has the control of pollution already cost and what is it going to cost in the future? A great deal of concern about whether pollution control has cost jobs and whether it is going to cost more jobs is being expressed.

More and more government is trying to determine what would be the most cost effective ways to control pollution. Recently the Basin Commission adopted a policy which was addressed to phosphorus control which is still a big problem for the Great Lakes. We have made progress in reducing the costs of control.

I talked about the fact that the phosphate detergent bans have cut sewage treatment costs in most locations. I also talked about the fact that the 1972 Water Quality Agreement set 1 mg/L in discharge to the lakes as a water quality objective. The original agreement provided that after 5 years it would be reviewed, and that Canada and the United States would consider whether new objectives needed to be set.

The 1978 Agreement did two things: It put toxic substances out front as the most serious problem for the Great Lakes. It defined toxic substances in a very broad way, and set forth some objectives for both Canada and the United States to achieve. For phosphates, it raised the question of whether the phosphate standard would need to be lowered. It suggested that it might be necessary to lower the phosphate level allowed to be discharged for lakes Erie and Ontario to 0.5 mg/L. During the past year and a half there has been a lot of discussion of that question. A recommendation will soon be made by IJC.

SYSTEMS ANALYSIS APPROACH TO UNDERSTANDING THE GREAT LAKES

One of the major studies that we are carrying out at GLBC we call the Great Lakes Environmental Pollution Study. What we are really trying to do is to take the results of the studies that have been made by many different agencies and by research institutions at universities to take the mathematical modeling that has been done by the Corps of Engineers for Lake Erie, by the EPA large lakes research laboratories at Grosse Isle, to take information that has been gathered by the 208 agencies throughout the Great Lakes. What we are trying to do is to put all of this information together and using systems analysis techniques, and information about the land uses that we have and what information we can get about possible change in land use for the future and try to project what will be the result of the policies that are being adopted so that we can have a way to compare results of different policies or management programs. On the basis of the analysis, we have concluded at GLBC that we should not go to the 0.5 mg/L phosphate level at the present time. At the last official meeting of the Basin Commission in August a resolution was adopted in support of maintaining the 1 mg/L level, yet maintain close monitoring.

BEST AGRICULTURAL MANAGEMENT PRACTICES IMPORTANT

More attention is being given to reducing phosphorous discharges into the lake from land run-off. As a result of a massive five year study made by Canada and the United States cooperatively under the 1972 Water Quality Agreement, we now know a great deal more about actual land run-off as a source of pollution to the

(Continued On Next Page)

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Great Lakes...
[Continued From Page 5]

Great Lakes, And it turns out that it is only in certain areas that agricultural pollution is a serious problem for the Great Lakes. Put it a different way, there are only a few places, such as the Maumee River basin flowing into Lake Erie, where you could justify extreme structural measures to prevent land run-off into either the Great Lakes or tributaries of the Great Lakes because of pollution to them. If what agricultural people call Best Management Practices are used for agricultural purposes, they will also be protecting the lakes, streams and Great Lakes. I am talking about as little tillage as possible, of avoiding cultivating fields on the side of hills and along stream banks and staying back a sufficient distance from stream banks. The Department of Agriculture is working with the agricultural people to identify those areas that are hydrologically active areas where more controls would be necessary. It also turns out that the extent of pollution in urban areas from land run-off to the Great Lakes themselves is not as great as had been thought a few years ago. If the cities would do such things as sweep their streets more often it would reduce pollution in the lakes. Control of run-off from construction sites would reduce pollution of the lakes and result in other benefits. Those problems turned out to be not as massive or difficult as some people though a few years ago.

TOXIC WASTES THE NUMBER ONE PROBLEM

I would find it very hard to overstate the threat or the problem of toxic contamination of the Great Lakes. All the reasons you have been reading about the concerns of toxic contamination generally, the increase in the use of chemical, their widespread use, difficulty in identifying in many cases, where they have been used and how they have been disposed of make it the number one problem of the State. One figure which I quote sometimes in talking about this problem is that just Michigan, Ohio, Illinois, Indiana, Wisconsin and Minnesota produce 35% of the industrial hazardous wastes produced in the entire country. That does not include New York with its' love canal and does not include Pennsylvania with the industrial town of Erie on the shores of Lake Erie. The question is not only that they are produced, but what happens to them? Michigan and Ohio have the worst problem, so currently the Great Lakes Basin Commission is working with these states in trying to identify ways in which those wastes can be kept track of and we are proposing a regional system of recovering as many wastes as possible.

There is another major environmental law passed in the 70s concerned with this problem and it is the Resource Conservation and Recovery Act. Like the clean air act and the clean water act it provides a system of Federal funding and assistance to the States for state programs. There are some aspects of these problems which go across state lines. The case of hazardous wastes, Michigan sends about 10% of its hazardous wastes to Ohio for disposal at the present time. What will happen when Ohio says NO? Minnesota doesn't have any waste facility at the present time. It sends everything to Wisconsin and Illinois. Illinois has sites within its borders as does Indiana and Ohio. Those three states have been receiving wastes from New Jersey and Texas and elsewhere. In Illinois there has been a great deal of controversy and dispute between State agencies and the Attorney General. The Attorney General has sued the State EPA and has forced a shutdown of two waste disposal sites that the EPA of that state believes was adequately regulated and provided for safe disposal methods, but the people in those communities said no, not here. A lot of communities and people are saying no, not here. Especially those communities that have some experience in the past with unsafe ways of handling hazardous wastes. This is one of those problems that is not going to go away. Those wastes have to be managed. They just won't go away. They just won't just disappear. We are urging very strongly that the Great Lakes states get together and establish systems for managing those wastes. Michigan is providing a lot of leadership. Michigan has a lot of motivation to take leadership in this problem. The law that was passed by the legislature (Act 64, 1979, this act will be explained in more detail in the next issue) almost unanimously not too many weeks ago setting up a state system for handling hazardous wastes is being used around the country as a model law, and I believe that aspects of that law will have a national influence as states deal with this problem.

MANIFEST SYSTEM NEEDED

Some of the specific things that we are proposing for the states where state or regional action is needed would be a manifest system. I am talking about where the wastes come from, where they go, and where they end up. A manifest, of course, is a kind of shipping paper that goes along with anything that is shipped. In the case of toxic substances that manifest needs to include information about how to deal with it if there is an accidental spill along the way. One of the major problems is the fact that local communities, local firemen and police departments are being called upon to deal with spills of toxic substances. More and more frequently they do not have enough information about the substance. Is it safe to put water on it? Do we have to evacuate people? What happens if it gets into a stream or waterway, and that is a very frequent problem. So discussions are under way, and GLBC is providing a form for these discussions. We have talked alot about GLBC providing a forum for states to get together, and we see that as a very useful function, but we cannot force them to do anything since we are not a regulatory agency. We are the only regional agency where all the states and the federal agencies get together to talk about Great Lakes problems. Even though we do not have regulatory powers, the thing that GLBC has going for them, not withstanding Washington's attitude, but all of us who live in the Great Lakes region and who know the Great Lakes, who depend on the Great

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THE GREAT LAKES BASIN [300,000 square mile watershed].

Lakes, and that includes everyone in government in the Great Lakes, are committed to protecting the Great Lakes.

I believe that in the long run we will be able to preserve and protect the Great Lakes though it would be unrealistic to claim that we were ever going to be able to restore them to the condition in which they existed before man began living and concentrating himself in the Great Lakes region. I believe that the Great Lakes will continue to be important as well as maintain their beauty."

Water Quality Standards Advisory Task Force Created

The Michigan Water Resources Commission recently appointed a twelve member task force to review Michigan's existing and proposed Water Quality Standards.

The Commission has devoted considerable time during the past three years to establish water quality standards and requirements upon which the water of the State may be managed. The holding of public hearings across the State has given the public ample time and opportunity to be heard.

The purpose of the water quality standards is "to establish water quality requirements applicable to the Great Lakes, their connecting waters, and all other surface waters of the state, which shall protect the public health and welfare ... and which shall protect the quality of waters for recreational purposes, public and industrial water supplies, agricultural uses, navigation, and use by fish, other aquatic life, and wildlife."

The purpose of the ground water quality rules is "to protect the public health and welfare and maintain the quality of ground waters in all usable aquifers for individual, public, industrial, and agricultural water supplies."

By the time you read this, a Joint Committee of the House and Senate will have reviewed (October 16) and hopefully approved the promulgated rules.

For further information, you should contact John Robertson, Michigan Department of Natural Resources, PO Box 30028, Lansing, Michigan 48909.

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DR. BOYD ELLIS

THE PRACTICAL CHEMISTRY OF ON SITE WASTE DISPOSAL

Dispoasl of waste has been an age old problem. But it has received increasing attention in recent years. Deterioration of water quality in our streams and lakes accompanied by increased algae and weed growth has been attributed to nutrient inputs, a portion of which have come from our septic systems. Regulations about on-site waste disposal have become more strict -- and rightfully so -- in an effort to prevent movement of nutrients into our waterways. But regulations do not solve problems. However, a better understanding of how our systems work may help us to better design and maintain on-site waste disposal systems. Although "Chemistry" is not a pleasing word to some of us -- it may sound difficult -- our on-site disposal is a system that uses many chemical and biological processes to eliminate our waste material. The purpose of this article is to discuss the reactions that occur in these systems from a practical viewpoint.

WHAT ARE THE RAW MATERIALS FOR YOUR SEPTIC SYSTEM?

Waste material carried by water from bathrooms (many times called "black water") is one of the raw materials. Typically more than 50% of the nitrogen entering the system comes from this source. In Michigan, where low phosphate detergents are required, more than 55% of the phosphorus comes in the black water. Water carrying waste from the kitchen and the laundry also furnishes raw materials for the waste treatment system. If a garbage disposal unit is used in the kitchen the load of organic materials becomes much greater -- in fact it may be so great that it requires a larger size septic tank. The laundry contributes mostly water containing a biodegradable detergent. Of the treatment system and become a raw material for processing.

YOUR SEPTIC TANK A CHEMICAL FACTORY

Septic tanks may come in a variety of designs, shapes and sizes. It is not the purpose of this discussion to describe each type or to recommend a particular type. This is adequately done by local townships or counties. But have you examined your septic tank as a chemical factory?

The raw materials are transferred to the septic tank by a water tight collection system that is usually gravity operated. A typical cutaway diagram of a septic tank is shown in Figure 1.

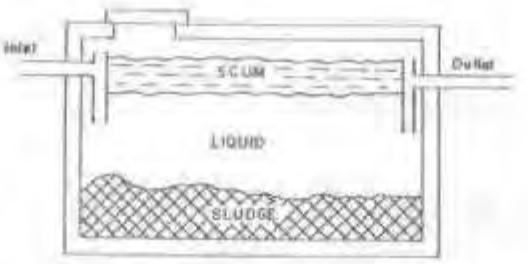

Figure 1. Cutaway diagram of a typical septic tank.

The first function of the tank is to separate the solid from the liquid. This is accomplished by baffles or pipe fittings that reduce the velocity of the incoming liquid which allows the solid to settle to the bottom of the tank. Some of the lighter components (grease and foam) will rise to the surface and form a "scum" that is a mat of partially submerged, floating solids. The first important chemical PROCESS TO OCCUR IN THE SEPTIC TANK IS THE REDUCTION OF ORGANIC MATERIAL TO THEIR CHEMICAL COMPONENTS. This is accomplished by anaerobic bacteria (that is bacteria that do not require oxygen) which use the organic material for food. Although they are quite effective in consuming organic matter, the anaerobic process does produce a very distinctive -- not pleasant -- gas which must be vented to the air at a high point usually the roof of the house. The process of reducing the organic matter is often referred to as reducing the BOD (biological oxygen demand) of the waste. Other chemical reactions accompany this reduction of organic matter in the waste, for example, carbon in the organic material is converted to carbon dioxide (a gas) which is evolved to the atmosphere. But the nutrients are converted from an organic form to soluable inorganic nutrients that are left in the liquid within the septic tank. For example, nitrogen in the raw material is largely organic (proteins, urea, etc.) but after digestion in the septic tank it is converted to inorganic ammonium ions (NH_4). The ammonium ions are water soluable and one form of nitrogen commonly used to fertilize lawns because they enhance the growth of grass.

Material that is resistant to further decomposition by anaerobic bacteria is called "sludge" and will accumulate at the bottom of the septic tank. Here any further decomposition will be very, very slow and when it has accumulated to a sufficient depth it will need to be removed by a commercial hauler.

The type of bacteria needed to

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decompose waste is always found in sewage. They multiply rapidly when the septic tank is functioning properly. Although there are "rejuvenators", yeast or biochemical and chemical compounds on the market, it is generally agreed that they are of little benefit and some of them contain compounds that may destroy soil structure.

The effluent (waste material that has undergone biological digestion in the septic tank) is finally disposed of by passing it through a soil.

DISTRIBUTION OF EFFLUENT TO A TILE DRAIN FIELD

Although there is little chemistry involved in distribution of the effluent to the tile drain field in the soil, how this is accomplished may influence the chemical reactions in the soil and hence, the effectiveness of the system. Two types are illustrated below. The first system may function with a distribution box and distributes effluent into tile drainfield. The tile field may be constructed with clay tile where the ends are butted as close as possible. No attempt is made to produce even distribution of effluent over the entire drain field. Thus, in a very sandy soil most of the effluent

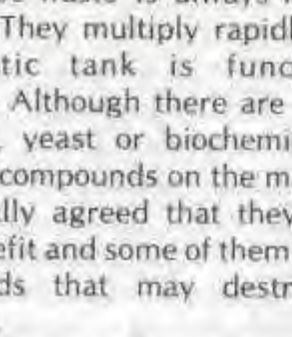

Figure 2. Tile drainfield utilitizing a distribution box.

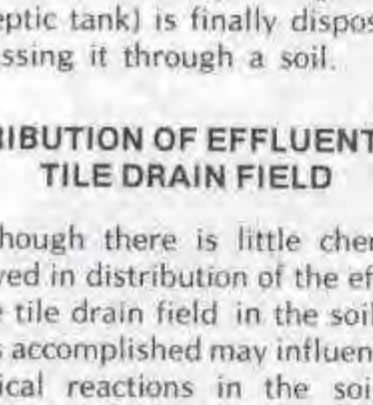

Figure 3. Tile drainfield utilizing a dosing system.

may pass through the soil close to the distribution box until a mat (collection of organic material which forms below the tile line) forms and the infiltration rate of the water slows down considerably. After this, the effluent moves further along the tile lines before it infiltrates into the soil. A second system utilizes a dosing chamber (a chamber designed to deliver the effluent in doses with a rest period in between times so that the effluent is evenly distributed throughout the whole tile drain field each time a quantity of effluent is applied. Here the drain system is a "closed" system with openings on the side and top designed to distribute each dose of effluent evenly to the entire drain field.

YOUR SOIL AS A CHEMICAL PLANT

To use your soil as a chemical processing plant for cleaning effluent you must be able to pass the effluent rapidly through the soil. Thus, the first soil property to be considered in installing a septic system is the soil-percolation test ("perk" test) which is performed to determine how many square feet of absorption area will be necessary to adequately handle the effluent. Local, county and state ordinances will govern the precise test and it's applicability. But a few general observations should be made here. The soil-percolation test is best made when the percolation rate is at a minimum. Generally this will be in early Spring when the ground is saturated. I realize that the test is most likely to fail if taken at this time. But it is better for the test to fail than for the system to fail once it has been installed (have you ever lived with or seen a system that is limited to 3 "flushes" per day during certain times of the year?). In general, very sandy soils will have a high percolation rate; clay loams and finer textured soils will not be satisfactory; and loam soils may be questionable. Information on percolation test is contained in the join publication "Questions and Answers about Home Sewage Disposal" -- Extension Bulletin 577 Farm Science Series, MSU and MDPH Engineering Bulletin No. 2, Michigan Department of Public Health. General information relating soil series to percolation rates is given in Research Report 195 "Soil limitation for disposal of municipal wastewaters". Due to the variable nature of soils below the surface layers, soil series can be only a guide and an onsite test must be made.

Your soil will function as a chemical filter -- that is it will separate large particles or organic matter or microorganisms from the water as the effluent passes through the soil. The very sandy soils, although they will pass effluent very rapidly, will allow small (microscopic) organic matter to travel for some distance through the soil with the water. The finer textured soils -- those with more clay material -- are very effective filters. Pathogenic organisms (those that may produce disease) must be separated from the effluent during this step. Many of the pathogenic organisms will not survive for a long priod outside of their hosts (humans) and consequently, die off within a short distance of the tile discharge field. Certain microorganism (E. Coli for example) will survive in the soil environment but are effectively filtered. The distance requirements for drainage fields in the past have largely been determined from a health standpoint (i.e. the distance through soil that wastewater must pass to remove microorganisms). Present State requirements are for isolation of the disposal field by 50 feet from the nearest well or surface water (lake, stream or open county drain). This distance has been found to be more than adequate to remove micro-organisms and organic materials from the wastewaters.

NITROGEN

Nitrogen forms many chemical compounds. Generally the form of nitrogen in effluent will be ammonium ions (NH_4) or organic forms if decomposition has not been complete in the septic tank. If the soil that the effluent is discharged into is well areated (contains oxygen and is not water-logged), the nitrogen will be changed rapidly into an oxide form. Chemists represent this in short-hand as follows:

$$NH_4 + 202\ NO_3 + 2H++ H_20$$

This reaction is accomplished rapidly

[Continued On Next Page]

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The Practical Chemistry of On Site Waste Disposal ...

[Continued From Page 9]

only with the aid of microgranisms and has intermediate steps but I will spare you these details. The important thing for us is that the nitrogen is changed from a positively charged to a negatively charged species. Soils will hold positively charged ions and prevent them from moving with the water. But negatively charged ions are free to move unless they form insoluable compounds in the soil. And nitrates (NO_3)do not form insoluable compounds in soils. Thus, once this chemical reaction has occured the nitrate may be taken up by growing plants if they are contacted by roots, or they will move with the water to the water table.

Once nitrate enters the ground water aquifer, it moves freely along with the flow of the water. Its concentration may be reduced by two mechanisms once it is in the ground water. First, dilution with other water may occur. And secondly, it may be converted to a gaseous product by the process of denitrification. For the latter to occur, carbon and microorganisms must be present. If booth are present nitrogen gas may be evolved and the nitrogen thus eliminated. If not, little treatment is offered and the nitrate will ultimately find its way into the ground water aquifer or move into surface water of lakes or streams. Here it serves as a nutrient for algae and weed growth.

PHOSPHORUS

Phosphorus in the effluent coming from the septic tank is expected to be orthophosphate (H_2PO_2 or HOP_4), polyphosphate ($H_4P_2O_7$, etc.) or organic phosphate. Once it has been in the soil for a short period of time it will all revert to orthophosphate. Although phosphorus in this state is a negatively charged ion it is held tightly in most soils because it reacts with iron or aluminum in the soils. This reaction can be precipitation of iron or aluminum phosphate compounds or the orthophosphate may attach itself to the surface of already precipitated iron and aluminum oxides and hydroxides.

But an important point is that the amount of "reactive" iron or aluminum in soils is limited. The phosphorus must come in contact with this reactive iron or aluminum to be retained in the soil. The number of years that a soil will effectively remove phosphorus from effluent will depend on the volume of soil contacted. Thus, in a very sandy soil utilizing open tile in the drainfield most of the effluent may pass through a very small volume of soil. Soon this volume will become saturated with phosphorus and the phosphorus will move into the groundwater and ultimately into the lake or stream. On the other hand, if the tile drainfield utilizes a dosing system and gives better distribution of the effluent so that a much larger volume of soil is contacted the number of years that the system effectively removes phosphorus is increased greatly.

Soils differ in their ability to hold phosphorus. Organic soils (few of which could be considered for on-site waste disposal) and very sandy soils have a very low capacity of hold phosphorus. This is particularly true of leached gray to white sands. As sands gain iron and aluminum (indicated by yellow and red color of the soil from the iron compounds) they increase in their ability to hold phosphorus. Finer textured soils will normally hold much more phosphorus than sands.

EFFECTIVE MAINTENANCE OF YOUR ON-SITE DISPOSAL SYSTEM

The first step in good maintenance of a septic system is to remove the sludge from the septic tank when needed. A septic tank should be cleaned when the bottom side of the scum layer is within 3 inches of the lower end of the submerged inlet or when the sludge accumulation is such that its depth is equal to one third or more of the liquid depth. Cleaning at this time is important not only for proper operation of the septic tank but also to prevent discharge of excessive organic material into the tile drain field.

It is important that the tile drain lines be free from obstructions so that even distribution of effluent occurs. One system (the Sheldon system) has been designed to allow the tile drains to be cleaned. Basically it utilizes fiber pipe with slits cut on the top and traps at the end of each line that allow for access and cleaning when the septic tanks is being cleaned.

Finally, for special problems, consult your local health department, county agricultural agent or the state health department. Their advice sould be sought before installing a new system or modifying an old one.

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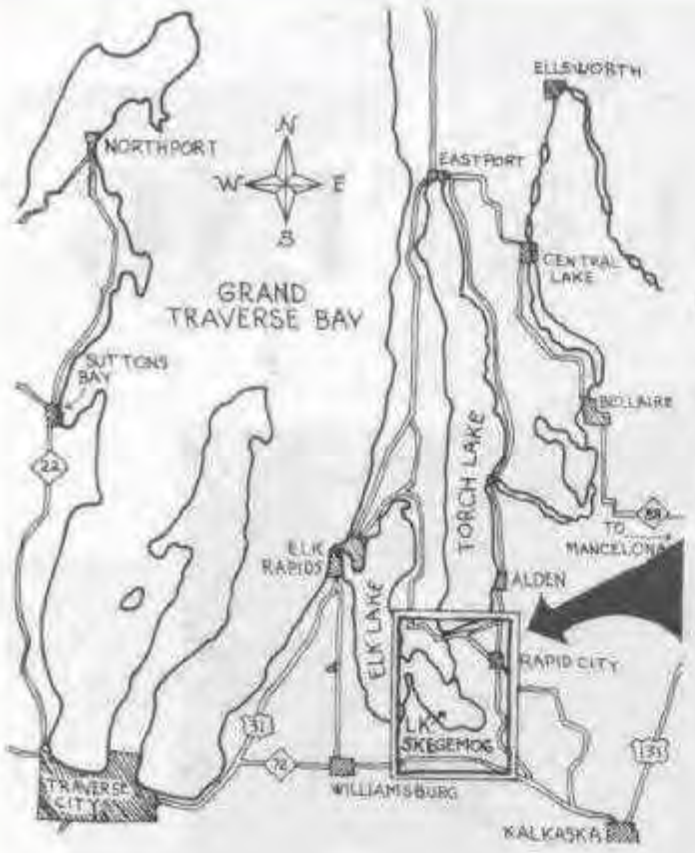

THE SKEGEMOG LAKE WILDERNESS AREA:

an important fresh water marsh

WHAT IS IT?

The Skegemog Lake Wildlife Area encompasses most of the eastern third of the shore and backlands of Lake Skegemog and the mouth and some lands along the Torch River.

It is an area of approximately 2,700 acres and contains marshes, quaking bogs, cedar, orchids, sphagnum moss and many other varieties of trees, shrubs and plants.

It is an area of creeks, ponds, and shallow water with submerged stumps protecting its shores from destructive boat wakes and providing a haven for fish and waterfowl.

It is a natural area in which osprey loon, fish, otter, rattlesnakes, migrating waterfowl and deer are more at home than man.

WHO ARE THE OFFICIAL SPONSORS OF THE PROJECT?

Elk-Skegemog Lakes Association, the Kalkaska Soil Conservation District and Clearwater Township in Kalkaska County are the three official sponsors.

WHAT IS THE NATURE CONSERVANCY?

The Nature Conservancy is a national non-profit conservation organization whose resources are devoted soley to the acquisition and stewardship of ecologically significant land. During its 28 year history the Conservancy has helped preserve more than 1.4 million acres of islands, marsh, forest, lakes and prairie in over 2000 land conservation projects throughout the country.

THE NATURE CONSERVANCY

c/o Skegemog Lake Wildlife Area Project
P.O. Box 23
Williamsburg, Michigan 49690

DATE _____

I want to help preserve the Skegemog Lake Wildlife Area. Enclosed is my check, payable to THE NATURE CONSERVANCY, for:

$10 _____ $25 _____ $50 _____ $75 _____ $100 _____ Other $ _____

I further pledge the following amounts for 1980 $ _____ and for 1981 $ _____

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

(Contributions are IRS tax deductible, see 501 (C) (3) of the IRS code)

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ML&SA ANNUAL MEETING

18TH ANNUAL

BOARD OF DIRECTORS

Ken Sikkema WMEAC [on left] relays information on wetlands.

Robert Pearce [left], new board member and Tom Doyle [right, DNR Fisheries.

Newly elected President of ML&SA, Cecile Harbour.

Outgoing President, Paul Clark [right], talks with George Bloss, President Lake Co. Riverside POA.

Lee Botts [left] chairman of Great Lakes Basin Commission talks with conference attendee after address on freshwater.

Charles and Irma Slutzman. Mr. Slutzman is President ofWarmplus Lake Assoc., Jackson and Lenawee Counties.

Bob Charles [left], member Bd. of Dir., of Mich. Rip. talks with Paul Todd [right] WMU graduate student requested for BOD to develop trialise on septic systems.

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The PRESENTERS

SATURDAY SEMINARS

Phil Schaefer, Firm of Bauckham, Reed, Lange, Schaefer and Travis, Kalamazoo.

Dr. Eckhart Dirsch, Land Use/Water Quality.

Inland Lake Fisheries, Tom Doyle, Dept. of Fisheries, DNR.

Keyhole Access, Dr. Otto Krauss, Higgins Lake Riparian.

You & Water Quality, Dr. Frank Diltri.

Dr. Boyd Ellis, Land/Use Water Quality

Dr. Ray White, Wetland Protections

SUNDAY SEMINARS

Dr. Leighton, MSU, Irrigation - Effect on Water Supply

Keith Wilson, DNR, Public Access Accountability.

Fred Kellow, DNR, Solid Waste Disposal.

Left to Right: Bob Cass, U.S. Congressmen from Michigan, Joe Hollander, Attorney; Richard Sode, Ingham County Drain Commissioner; Robert Minning, Engineer.

Left to right: Robert Lindahl, Hutchins Lake, Allegan County; William Atkins, Michigan State Police.

Jim Oakwood, [right], DNR, Stream Problems.

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EXHIBITORS

Edmunds Engineering also had a display but the picture was not available at time of printing.

Albert Crain [left] checks out information at the Aqua Marine booth from Dag Womington [right].

All the latest chemical developments could be looked at in the Applied Biochemist, Inc. booth. Robert Rowe, sales representative, Terry McNobie and Dave Paschke.

Arthur J. Laing and son , Tom, at the Clean Flo booth.

Altosar Aquatic Harvestor's booth displayed an interesting picture board at the Annual Meeting. Henning Clasen, Roger Cantelon and Eric Glaiser, Co-partner, [not pictured].

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ML&SA NEWS

By Cecile Harbour

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ROBERT J. SWIFT
71 Peninsula Dr., Lexington, MI 48060

ROBERT MCALPINE
(See Officers)

NEW ML&SA MEMBERS

Region I
SAWYER LAKE ASSOCIATION, Dickinson County
Lawrence Carey, President

Region IV
COREY LAKE PROPERTY OWNERS ASSOCIATION, St. Joseph County
Donald Winne, President

Region V
BARNES LAKE CLUB
John Rickford, President

BEAVER LAKE ASSOCIATION. Region III. The new pike rearing pond received 30,000 new-born pike from the DNR in May. In mid-June when they were released to the lake they were about 4 inches long. Maps are available showing the location of the 141 brush shelters.

BIRCH LAKE YACHT CLUB. Region IV. The Birch Barker, published weekly during the summer season, contained some lovely original poems written by the editor, Gertie Temple.

BLUE LAKE TOWNSHIP CIVIC ASSOCIATION. Region II. The association is enrolled in the DNR Self-Help Program. Membership meetings are well-planned with programs including speakers from the DNR and governmental units to keep the members informed of local matters.

CLEAR LAKE IMPROVEMENT ASSOCIATION. Region IV. The DNR is planning a fish count survey this Fall. A revised map with lot locations was distributed with the July Newsletter.

CROOKED LAKE IMPROVEMENT ASSOCIATION. Region III. A new ML&SA member, has formed a Lake Board (PA #345 of 1966) with the immediate task of determining the most effective method of weed control. It is expected that the plan will be put into action in the Spring of 1980.

ELK-SKEGEMOG LAKES ASSOCIATION. Region II. The North West Michigan Planning Council selected the lakes for a water quality survey last summer. The primary purpose of the survey was to study all sources of phosphate input, particularly the "hot spots" of highest input. On the basis of the expected population growth, it is estimated that phosphate inflow will double by the year 2000. Adequate land use management and planning could help prevent this.

EMERALD LAKES VILLAGE HOME OWNERS ASSOCIATION. Region V. A busy and interesting social program is provided the members which included a treasure hunt, family canoe trip, garage sale, fishing contest, millionaires party, regatta, family fun day, swimming lessons, bowling leagues, antique car & sports car parade, dog obedience training and others. This list may help other associations to improve their programs. The very successful Security Patrol (July 1978 Riparian) continues to operate.

INDIANWOOD LAKE IMPROVEMENT ASSOCIATION. Region V. Petitions have been circulated to form a Lake Board (PA #345 of 1966) with the express purpose of financing lake maintenance and weed control projects. Over $1225.00 was raised to purchase fish to restock the lake this summer with black bass fingerlings and sand shiners.

KEARSLEY LAKE ASSOCIATION. Region V. The association is enrolled in the DNR Self-Help Program, is studying lake level and sent 3 representatives to the ML&SA Annual Meeting. Tremendous growth has occured in only one year.

LAKE FENTON PO ASSOCIATION. Region V. The proposed rezoning of 25 acres of land which abut a channel to the lake, to multiple family, is of concern to the association. The proposed development could give 181 additional homes access to the lake.

CASS LAKE RESIDENTIAL PO ASSOCIATION. Region V. The association's CB Patrol on the lake, cooperating with the Sherriff's Marine Patrol has succeeded in reducing the noise from boats. The patrol only reports problems, does not have enforcement powers. Continued vigilance is needed to prevent overuse of the lake through "keyhole" access.

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MLSA NEWS

[Continued From Page 15]

LAKE GEORGE PO ASSOCIATION. Region III. Not only riparian property owners but other residents in the area have supported the fund raising efforts to harvest weeds in the lake. Selective harvesting is done to preserve fish spawning and feeding areas.

LAKE CHARLEVOIX PO ASSOCIATION. Region II. The new President, Dick Sharer, has suggested the following goals for attention–increasing membership; improv ing communications; setting clear priorities for the year and the feasibility of a paid position for the lakes protection.

LAKE LAPEER ASSOCIATION. Region V. The association's zoning sub-committee is meeting with the Township Planning Commission seeking amendments to the zoning ordinance. Professional instruction has trained skiers at all levels of ability.

LAKE OGEMAW SUMMER RESORT ASSOCIATION. Region III. The lake has been treated for weeds and algae and the association is working on the fish rearing ponds, in addition to other projects.

LAKEVILLE LAKE PO ASSOCIATION. Region V. A lake Board (PA #345 of 1966) has been formed for the primary purpose of acquiring a weed harvester. Dye testing of septic systems is being conducted to determine if there are any defective systems.

THE LONG LAKE ASSOCIATION. Region II. The DNR Self-Help Program is being conducted by Star Scouts Matthew Stowe and Edward Coulter for their Eagle Scout Project. After reading the article by Madeleine Grapes entitled **Growing Up at the Timbers**, we are reminded how important it is that every association research the history of its community and get it in writting.

PINE LAKE PO ASSOCIATION. Region V. As populations on lakes increase and properties change hands, it is necessary to frequently alert boat owners of the boating safety requirements. Weeds floating in to shore have many sources other then the weeed harvester. They can be pulled up on anchors, on motors, on water ski handles, on fishing lures and loosened by swimmers. It is estimated that one "gob" of weeds from a boat anchor can spread out to cover avout 40 square feet of water when floating. It is important to clean your shoreline often.

SILVER-MARL LAKES ASSOCIATION. Region V. Erosion from a development site has forced the association to enlist the help of the DNR to enforce the Soil Erosion & sedimentation Act. The Silver Lake Ski Club and the Lake Shannon Ski Club presented a benefit performance on Silver Lake for an injured club member.

STURGIS DAM CITIZENS FOR ACTION ASSOCIATION. Region IV. Who benefits most from a river association? Those who live on the banks and enjoy the view, the fishing, the swimming, the boating, the trapping and the ice skating. Your association can help to find ways to maintain and improve these benefits.

THREE LAKES ASSOCIATION. Region II. Peg Peterson has written the first of a series of articles entitled **Eco Notes.** She has put into "lay" language the scientific information of the 1978 Water Quality Report. It is well-written and understandable.

PLATTE LAKE IMPROVEMENT ASSO CIATION. Region II. The association, formed only a year ago because of the eutrophic condition of the lake, has several critical problems to face. One is the phosphorus loading that apparently is coming from the fish hatchery located upstream on the Platte River; the proposed construction of a scenic corridor south of the lake; and the source of the excess nitrogen, copper, zinc and lead in the bottom sediments. They are enrolled in the DNR Self-Help Program and are working closely with the NW Michigan Planning council, the UM Biological Station at Douglas Lake and the DNR.

GRAVEL LAKE ASSOCIATION. Region IV. The association's restoration efforts were implemented in the channel by harvesting the aquatic growth which had been adding to the nutrients and sedimentation in the lake. This action was the direct result of a lake study completed recently. Preventative educational efforts urging reduced lawn fertilization and the publication of newsletters accompanied by direct contact by association trustees have been effective. Fund raising activities provided most of the finances for the projects.

PLEASANT LAKE PO ASSOCIATION. Region V. An article about the use of the local roads by trucks carrying gravel from area gravel pits points out that all aspects of the environment are of interest to the riparian owner.

DISCOURAGE VANDALISM AND ROBBERY. (Taken from the Three Lakes Association Newsletter). The state Police encourage summer residents to take the following steps to discourage cottage buglars:

1. Remove all portable items.
2. Implement Operation ID by marking all property in cottage with driver's license number.
3. Put adequate doors and locks on all cottage entrances.
4. Place valuables in locked secure room if they are not removed.
5. Use light timer for interior and exterior lights when the cottage is not occupied.
6. Use shutters to secure windows.
7. Secure items around cottage grounds – boats, trailers, docks, hoists, etc.
8. Remove wheels from boat and snowmobile trailers.
9. Put an inexpensive audible alarm or siren on cottage to alert permanent residents in the area.
10. Have permanent resident check the cottage weekly and report suspicious cars to the police.

ANNUAL MEETING–"GREAT".
This is the comment written in at the top of the evaluation sheet of one of the persons in attendance at the meeting.

The Annual Meeting of ML&SA opened on Friday night at Kellogg Center (MSU) on September 27, with a "cracker barrel" session chaired by Dr. Clifford Humphrys, Professor of Science, Department of Resource Development of Michigan State University. He lived up to his booking as usual. One person commented, "Cliff is delightful, colorful and informative".

Lee Botts, Chairman of the Great Lakes Basin Commission, keynoted some of the problems of the Great Lakes which stem from the uses we make of the land in the Great Lakes basin. (See separate article in this magazine which gives many of her comments.) Comments about her presentation included, "Mrs. Botts was very interesting and very well informed on her topic," and Lee Botts was an excellent speaker.

Evaluation comments on the Saturday and Sunday Seminars were positive, and it was generally recommended that we use these persons at future conferences. The following were typical comments:

"All have been very informative sessions. This has been a terrific meeting, especially for the newer members."

"Wish we had time to attend **all** seminars."

Counting the presenters of the seminars, there were 165 persons registered in attendance. By a show of hands at the first

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general session, nearly 50% were at their first ML&SA Annual Meeting. The enthusiasm which was generated and felt throughout the conference will carry over to a revived interest and desire for the attendees to give whatever attention is necessary to protect their water resources.

STUDY APPROVED BY ML&SA BOARD.
Creation of a Michigan Lake & Stream Associations guidance booklet on home sewage disposal has been approved by the ML&SA Board of Directors.

The publication, which will be about 100 pages long, will be prepared by Paul Todd, a graduate student in public administration at Western Michigan University, Kalamazoo, by the end of 1979. The ML&SA Board, at its annual meeting September 30 at Michigan State University authorized reimbursement of up to $350 in expenses for the project; this does not include salary, which was not requested.

Todd, 36, of Kalamazoo, was a reporter for the **Kalamazoo Gazette** from 1966-1975. From 1976-78, he was an information officer for the "208" regional water quality planning program serving Kalamazoo-Battle Creek and surrounding areas including Hastings, Three Rivers, Sturgis and Coldwater. The latter position involved preparing booklets, newsletters and slide shows for the public on water quality subjects.

Focus of the booklet will be on alternatives to the conventional septic tank-soil absorption system which shoreline property owners can install, and which will reduce pollution including nutrients which encourage weed and algae growth. A key part of the text will be discussion of the acceptability of each alternative to health sanitarians and other officials. Cost also will be estimated, and compared with recent costs for new lakeshore sewer systems.

1979-80 ML&SA DIRECTORS.
The election of directors to fill the expiring terms of vacancies was conducted by the Regions at the ML&SA Annual Meeting in East Lansing. Warren Schug was appointed by the President to another one year term, representing Region I from the Dodge-Island Lakes Association.

Region II elected Margaret Blattenberger of Chief Lake Property Owners Association and Dennis Hansen of East Lake Association.

The vacancy in Region III is to filled at a latter date.

Region IV elected Charles Stutzman, Wamplers Lake Property Owners Association and Kenneth Brubacke of Woodbeck Chain of Lakes.

Robert Swift of Lakeville Lake Property Owners Association and Robert Pearce of Lake Fenton Property Owners Association were elected by Region V.

At the meeting of the Board of Directors, September 30, the following directors were elected to office for the 1979-80 year: President, Cecile Harbour; Vice President, Robert McAlpiine; Secretary/Treasurer, Shirley Keith; Regional Vice Presidents – II, Julius Martinek; III, Wayne Clark (by appointment); IV, Albert Crane; V, Paul Clark. Region I will continue to be represented by Adelor LaCroix.

During the business meeting September 29, the By-Laws were amended to permit the permanent appointment of an Executive Director. Donald Winne of Corey Lake Property Owners Association, St. Joseph County, was formally appointed to this position.

TO MEMBER ASSOCIATIONS OF MICHIGAN LAKE AND STREAM ASSOCIATIONS, INC.

The Board of Directors of ML&SA recommends the following By-Laws provisions by repealed:

ARTICLE VIII (Finances).
Section 1A

"Associations and/or individuals with a membership of one hundred forty nine (149) or less persons, shall pay annual dues to the corporation of thirty-five ($35.00) dollars per calendar year. Associations with a membership of one hundred fifty (150) or more persons shall pay annual dues to the corporation of fifty ($50.00) dollars per calendar year.

Associations with a membership of one hundred forty-nine (149) or less persons who purchase a blanket subscription to the **Michigan Riparian** shall pay annual dues to the corporation of twenty-five ($25.00) dollars per calendar year. Associations with a membership of one hundred fifty (150) or more persons who purchase a blanket subscription to the **Michigan Riparian** shall pay annual dues to the corporation of thirty-five ($35.00) dollars per calendar year.

New members shall be billed for the remaining quarters of the year in which they join the corporation.

All member associations will pay a per capita assessment of eight ($0.08) cents per dues paying member up to a maximum of one hundred dollars ($100.00) per association, in addition to the base rate.

Section 1B

Henceforth, a blanket subscription to the **Michigan Riparian** is mandatory for any association becoming a member of the corporation.

Section 1C

Dues for associate members in the corporation shall be set by the Board of Directors.

The Board of Directors of ML&SA recommends that Article VIII, Section 1 read:

DUES FOR MEMBERSHIP IN THE CORPORATION SHALL BE SET BY THE BOARD OF DIRECTORS.

The reason for these By-Laws changes were explained in the letter mailed to all Lake Association members as follows:

Michigan Lake and Stream Associations, Inc. has grown from a six member association in 1962 to an organization of 140 associations with a total membership of over 20,000. The organization is on record to promote research and study of the water resources of the State and to collect and disseminate that information to riparian property owners; and to publicize and promote the uses of the water resources which have a minimal negative impact on water quality. When these purposes were adopted by the membership four years ago many of us were not aware of their importance.

Today, more than at any other time, our freshwater resources are in jeopardy in terms of both quality and quantity. As a result of increasing population and increasing technology we are approaching and in many places exceeding the limits of the supply. In addition we are creating chemicals which are toxic to all living things and they are getting into both surface and ground waters making them unfit for human use.

ML&SA cannot begin to carry out its purposes for its members on the meager budget under which it operates. If we are to put ML&SA on a sound foundation and in a position to maintain and expand services to our members, it's budget must be increased. ML&SA is seeking a tax-exempt status from the IRS. And as soon as it is

[Continued On Next Page]

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ML&SA NEWS... (Continued From Page 17)

approved application will be made for private and government grants to augment funds. For this reason only a modest dues increase is expected.

The last stumbling block to achieving tax-exempt status is the provision in the By-Laws that any organization joining ML&SA must order a blanket subscription to the **Michigan Riparian.** It was, therefore, recommended at the Annual Meeting (September 29, 1979) that ML&SA repeal paragraphs A, B & C of Article VIII. This would repeal the present dues provisions and remove the blanket subscription requirement. It is recommended that a new Section 1 be adopted which reads: DUES FOR MEMBERSHIP IN THE CORPORATION SHALL BE SET BY THE BOARD OF DIRECTORS.

Since the By-Laws provide that no change can be made without a 30 day notice, we must wait until October 29, 1979 for a vote of the members. However, since the By-Laws also provide for a vote by mail, and since postponing action could delay grant applications for two to three years, the ML&SA Board of Directors has recommended a vote by mail.

The ballot enclosed is for reporting the decision of your association regarding the above mentioned changes in the By-Laws. We urge you to complete the ballot as soon as possible and return it to the Secretary at 9620 East Shore Drive, Portage, Michigan 49002, no later than November 7, 1979. This will enable the Board of Directors to consider the ML&SA dues structure for 1980 at their next meeting which is scheduled for November 11.

YOUR COOPERATION IN THIS MATTER IS NEEDED.

Mrs. Cecile D. Harbour, President

Riparian Pays Tribute To Printing Organization

by Donald Winne
Publisher

THE "FLOCK"

Coldwater, a bustling, progressive town of 10,000 in Southwest Michigan, is headquarters for Eagle Printing Company, Inc., the firm which has produced THE MICHIGAN RIPARIAN since the January, 1977 issue. For those of you who are printing buffs, the magazine is printed with a two-color, sheet fed, 36-inch Harris offset press, at speeds of up to 9,000 impressions per hour. It is folded, collated, stitched and trimmed automatically. If that was all there was to it, this would be the end of the story. But there is more.

Until that January, 1977, issue, and from the time THE MICHIGAN RIPARIAN began about 1955, the publication was a newsletter — a very good one. It presented the news of what was going on legislatively and otherwise to a growing membership.

By late in 1976 it had become obvious that the newsletter had the potential to become a more prestigeous magazine. Eagle Printing Company developed a magazine format with a full-color cover. Since then the circulation has grown from 9,000 to more than 13,000. Today, Eagle's new President, Terry Garn, with his graphic arts designer, David Hodson, continue to improve the magazine format, spending many hours "above and beyond". Thanks to the extra efforts expended, not only by Dave and Terry but by Sharon Peterson, Carolyn Lehman, Don Hughes, Chris Pavka and Rip Ridenhour, all involved in its production, the magazine has a bright future.

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1 Page	575	570	556	532
1/3 Page	450	441	420	399
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CIRCULATION, 13,000 - Readership: more than 24,000 lake and stream water front property owners.

THE MICHIGAN RIPARIAN

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KEYHOLE LAKE ACCESS: the Choctaw Woods Case

By Otto Krauss

When I first saw Higgins Lake almost a half century ago, it was a jewel of clear-water lake set in pristine surroundings.

Roads were mostly sand trails, Access to the lake was not a problem for the cottage owners along the lake.

A few walking trails led to the water's edge. The only vehicle access to the lake was for the wagons hauling off the ice for household use.

Electricity which came during the latter 30's, automobiles, highways and the ensuing rapid development of the Higgins Lake basin changed all -- as it did elsewhere in the north country, in spite of much effort to control it.

Now, more and more people want access to the lake, never mind by what means, while the lake is getting dirtier all the time.

Commercial and real estate interests have strong voices.

It makes for a conflict between lakeshore people and efforts to maintain a reasonable level of environmental quality on the one hand and non-riparians on the other hand.

Choctaw Woods, if allowed, would open the doors wide.

Choctaw Woods is a residential subdivision in Gerrish Township, Roscommon County, one of the newer subdivisions platted in 1971 - 72.

Gerris Township has about ¼ of the shoreline of Higgins Lake's 9,600 acres, the other ¼ being in Lyon Township situated west of Gerrish.

A small part of the lake on the north end is located in Crawford County, mostly DNR land, a State Park and the DNR conference Center.

There is also a State Park at the south end of Higgins Lake.

About 40 platted lateral roads lead to the lake in Gerrish Township, some improved, some unimproved, but many of them a continuous source of friction.

There is also a public fishing site controlled by the State.

Gerrish Township Park also located

DR. OTTO KRAUSS

on the lake gets a good bit of use.

No doubt there are sufficient access opportunities, although often not exactly where people want them.

Gerrish Township has a Zoning Ordinance enacted in 1960. It has been amended several times and is presently being revised.

There is also a Subdivision Control Ordinance enacted in 1972. It has been amended.

The lake shore is almost completely developed residential/recreational with only few exceptions.

March 1971, the Township Board accepted a preliminary plat for Choctaw Woods. It was formally approved in May 1971. The plat comprises 40 lots.

Earlier, that is in 1970, the plat had been presented with higher lot density but was rejected by the Gerrish Board.

Up to the point of plat approval by the Gerrish Board there is not clear evidence that the Board knew or raised the question concerning how the 40 lot owners would get to the lake.

Public access is quite limited in that particular area. No disclosures were made in proprietors statement of plat. There is evidence however, that the developers, International Leisure Market, Inc. et al, in July of 1970 bought one single undeveloped 49' lot, Lot 6, in Hillsdale Heights Subdivision, an old lakefront subdivision which was platted in 1925.

Lot 6 would be about the nearest access to Higgins Lake for Choctaw Woods residents.

The tract of land which was subdivided to form Choctaw Woods had been acquired by the developers during the 1960's.

They also acquired an adjoining lot to provide for the easements necessary to connect Choctaw Woods to Lot 6.

Register of Deeds records show that plat restrictions and regulations for Choctaw Woods were recorded July 9, 1971 and articles of association were recorded October 5, 1971.

This entire acccss arrangement was not officially known to the Gerrish Township Board nor the Gerrish community.

Plans to connect Choctaw Woods to Higgins Lake came into the open when the sales agent DeWitt Realty started distributing sales literature. Lot 6 was shown in this literature as a "Park."

All the owners in Choctaw Woods were to own this "park".

Obviously, what surfaced was a set-up for a keyhole or hour-glass access to the lake, that is, 40 households and who else since that kind of an access track would be difficult to control.

The information spread quickly once the cat was out of the bag and created a great deal of interest, to put it mildly.

What followed was the long, tedious road to a judicial remedy.

The problem was first taken to the Zoning Board which took no action. The owner and seller of Lot 6 was a member of the Zoning Board.

Then the issue went before the Gerrish Township Board, which, after some deliberation and hesitation, instructed the Building Inspector to post a zoning violation notice on the property.

Soon thereafter the notice mysteriously disappeared.

[Continued On Next Page]

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KEYHOLE LAKE ACCESS ....

[Continued From Page 19]

The Town Board took no further action.

Neighbors to Lot 6, a party named Kreis, through their attorney Patterson (Patterson & Patterson, Whitfield, Manikoff & White, Bloomfield Hills) made at least one appearance before the Township Board complaining about the situation. He urged the Board to take remedial action.

Others spoke up at Township Board meetings including representatives of the Higgins Lake Property Owners Association (HLPOA).

By now it was August of 1973.

In the end, Attorney Patterson took the case to the Roscommon Circuit Court on the grounds of (1) zoning violation, (2) violation of riparian rights and (3) nuisance.

The HLPOA joined the fray acting as intervenors for the plaintiff through their own counsel. Others were named co-defendants, including the realtor, DeWitt, who was sales agent for Choctaw lots.

Once the proceedings got under way, the attorneys for the defendants introduced a side-issue to confuse the case and make it more complicated.

Since the side-issue has little relevance to the case, and in the interest of conserving time, details of the side-issue will be omitted. If anyone is interested it can be discussed otherwise.

The case was heard in Roscommon Circuit Court during August and September of 1976. It was a non-jury trial. Note: 5 years have now passed since starting from square one.

The plaintiff was seeking a declaratory injuction citing

a) violation of Zoning Ordinance
b) violation of plaintiff's riparian rights
c) the nuisance of an access park in a residential area.

The arguments for the defense were

a) there is no proven violation of the Zoning Ordinance
b) proposed and actual use of Lot 6 was not an unreasonable use to a point of violating riparian rights.
c) there was no proof of nuisance.

Fox, the County Sanitarian, testified that Lot 6 alone was unsuitable for residential building because of septic tank and drainfield require) ments.

There are no sewers in Gerrish Township.

Considerable testimony had to do with the question whether, at the time the Choctaw Woods plat was presented, the officials party to the plat approval knew about the intended use of Lot 6.

No conclusive evidence came out of the testimony. Township officials of the period conflicted in their testimony or did not remember.

It is of note, that a number of witnesses had been involved in the Choctaw development and had an active interest in it.

Judge Horn's opinion was filed December 6, 1976.

It said that Choctaw Woods Subdivision Property owners can use a lakefront lot in Hillsdale Subdivision for access to Higgins Lake.

It further said that such action by property owners in the Subdivision does not violate the Gerris Township Zoning Ordinance nor the riparian rights of the plaintiffs in the case.

Recreational use of Lot 6 was not a violation, saying that various parks and road-ends now existing allow persons to use the lake; also, that the type of use falls within the classification of residential use.

Judge Horn noted that Gerrish Township had tagged the property for being in violation but did not follow up on it.

Judge Horn adopted the defendants' arguments: " ... there is no showing that the use of the water of the lake by the defendants is unreasonable," citing use of the lake at State Parks, road-ends, resorts and other areas.

Judge Horn went on to say, that the case is different from other riparian cases in that the defedants are undisputed riparian owners who wish to continue using their own land, that is Lot 6 for recreation and lake access.

Use of Lot 6 in Hillsdale is not a nuisance to the plaintiff Kreis. There is no evidence that Kreis will suffer injury to peace and rest, Horn said in his opinion.

Judge Horn's opinion was issued December 22, 1976.

I had not personally paid much attention to the case until face to face with this serious turn of events.

According to Judge Horn we had lost our case, that keyhole access was legal, and that thereby riparian rights and zoning had been given a serious blow.

Think about it, according to Judge Horn, any subdivider could acquire small lakefront parcels and use them for endless number of people to access a lake or stream.

Things could really go wild.

Obviously, there was only one thing to do, that is, take the case to an Appeals Court.

There was a 20-day deadline. It was in the middle of winter, over the holidays, many lake people away, creating a challenging problem to initiate appropriate action.

We had some dissenters who felt it wasn't worth the effort and would cost too much money.

The Circuit Court transcript alone cost $1,000.

But we made it in time to the Appeals Court, the HLPOA barely staying with it, but without their attorney.

Oral arguments were heard before the Appeals Court December 1977.

The opinion was issued by the end of the following January.

The order was entered during March of 1978.

It was a clean reversal of Circuit Court: "... it is hereby ordered and adjudged that the Defendants, their heirs, successors and assigns, and those persons acting in concert with them be and the same are hereby permanently enjoined and restrained from subjecting said Lot 6 to any use inconsistent with the single residential restrictions thereon, particuarly, but not limited to, providing lake access, picnicking, sunbathing and swimming in conformity with such restrictions."

"...it is further ordered and adjudged, that the Defendants herein pay any and all costs as taxed by the Court of Appeals."

There was no question in our minds about the Defendants taking the case to Michigan Supreme Court.

Again, there was the 20-day limit for filing.

Defense counsel notified Plaintiff

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counsel that they would appeal to the Supreme Court. But the 20)day filing period lapsed.

In the end they did file a "delayed" appeal which comes under a 180-day limit, if the Court sees fit to accept the excuse for not filing within the prescribed 20-day limit.

About one in nine cases is accepted by the Supreme Court, the odds go higher with a delayed appeal.

In February of 1979 the Supreme Court denied and placed the case back into Judge Horn's Court:

"...on order of the Court, the delayed application for leave to appeal is considered, and it is DENIED, because the Court is not pursuaded that the questions presented should be reviewed by this Court."

We had won our case.

In April of 1979 Judge Horn issued his permanent injunction pursuant to the opinion of the Court of Appeals.

It was a long struggle, but it was worth it.

Every riparian in Michigan benefits and will benefit from the Appeals Court opinion in 77-210 and 77-213 (in Roscommon Circuout Court 74-1355 and 75-1662).

A few of the lessons learned were: It is important to (1) have and maintain good landuse regulations, (2) see to it that the regulations are rigorously enforced and (3) to make sure that "residential uses" are clearly defined in these regulations. Residential use is probably least harmful to a lake or stream shoreline. Neighborhood control and self-interest in the protection of the individual investment are strong factors in the preservation of environmental and water quality.

CHOCTAW WOODS

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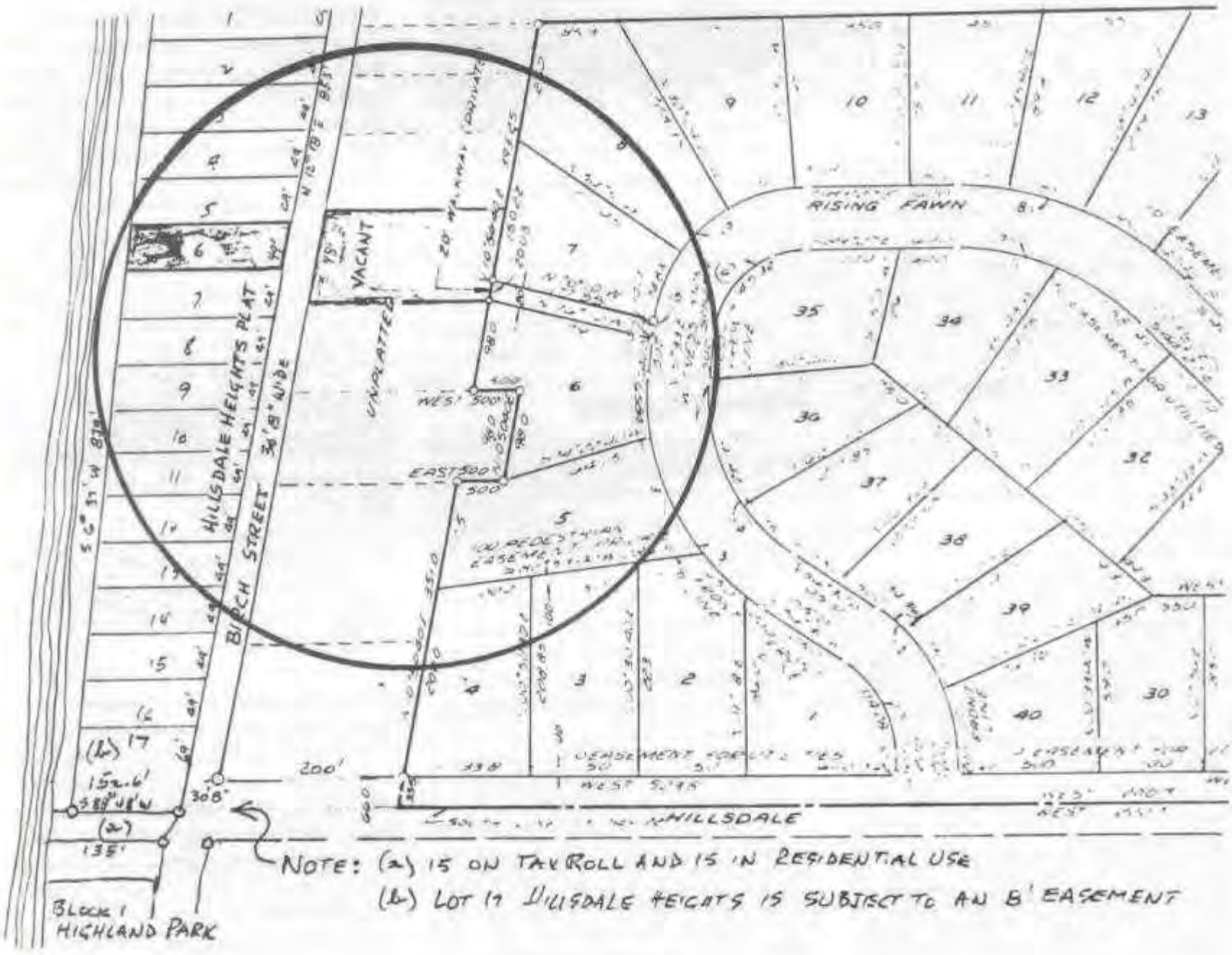

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TOWNSHIP and COUNTY ZONING

ending disorderly community growth

By Donald Winne

Governmental units in Michigan have been given power to zone the use of land by specific enabling legislation passed by the Michigan legislature in 1943. Act 183, the County Rural Zoning Act, and Act 184, the Township Rural Zoning Act were both passed in that year. Amendments to these Acts since 1943 have increased the power and responsibility of township and county government.

The need for zoning the use of land in early America did not exist when there were few people to clear and inhabit the land. In fact, government was only interested in getting settlers on the land and getting enough money from its sale to pay the administrative costs. In addition, the prevailing mood among the settlers was to keep government to a minimum. Witness the provisions in State constitutions of the 1780's and in the Federal Constitution of 1787 which provides:

> "The powers not delegated to the United States by the Constitution, nor prohibited it by the states, are reserved to the states respectively, or to the people."

It is basic to American government that government has only those powers given to it by the people. *GOVERNMENT DOES NOT HAVE AN INHERENT RIGHT TO ESTABLISH LAWS AND TO GOVERN.* The idea of government being given power to rule was written into the Declaration of Independence in these words, "We hold these truths to be self-evident--that all men are endowed by their Creator with certain inalienable rights... life, liberty, and the pursuit of happiness. That to secure these rights, *GOVERNMENTS ARE INSTITUTED AMONG MEN, DERIVING THEIR JUST POWERS FROM THE CONSENT OF THE GOVERNED.*" Justice Miller (United States Supreme Court Justice 1875) summed up this philosophy when he wrote:

> "It must be conceded that there are rights in every free government beyond the control of the state. A government which recognized no such rights, but held the lives, the liberty, and the property of its citizens subject at all times to the absolute disposition and ultimate control of even the most democratic depository of power, is after all, but a despotism of the many--of the majority, but non the less a despotism. The theory of our governments, state and national, is opposed to the deposit of unlimited power anywhere."

These rights were further spelled out in the fourteenth amendment to the Constitution in 1868. The amendment provided:

> "All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States and of the state wherein they reside. No state shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any state deprive any person of life, liberty, or property without due process of law, nor deney to any person within its jurisdiction the equal protection of the laws."

To argue that the common law, in either England or the colonies prior to the adoption of guarantees of life, liberty and property written into state and federal constitutions in the 1780's, protected and provided for the health, safety and welfare of the individual is an argument of "petitio principii". Imprisonment for small debts, enforced labor of women and children for long hours and low wages and cruelties meted out to the less fortunate and insecure individuals into the 19th century attest to the fact that security of life, liberty and property was sporadic and problematical. These are evidences of the failure of the common law to protect.

During these same years that individual guarantees were being spelled out, the drive for wealth and power on the part of some individuals was denying other individuals the equal protection of the laws in matters of health, safety and welfare.

One of the earliest attempts by a state to protect the health of its citizens was a law passed by the state of Louisiana in 1869, which ended up in litigation in the Supreme Court in 1873 and again in 1883. These cases are known as the "Slaugter House Cases". In a 5-4 decision, the Supreme Court upheld the state law and argued that a state could pass a law under its "POLICE POWER" to protect the health, safety and welfare of its citizens. Subsequent laws in Illionois and Wisconsin of similar nature were upheld by Supreme Court decisions.

The reform legislation of the 1890's and early 1900's were attempts to solve health, safety and welfare problems making it unnecessary to fight it out in the courts. Then came war, depression and another war. During these years, scientists were breaking the knowledge barrier on all fronts -- in physics, chemistry, biology, medicine, space, etc. With this expansion in knowledge came the creation of chemical and products which astound the imagination. Their indiscrimi-

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nante use has resulted in an assault upon the earth and atmosphere from which it will take generations to recover.

This is where we are in 1979. The pursuit of happiness and the protection of life, liberty, and property is again being fought out in the courts. The fulcrum is now weighted on the side to regulate--to regulate land use, to regulate water use, and to regulate what we put into the air. Why? Because poisoned water is the same as no water at all; because despoiled land will not produce food; and because polluted air will destroy human health.

The most recent addition of zoning powers to township government came with the enactment of House Bill No. 4592 which became effective on March 1, of this year. This Act gives townships power to adopt zoning ordinances for the purpose of regulating land development and establishing land development districts. Any such zoning ordinance passed by a township must be designed to do the following:

1. Promote the public health, safety and welfare.
2. Encourage the use of lands in accordance with their character and adaptability.
3. Conserve natural resources and energy.
4. Advoid overcrowding of population.
5. Provide adequate light and air.
6. Lessen congestion on the public roads and streets.
7. Reduce hazards to life and property.
8. Facilitate adequate provision for a system of transportation, sewage disposal, safe and adequate water supply, education, recreation, and other public requirements.
9. Conserve the expenditure of funds for public improvements and services.

The purpose and intent of this legislation coincides with the Rural Township Act of 1943 yet at the same time they re-affirm that local government has, through "POLICE POWER", the authority and responsibility to protect the health, safety and welfare of its citizens.

WHERE THE ACTION IS...

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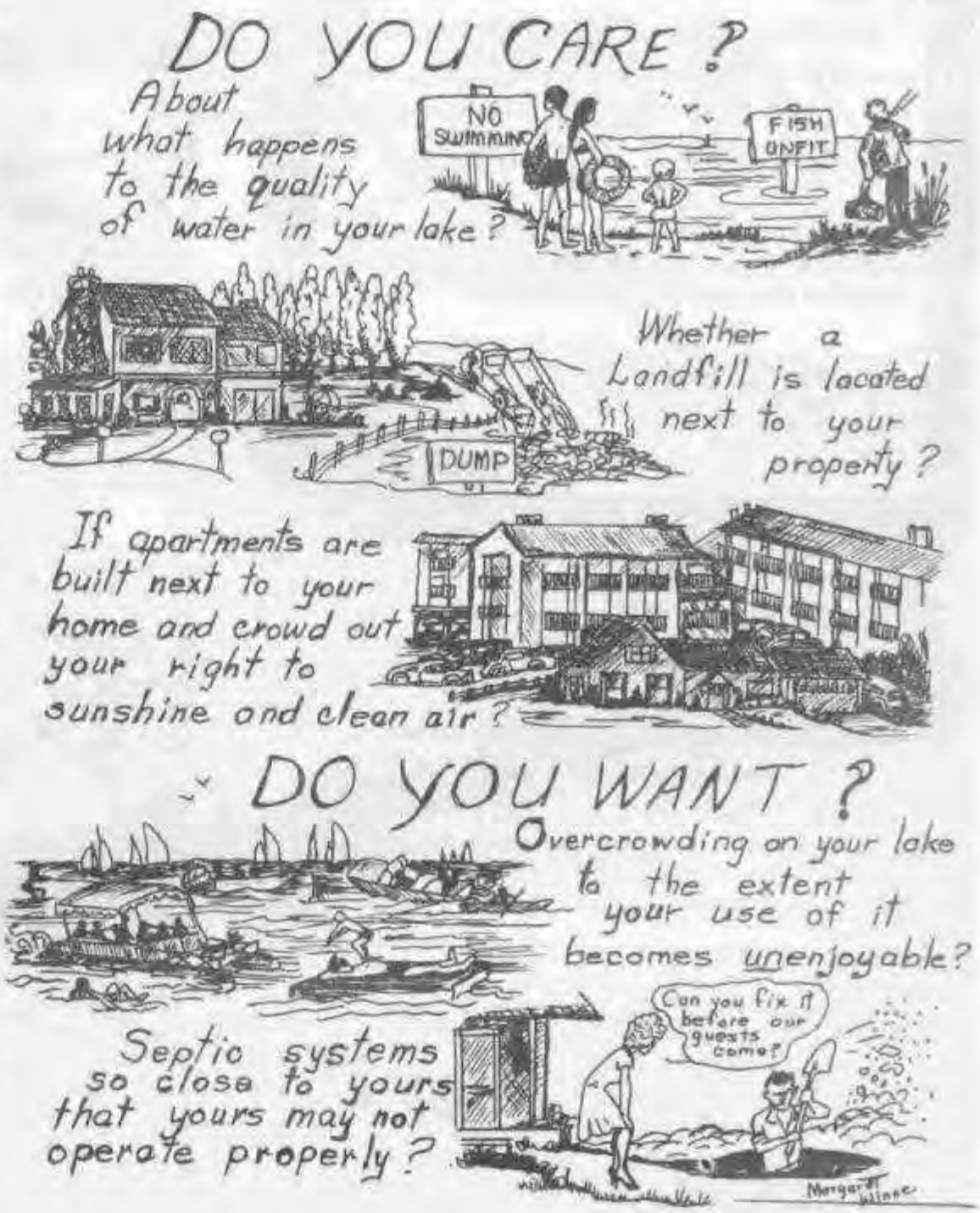

... ATTEND YOUR TOWNSHIP MEETINGS

If you have any of the above concerns, forming an Association can give you more clout in working with township and county officials when they are making decisions which affect your property interests.

If you already have an Association of Riparian Property Owners, be an active member and take an active part in working with township and county officials in the decisions which affect you.

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