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INLAND LAKE KEYHOLE DEVELOPMENT:

An Analysis of Local Zoning Approaches: Part One

by Mark A. Wyckoff, AICP Editor

INTRODUCTION: Increased population, leisure time and disposable income have combined to place enormous strains on many inland lakes across the country. Nowhere are these pressures as great as on inland lakes near large urban areas. Yet even lakes within three-four hours of major metropolitan areas are showing signs of severe strain from "wall to wall" cottage development and intensive surface use. As a result, lakefront property owners (of land often worth more than $1,000/front foot) are increasingly going to court to protect riparian rights felt threatened by intensive waterfront development proposals and greater surface water use. This trend is especially evident in the Midwestern states of Michigan, Minnesota and Wisconsin (each over 10,000 lakes) which are facing many new keyhole development proposals.

THE PROBLEM: "Keyhole development (also known as "funnel" development) is the use of a waterfront lot as common open space for waterfront access for a larger development located away from the waterfront. This results in potentially greater lake use than would "normally" occur if the lot were used for a single family cottage. Increasingly, keyholing occurs with the purchase of a small waterfront lot by a "backlot" owner, who then grants either access (by license or easement) or a share in ownership to the waterfront lot, to backlot owners/residents/users. Many ownership or easement combinations are possible. (see "Water Based Recreational Developments in Michigan - Problems of Developers" Bartke and Patton, 25 Wayne Law Review 1005-1063, July 1979). If unchecked, a proliferation of keyhole developments could dramatically alter both the surface use characteristics and appearance of a lake; especially if canals are dug to increase lakefront access. (See illustration accompanying **Thompson** case in Part II of this feature).

Keyhole development is not new. Many old plats reserved a waterfront lot as access to the lake for backlot owners. Many granted easements allowing legal access, but not full riparian rights. However, as seasonal cottages became permanent year round residences, and lake use increased, water quality often decreased (usually due to faulty septic tanks). As surface water use increases, so do concerns about: shore erosion from speedboats and waterskiers; property values; oil and gas spillage from powerboats; noise; conflicts between various users (sailboats, fishermen, speedboats, waterskiers, swimmers, pontoon boats, etc.); and the high costs of correction of damages. For these reasons, and others related to the impacts and compatibility of higher intensity land development near lakes, waterfront owners are suing to protect their riparian rights and municipalities are beginning to regulate (and in some cases prohibit) keyhole development.

Local government efforts in Wisconsin and Minnesota are guided /circumscribed by state shorelands statutes. Elsewhere however, municipalities are venturing forth into uncertain territory armed only with the assumption that their efforts fall within the confines of a state enabling act. Yet, additional support may come from parallels with riparian common law principles of "reasonableness" as applied to the resolution of surface water conflicts. These principles are very similar to reasonableness principles applied by courts in the evaluation of many local zoning provisions.

This article examines twelve local regulatory ordinances prepared by Michigan and Wisconsin municipalities which seek to restrict or prohibit keyhole development. These approaches are compared with "model" shoreland zoning approaches used in Minnesota and Wisconsin, and with the concepts of "reasonableness" as developed and applied by courts in states subscribing to the "riparian doctrine" (generally those states east of the Dakotas, Nebraska, and Kansas). The comparison is made in order to fashion a management approach that seeks both to solve the identified problem of keyhole development and provide a structure for dealing with other related inland lake management problems. The term "riparian" will be used in this article as it is commonly used in law in the Midwest to refer to owners of property abutting a waterbody, whether it is a lake or a stream. Other parts of the country refer to owners of lakefront property as "littoral" owners and owners of property along streams and rivers as "riparian" owners (see Black's Law Dictionary).

For readers unfamiliar with riparian rights, it may be instructive to review the four basic attributes of riparian rights. These rights belong only to fee simple owners of property abutting a waterbody: (a) the right of access to navigable water, (b) the right to build a pier out to the line of navigability, (c) the right to accretions and (d) the right to a reasonable use of the water for general purposes such as boating, domestic use and so on.

Reasonable use in the context of surface use of the water, extends across the entire waterbody which may be used

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without restriction by other riparians (or their licensees or guests), provided that access was lawfully obtained and the use does not unreasonably interfere with the right of use by other riparians. The right of access to navigable waters is often considered to be the most important right constituting the chief source of value of riparian property. (61 ALR3rd 1173, sec 2(a), p. 1177.)

This article will not address variations on these problems that may result from funnel development in coastal, Great Lakes, estuarian or river settings. While it also does not examine differences in the problem, or in the proposed solution as applied in western states operating under the "prior appropriation" doctrine, the elements of reasonableness as applied to conflicts between surface users of water share many similarities across the country.

LOCAL REGULATORY APPROACHES

Since all appellate level litigation (to date) on keyhole development has involved riparians versus developers, one could ask "Why should a municipality even get involved?" Why not leave the matter to state agencies and to lake associations? Many practical reasons argue in favor of doing so, especially when one considers the cost of developing an adequate lake management plan, and then subsequent zoning regulations. However, a case by case solution fashioned by the courts, also has several negative implications:

1. it shifts the cost and burden to those lake assocications and individual riparians that have the desire and ability to pay to defend their riparian rights, which if they win provides benefits to a much larger group, including the general public. Those lakes without riparian associations, or without adequate financial resources are effectively without a remedy.

2. it assumes that a court will always fashion a fair and equitable solution, when a well designed and fairly administered zoning regulation could be more likely to assure that end if it anticipates, future and not simply present use characteristics of the watershed, And,

3. it implies that local public interests are the same as state or lake association interests and will therefore be protected in litigation, yet there is not reason to assume this will always, if even most often, be true.

In short, a court remedy is remedial, when what is needed is a preventive, foresightful solution that is based upon sound watershed planning and flexible regulations. The reasonableness of a keyhole development proposal, as with any surface use conflict, is really a matter of resource apportionment and equity. Courts are very comfortable with equity issues, but not so comfortable with resource apportionment issues. (See Frederick L. Miller, Jr. "Conflicting Rights to the Use of Lakes for Recreation", Land & Natural Resources Division Journal, US Dept. of Justice, Vol. 11, June 1973, No. 6, p. 171).

Thus, in an attempt to protect the public interest in inland lakes threatened by keyhole development proposals, some municipalities have responded with zoning, subdivision and independent regulatory ordinances. Table I reproduces the key sections of twelve local keyhole ordinances. One freestanding ordinance prohibits "funnel development", another any access to a waterbody by a nonriparian. Two tend toward prohibition, but under broad conditions allow some backlot lake access. Seven allow it under large lot circumstances and pursuant to a number of specific conditions. The last ordinance combines elements of the others and adds a "carrying capacity"limitation as a standard that must be met in order to get approval. **All approaches either focus on controlling access to the lake in order to minimize surface use conflicts or they also focus on the recreational/open space use of the access lot.**

STATEWIDE APPROACHES:

Wisconsin in 1966 (Water Resources Act, Sec. 59.971 and Sec. 144.26 Wisc. Stats.) and Minnesota in 1969 (Shoreland Management Act, Sec. 105.485, 394.25(2) Minn. Stats.) led the nation with a comprehensive approach to zoning of waterfront areas (rivers, lakes, ponds, streams, and wetlands). These state statutes require counties (and in Minnesota, municipalities as well) to zone all waterfront lands in a manner consistent with state regulations. Model zoning regulations were prepared in each state to assist with the task.

While the model regulations in neither Wisconsin nor Minnesota specifically address keyhole development (Wisconsin Shoreland Protection Ordinance, Dec. 1967, Wisconsin DNR, Madison, 78 pages; Minnesota Shoreland Protection Ordinance, 1970, Minnesota DNR, St. Paul) the model provisions present a good "base condition" against which keyhole provisions can be compared. A traditional zoning scheme is envisioned in each model.

In each state, single family use of waterfront lots is the primary permitted use. **Large lot zoning is the primary zoning technique.** In Wisconsin, a 20,000 square foot lot size and 100' lot width at the building line are the minimum standards (except where public sewer is available - then a 65' lot width is allowed.) In Minnesota, minimum lot sizes vary between 20,000 - 80,000 square feet, with 100' - 200' lot widths depending on the type of lake involved. All lakes are classified into one of four types: "critical", "natural environment", "recreational development" or "general development". These classifications were based on data collected by extensive university studies of the major recreational lakes in Minnesota. Minimum setbacks vary from 75' - 200'. While these regulations were designed primarily to reduce the effects of septic pollutants from entering the lake, they were also conceived to prevent overcrowding of lake surfaces. (For an extensive discussion of the Minnesota scheme, see "The Impact of Variances: A Study of Statewide Zoning", David P. Bryden, 61 Minnesota Law Review 769, 1977).

Staff in the Department of Natural Resources in both Wisconsin and Minnesota indicate that keyhole proposals could only be handled under the PUD provisions of the model ordinances. However, since neither model was specifically prepared with keyholing in mind, many details are not adequately addressed (especially with regard to single lot condominium developments, and developments on parcels of less than 40 acres, the PUD minimum). The Minnesota model allows for increasing the density of lot use by as much as 50% on the "first tier" lots, but does not permit watercraft moorings. The Minnesota model is currently under review for updating.

These state shoreland statutes have the tremendous benefit of insuring a minimum and uniform approach to protection of inland lakes. However, the omission of provisions specifically addressing keyhole development, places the burden on local governments to fashion their own solutions (which are permitted on topics not covered by the minimum state standards). The explicit provision in the model ordinances for planned unit developments is a very good idea (even though the specific standards are out of date).

ANALYSIS OF THE KEYHOLE ORDINANCES

Following is an examination of some of the strengths and weaknesses of each of the local keyhole ordinances listed in Table I.

Outright Prohibition and Severely Limited Conditional Approvals: The **Resort Township Ordinance** prohibits keyholing, or as it is called in the ordinance, funneling. The definition employed is specific, and covers the bases. It is adopted as a separate ordinance and not as an amendment to a zoning ordinance, presumably to "protect" the zoning ordinance in the event that the "Anti-Funneling" Ordinance were to be ruled invalid. It contains a carefully worded set of findings as to the public benefits of such an ordinance. But is it reasonable to exclude all keyhole development? No specific studies were performed, or referred to as support for the "horrors" sought to be prevented. A well designed keyhole PUD could have fewer lake impacts than an equivalent number of scattered lot cottages, yet the PUD would be excluded under the terms of this ordinance.

The **Fenton Township Ordinance** parallels the Resort Township Ordinance in intent, but even presuming that total prohibition is permissable, it creates a significant administrative problem in determining what a "nonriparian" property owner is. Are the owners of a condominium on riparian land, "nonriparians"? It is much easier to determine what a riparian is, than what a nonriparian - especially since a nonriparian may still have a legal right of access to the lake, and thereby have the same effect on surface water use as a riparian.

A similar problem exists with the **Rose Township Ordinance**, which to its credit also attempts to establish at least some general standards for determining whether or not to approve use of the riparian parcel by nonriparians. However, because the standards are so general, insuring fair and consistent application on a case by case basis, may be very difficult to achieve.

The never adopted **Marion Township Ordinance** is also similar but differentiates between a riparian and waterfront owner. These terms are defined. They result in the apparent inclusion of owners of "waterfront" on artificial lakes, yet limit acess only on "natural watercourses". The restriction clearly applies to licensees as well as to guests of the riparian owner. However, if the "riparian proprietor"

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1985-86 Legislation

Noise Standards for Motor Boats

Legislation establishing noise standards for motor boats was introduced by Assemblyman Halpin (D-Suffolk) and Senator Levy (R-Hempstead). The bill would require that boats manufactured after September 1987 meet a noise standard of 82 decibels (currently law in New Jersey and Conneticut). This bill passed the Assembly but was never considered by the Senate Transportation Committee.

Vessel Registration and Titling

Existing registration fees for motor boats, last increased in 1959 are low in comparison to fees charged in neighboring states. This bill which became law in 1985, provides that triennial fees for registration of vessels equipped with motors would be increased from $3, $6 and $10 to $9, $18 and $30. The general idea of the bill is to increase revenue derived from the registration of motor boats and boat dealers; to provide for the titling of certain motor boats, improve boat registration procedures, and develop anti-theft programs; and to provide for an increase in state aid available for reimbursement of approved local law enforcement. Highlights of the bill are that boat dealers and yacht brokers would be required to register their businesses with the Commissioner of Motor Vehicles and triennial fees would be established; that the statutory formula for state reimbursement of local navigational enforcement efforts would be changed from 50% to 75% of approved enforcement costs; the Commissioner of Motor Vehicles would be required to issue validating stickers to all registrants, who would be required to display these on their craft; owners of 1986 and later model year vessels equipped with inboard, inboard/outboard or outboard motors would be required to title these in the same way as motor vehicles are titled; registration exemptions for documented vessels would be limited to only those used for commercial purposes and those without motors.

Marina Pump Out Facilities

For several years, Assemblymember Koppel (D-Bronx) has sponsored legislation requiring that marinas which service boats with holding tanks be equipped with facilities to empty sewage and water from those tanks. Marinas would be allowed to charge for this service. Marinas which only provide fuel are exempt. The bill has passed the Assembly but remains in the Senate's Environmental Conservation Committee.

Boating Safety Certificate

Assembly bill 5828 introduced by Assemblymember Halpin suggests amending the navigation law so that no person shall operate a pleasure vessel propelled by mechanical means, other than sail, having a power rating in excess of 25 horsepower in the navigable waters of the state unless the operator is the holder of a boating safety certificate issued by the Commissioner of Office of Parks, Recreation and Historic Preservation. Introduced in March 1985, the bill remains in the Transportation Committee.

Compulsory Boat Insurance

Assembly bill #7843, currently in the Government Operations Committee, suggests the creation of an interagency task force to study the feasibility of requiring insurance for motorboats operated upon the waters of the state.

Intoxicated Boaters

Assembly bill 1686A and Senate bill 6593 propose to establish criminal penalties for operating a mechanically propelled vessel in an intoxicated condition and if a person is killed or injured. Both bills are being debated in the Rules Committee. They specifically provide to impose a fine of $150-$250 and a fine of up to $500 for repeat offenders. It also authorizes a court ordered chemical test if an operator who is intoxicated kills or causes serious physical injury to a person.

Overhorsed Boats

Current federal regulations state that all monohull mechanically propelled boats under 20 feet must display a manufacturer's "capacity information plate" which states passenger capacity, maximum horsepower, weight capacity, etc. Individuals who (for the sole purpose of going faster) buy boat motors which exceed the specified horsepower capacity of their boat present a danger to themselves and others. Such situations would be discouraged and prevented by this legislation which specifically prohibits mechanically propelled vessels of classes A and one from being equipped with either an electrical or fuel operated engine with greater horsepower than that specified by the manufacturer. Assembly bill 4056 and its Senate counterpart 4935 are in the Codes Committee.

Boat Operator Licenses

Assembly bill 3179 introduced by John Cochrane provides that the operation of any boat propelled by mechanical means of over 5 hp, while in navigable state waters, must have a valid motorboat operators license. The bill states that the only significant regulation of motorboat operators' qualifications is through the requirement that children 10-16 years of age must pass a boaters' safety course. This bill will simply provide a means to ensure that qualified persons are operating motorboats. There are no age limitations and present requirements as to safety instruction will not be changed. Small boat operators, such as fishermen, will not be substantially affected, unless the horsepower exceeds the 5 hp limit. The bill is currently under review in the transportation committee.

Aquatic Vegetation Control

Legislation introduced by Assemblymember Warren and others in January of 1985 and by Senator Perry in May of 1985 proposes the granting of state aid for aquatic vegetation control in lakes and reservoirs having permanent public access. Aid would be granted to counties for 50% of the amount of money expended by a county for such a program. Conditions for aid include submittal of a survey of the body of water affected, plan and methods of vegetation control, timetable fo project implementation, and a long-range plan to prevent activities which encourage aquatic nuisance vegetation. Identical bills, S5925 and A1197, are in the Senate Health Committee and Assembly Ways and Means Committee.

Legislative Numbers

Status of Bills in Both Houses: (800) 342-9860
Senate Hot Line: (518) 455-2255
Assembly Public Information Office: (518) 455-4218
Senate Switchboard: (518) 455-2800
Assembly Switchboard: (518) 455-4100

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is several "persons" owning the property in common, cooperatively or by a form of condominium ownership, then they may well be excluded from the exclusion, since they would not need to "grant an easement, right of way or license" to someone else for access" - hence the purpose of the regulation would be defeated.

The Michigan Attorney General opined that the Marion Township proposed ordinance was invalid because the zoning enabling act does not specifically *"authorize a township to prohibit, restrict, or otherwise diminish the right of a riparian property owner to grant easements, rights-of-way, or licenses over and across his riparian lands so as to provide access to navigable waters"*. (OAG No. 6070, May 25, 1982). The logic of this opinion is however, poorly argued, and has been widely criticized by attorneys who have studied it.

It would seem that in the absence of a well documented inland lake management plan, the reasonableness of each of the above ordinances could be challenged as being without an adequate and clear public purpose. Likewise, the means chosen (total or near total prohibition) to achieve the ends sought, may not pass judicial muster. In general, these ordinances take either too restrictive a position, or are too narrowly constructed for this writer to be confident about their ability to withstand even standard attacks on their validity (reasonableness). If keyhole development could be established as a separate, lawful type of land use, exclusionary challenges may also be possible.

Recreational Use & Access Controls: The **Hayes Township Ordinance** takes a very simple and straightfoward approach that in effect severely limits keyhole development. The ordinance permits not more than one single family home, nor more than 1 mooring or dock space per 100 feet of water frontage. The provision includes a statement that its purpose is to preserve the quality of the waters and the quality of recreational use. Variations are permitted under certain circumstances. This standard is essentially the same as that applied to lots in a standard subdivision, and effectively precludes any backlot that was not at least as large as the waterfront parcel.

The sample keyhole provision prepared by the **Wisconsin DNR Inland Lake Task Force** sets up a sliding scale for the minimum width of the waterfront lot depending on the number of units proposed to be served. In comparison to the above provisions, it is quite liberal. However, it allows considerable discretion to the decision body without providing any standards to guide their administrative action.

The **West Bloomfield Ordinance** permits keyholing, but establishes a very large 300' minimum waterfront parcel with an additional 20' for each backlot. How this ordinance would apply to a PUD for a multi-unit condominium project all on one lot is a mystery. It also inlcudes a prohibition against launching boats that would be very difficult to enforce even if it were lawful (one of the basic riparian rights is a right to launch boats).

The **Texas Township Ordinance** is a variation of the West Bloomfield Township approach that is also carefully tied to subdivision restrictions. While it has the same problems, it raises another question. Can a subdivision regulation limit the terms or conditions of conveyance of undivided interests in property? (Ostensibly, subdivision controls regulate the division of land, not the conveyance or sale of land.)

The **Emmet County Ordinance** permits keyhole development that meets conditional use permit standards designed to insure compatibility with adjacent land uses. The standards in most cases are reasonably precise, with the exception of the parking standard. The standards were based on a circuit court ruling on a local keyhole controversy between a lake association and a developer. These standards however, do not clearly relate to the ability of a lake to accommodate increased surface use by a keyhole development. The frequent application of these standards to keyhole development proposals on a small lake would result in substantially different lake impacts than on a larger lake. Nevertheless, compared to all of the above regulatory approaches, this is a liberal keyholing provision that would permit some funnel lots to be established.

The **Lake Du Flambeau Twp. Ordinance** focuses on the access aspect of a keyhole lot rather than their recreational use as the basis for the regulation. It uses a sliding scale approach, and includes a detailed set of requirements for "buffering" along the sides of the access strip. The purpose of the buffer is to minimize the impacts of lake access by keyholing residents on neighboring properties. This buffer is different than those used in several of the other ordinances which are focused on maintaining a greenbelt, or natural strip along the waterfront.

The **Otsego County** approach sets up a rigorous formula for calculating the amount of lakefront open space that must be provided for a wide range of residential and commercial (hotels) keyhole operations. However, specific limitations on dockage and surface water use are not included. This regulation is clearly focused primarily on large keyhole development projects. A lengthy intent and definitions section is included.

Carrying Capacity Approach: Subsection 7.542 of the **Putnam Township Ordinance** has many of the same features identified in prior ordinances, including permitting keyholing under certain conditions and allowing (a liberal) one boat mooring facility for each dwelling unit. However, it is unique in that the ordinance attempts to protect over-use of the lake by imposition of a "load limit factor". This is a mathematical formula that, in effect, attempts to establish the "load limit" or "carrying capacity" of the lake. If this factor is already exceeded by existing development, or would be by the addition of the proposed keyhole development then the project would not be approvable (in theory even a single family cottage should not be approved if the lake load limit were exceeded by existing development on the lake, but a single family use would not trigger review under this provision). The formula would be quickly exceeded on small lakes. Thus to some extent, it gives an illusion of permissability.

This formula was prepared based on research by university professors on a lake in a township near Putnam. (Correspondence from William Brown, Principal Planner, Livingston County, December 14, 1984 to author.) Intuitively this approach makes more sense than trying to apply a broad set of discretionary standards. However, it is arbitrary in that it is based on research on another lake, and is not directly tied to a study showing the relevance of its factors to the lakes in this township. (Yet it is no more arbitrary than any of the frontage requirements used in the above local ordinance examples.) It is an attempt to use a surrogate measure that embodies a lot of factors in a relatively simple standard. For adminstrative simplicity, this is certainly desirable. But is it reasonable? Is it complete? Could it withstand the scrutiny likely to be placed upon it in adverse litigation? Without a detailed, lake specific study, or a state statute setting forth that standard, it is not at all certain that it could withstand judicial scrutiny. But it is certainly an idea worth exploring further. It is the only example that attempts to measure the carrying capacity of the lake as a function of both existing land uses and surface water users.

OBSERVATIONS: These ordinances present a wide range of local approaches to regulating (and in some cases prohibiting) keyhole development. They all recognized that access, and to a lesser degree the recreational use/open space aspects of the keyhole lot, is the "window of vulnerability" which must be attacked to successfully achieve the regulatory objective. When contrasted with the large minimum lot sizes in the model Minnesota and Wisconsin ordinances however, the Michigan restrictions in particular, don't look so tough. Perhaps the large minimum lot sizes is the reason why fewer keyhole development proposals have been presented in those states.

The principal basis for the large lot sizes is the desire to protect water quality from potentially faulty septic tanks. There is a logical, practical basis for these minimums, related to the tile field needs and soil characteristics of typical lakefront lots. The leap from this rational lot size basis to regulating a land use (keyhole development) to achieve surface water benefits, is however, considerable. Where is the rational nexus? A large variety of factors related to current and potential future use of the lake and of the land in the watershed should be considered in order to rationally develop meaningful plans an regulatory standards. The need for an inland lake management plan is strongly suggested. A look at court decisions interpreting "reasonable use" of surface waters is another source of assistance in rationally fashioning an effective solution to keyhole development.

(The concluding portion of this article will be presented in the Spring issue of Waterworks.)

Table I: Local Keyhole Ordinances

RESORT TOWNSHIP (EMMET COUNTY)
ANTI-FUNNELING ORDINANCE - 1979

Findings: It is hereby found that funneling, as hereinafter defined, is inimical to the public health, safety and welfare and constitutes an improper use of land and natural resources because it causes overcrowding of lakes, streams and lands adjacent to them, contributes to the pollution and degradation of public waters, creates hazards to life and property by increasing the risks of boating and other

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Commissioner Williams' Speech

Delivered by
LANGDON MARSH
Executive Deputy Commissioner
at the Liming Conference, October 30, 1985
Albany, New York

I would like to take a minute to put this conference in perspective. First, we're here because acidic deposition resulting from emissions of sulfur dioxide and nitrogen oxides causes detrimental effects on surface water quality. In New York, these effects have been most completely described for the Adirondack Region, but we have recently documented sensitive regions with acidic waters in other areas such as the Hudson Highlands and Central Catskills.

Although most attention has been focused on acid lakes, please remember that many stream ecosystems in sensitive areas have also been affected. Some streams are chronically acidic, and toxic acid episodes occur in others after major snowmelt or precipitation events.

Excess acidity of lakes and streams affects ecosystem components at many trophic levels. From a recreational standpoint, the most important impact is the loss of sport fishing opportunity in lakes and streams which are too toxic to support sport fish populations. This conference concerns the use of a tool to treat this aspect of acidification damage at the impact site rather than at the source. Chemical neutralization of excess acidity using some basic substance seems like an obvious answer to the problem. I am sure that during the course of this conference, it will become just as obvious that liming acidic waters must be considered in relation to a complex matrix of ecologic, technical, logistic, and fiscal considerations based on principles of good resource stewardship.

We in New York know this because we have had experience in liming. We began an experimental program in 1959 in an attempt to increase fish production, primarily in dark water bog ponds in the northern Adirondacks. During the course of this experiment over the next five years, DEC limed 23 different small waters in that area at a variety of rates, with frequent retreatment of several waters. We learned that we could increase the pH of acid waters using a hydrated lime, but we also learned that frequent retreatment was necessary to prevent reacidification, and that variability in responses of treated lakes necessitated annual monitoring of water chemistry in order to know when retreatment is necessary.

In the early 1960's, we also began treating formerly productive brook trout ponds in the western Adirondacks. We didn't know why these ponds had become so acidic that they wouldn't support brook trout, but it soon became clear that we could neutralize the acidity of these ponds using hydrated lime and agricultural limestones. Most importantly, we found that we could produce acceptable conditions for brook trout survival and preserve the opportunity for a fisherman to visit a remote Adirondack pond and catch the prized brook trout. However, we once again saw that frequent retreatments were necessary to maintain acceptable pH in these waters.

Since 1983, DEC's Division of Fish and Wildlife has operated a liming program under more formalized guidelines to prioritize treatments for wise use of funds and to minimize the potential for adverse unanticipated effects of a long-term liming program.

We have limited this program to small acidic ponded waters with low flushing rates. Only waters which constitute special recreational or biological resources will be treated. These include waters which must be treated to maintain especially valuable genetic strains of fish which must not be lost or ponds which support threatened or endangered fish. Other waters which are treated are particularly important recreational fisheries such as acidic ponds near campgrounds, roads, or other high use areas.

We have imposed these restrictions for two reasons: first, we can't afford to do much more; and second, we are not sure that a long-term regime of chemical treatment will not be accompanied by unforeseen adverse ecological effects.

Thus, we consider liming to be a useful management tool in carefully selected situations where its effectiveness is assured, and benefits justify the costs.

We can produce conditions favorable for brook trout. However, while is is clear that liming can produce benefits,

Black Fly Control

DEC's Region 5 is administrating a B.t.i. program in the Adirondacks for the third consecutive season this year. The program is based on the success of a 1983 study entitled "The Feasibility of Black Fly Control with Bacteria in the Adirondacks" by Daniel Molloy and Robert Struble from the Biological Survey of the State Education Department.

In the search for environmentally-safe methods to control black flies, the bacterium Bacillus thuringiensis variety israelensis (B.t.i.) has emerged as an attractive larviciding agent. Homeowners have successfully used Bacillus thuringiensis for years to control their insect garden pests, but the israelensis variety is a relatively recent discovery. This variety kills only certain types of flies, in particular black flies and mosquitoes, and is useless against garden pests. Current research findings indicate that, in contrast to the broad toxicity of many insecticides, B.t.i. is highly selective: when applied to streams (the breeding place of black flies), only one other type of insect, filter-feeding midges, is affected by the bacteria. Since the bacterium does not thrive in water, it eventually dissipates, with no known adverse affect on water quality, adjacent land, wildlife, or humans.

Because of its safety, effectiveness, and commercial availability, B.t.i. is already being aerially applied in a number of black fly control programs throughout the world. For example, the World Health Organization is currently involved in the treatment of 50,000 square miles in West Africa. Here in the United States, the major use of B.t.i. has been treatment of the Susquehanna River to control black flies in the Harrisburg, Pennsylvania area.

Pesticides control specialist Tom Martin, of DEC's Region 5, administrates the B.t.i. program from the Warrensburg office. He explained that in order for a municipality to participate in the program it must be willing to initiate a stream survey and be able to meet a 12 mile minimum treatment limit. Each program must be certified by DEC and a $50 permit fee paid. Martin says that the only time that an Adirondack Park Agency permit is needed is when proposing to treat mosquito larvae in wetlands.

Average program costs are $1,000 per square mile the first year and $500 per square mile each year thereafter. Each municipality is responsible for assessing the success of its own program. The Towns of Franklin, Indian Lake, Chester and Horicon took part in a community B.t.i. program in 1985 and it is expected nine Adirondack communities will apply this season.

Lake Associations to Assemble

Lake and watershed management techniques provide the focus for the 1986 New York State Lake Associations Conference. The Federation will once again sponsor the event at Colgate University, in Hamilton, New York, on the weekend of June 6-8.

The conference has become an annual opportunity for lake association representatives to gather from all corners of the state to examine and review the current condition of lakes in New York. It is the time for meeting with new and old acquaintances, reaffirming the goals of the Federation, sharpening lake management skills, and debating the many environmental dilemmas that affect water quality.

The event drew 120 persons from 42 lakes last year and it is hoped that this year the conference will attract more representation from the Adirondack and downstate regions.

On Friday evening, an informal session has been organized to give participants a chance to openly exchange their ideas and individual concerns about issues such as: zoning and land use development; recreational carrying capacity of lakes; conflictive and incompatable uses on the lake surface; and boat speed, density and noise problems. Throughout the weekend, commercial and educational displays will be set up at the conference location.

The Cazenovia Lake Association and the Lake Moraine Association will co-host the conference and a wine and cheese party for participants on Saturday evening. All conference inquiries should be made to chairman Mark Randall at (315) 824-2013. Programs with a complete agenda and registration forms will be mailed out on April 1 and May 1.

— "Commissioner's Speech" continued from page 5

we believe that it is far more appropriate to solve the acid deposition problem by an effective, consistent national program of reduction of emissions of sulfur dioxide and nitrogen oxides.

In 1984, the New York State Legislature passed and Governor Cuomo signed a State Acid Deposition Control Act which mandates a program of emissions controls tailored to provide acidic deposition reductions in sensitive areas where they are needed most. We have established an environmental threshold value for wet sulfate of 20 KG/HA/YR, and we are in the process of examining effects of nitrates and designing an appropriate control program for nitrogen oxides.

We have officially designated sensitive areas including most of the Adirondacks, the central Catskills and the Hudson Highlands. We have determined New York's proportion of emissions affecting these areas and we have initiated the first step of a program to reduce these emissions. However, in the western Adirondacks, New York State contributes only 17 percent of the total deposition. Therefore, the sad fact is that this is a problem we cannot solve alone. We need help from our neighbors and a reasoned federal legislative response is the most appropriate way to craft a fair program leading to an ecologically sound solution. We note with appreciation that our neighbors in Quebec and New Hampshire have also initiated emissions control programs, and that Massachusetts, Wisconsin and others are considering their own regulatory programs. We support these additional steps and hope that they are followed by an effective national solution.

What we are asking for is a simple good neighbor policy, When a reservoir floodgate has been left open and the resulting flood has destroyed downstream structures and threatens other property:

- You don't conduct basic research on basic hydrologic processes or mechanisms of flood damage;
- You don't measure the amount of water left in the reservoir to predict the probable duration;
- You don't inventory the downstream area to compute the number of additional structures at risk; and
- You don't tell the affected people that they can't use the downstream area.

NO. YOU SHUT THE FLOODGATE AND CLEAN UP THE DAMAGE.

The problem with liming is that it's a temporary treatment of symptoms. It works to that extent. Fish can survive in limed waters which were toxic prior to liming. It is a useful protection and restoration technique.

However, liming ponds does nothing for acidified headwater stream systems, and there are a lot of them.

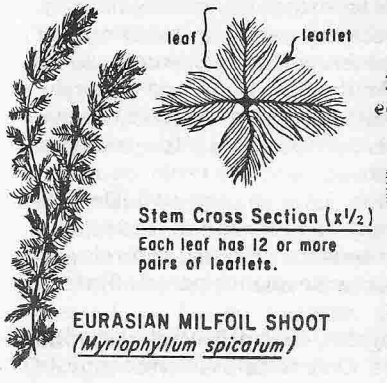
Liming ponds does not protect or restore natural terrestrial ecosystems or man-made structures that have been damaged. Liming ponds is not the answer for the forest damages we are seeing.

A liming program necessitates frequent monitoring and retreatment and may be accompanied by serious side effects. It is also a very large scale operation. This summer, the Electric Power Research Institute limed Woods Lake located in Herkimer County. It took 35 tons of lime to neutralize this 70 acre lake. To be effective, a retreatment of this magnitude will be required every two to three years until emissions controls are effective. Frequent water chemistry monitoring must be conducted to determine when retreatment is necessary.

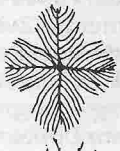
A program which would treat impacts in all affected lakes and streams would involve huge administrative and logistical costs in addition to actual treatment costs.

For these reasons, liming cannot be considered an appropriate long-term solution to the acid deposition problem.

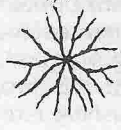
Nevertheless, liming will continue to be used as a short-term management tool in **selected** situations. It is important to more clearly understand the benefits and drawbacks of the technique and to critically examine alternative methods of neutralization of acidic surface waters.



Other similar aquatic plants which are easily mistaken for Eurasian milfoil:



NORTHERN MILFOIL (x1/2)
(Myriophyllum exalbescens)
Each leaf has less than 12 pairs of leaflets.



COONTAIL (x1)
(Ceratophyllum demersum)
Each leaf is irregularly shaped and branches only once or twice

Plant Threatens Lake George

A fast-growing plant is posing a major threat to the waters of Lake George, and the Lake George Association is planning to spearhead a fight against the invader.

Myriophyllum spicatum, also called milfoil, has invaded the lake waters. "It poses a tremendous threat to Lake George," Dr. Charles Boylen, director of Rensselaer Polytechnic Institute's Fresh Water Institute (FWI) said.

According to Mary-Arthur Beebe, executive director of the Lake George Association (LGA), the LGA and the Lake George Association Fund will work through education and action to deal with the problem.

The fund will print a pamphlet to make citizens aware of the plant and its threat. "It will point out how problematic the weed is," Mrs. Beebe said.

The LGA will initiate an action program with state and possibly county and town governments to develop an emergency strategy. "We must be prepared to act by the time the ice goes out of the lake," Mrs. Beebe said.

"The problem can become so widespread so fast that not only do we need to act immediately, but if we are to preserve the tourist accommodation (industry), we need all of the state resources," she added.

Milfoil has established itself in the lake in the last two years and can be found in Huddle Bay, Dunham's Bay and the basin area near the docks used by the Warren County Sheriff's Department.

The plant, when established, grows thickly and discourages boating, swimming and fishing in those areas.

"It is an infectious weed and is totally analogous to a disease (with) the root of the infection spreading from one body to another," Boylen said.

The plant, which is now found in Saratoga Lake, portions of Lake Champlain and in smaller area lakes, is transported from another location by becoming attached to a propeller of a boat. Since most boaters clean off their boats at their next stop, the seed of the mature milfoil plant germinates in the new location.

Also, when the plant is cut because of boats becoming entangled in the beds, further root growth is stimulated and the clippings can be spread from bay to bay.

"There are a multitude of favorable habitats within the 32 miles of Lake George," Boylen said. Milfoil favors organically rich sediment, rather than sand and pebble soil. The rich sediment is found in shallow lakes where fertilizer, grass clippings and improperly functioning septic tanks are located.

"It won't take over in an isolated bay where there is no human activity," Boylen added. It can be found in waters from one to ten feet deep.

Milfoil competes so effectively that it consumes all living space in the water. It dies later in the season, creating additional sediment. This decomposition depletes oxygen supplies in the waters.

Boylen said the plant has a negative effect on fish, such as bass, pickerel and pike, that spend their time in warm waters. The fish sense the lack of oxygen and won't use the areas for habitation and spawning.

Eradication and control is difficult and the educational campaign is important. "We need to mount a public awareness and educational program before the end of the next growing season when we anticipate having fruits (seeds). We don't feel we can afford to wait for another full growing season," Boylen said.

Boylen "hopes to play on people's emotional attachment to the lake" to help solve the problem. He urges boaters to clean off their props and place plant residues in appropriate containers.

If it is growing around docks, repeated cleaning of the area will help. "It's just like weeding the grass of dandelions," Boylen said.

He added that each approach to eradication has deficiencies.

Herbicides create side effects for those who drink the lake's water. Harvesting by machine creates more problems since those plants not totally removed will grow.

An aqua screen, which allows sediment to breathe, but won't allow plant growth, is expensive and difficult to settle in the bottom of the lake. If it were used in Huddle Bay, the entire bay might have to be covered. "You're talking about hundreds of yards," Boylen said.

Dropping the water level of the lake so that the sediment freezes and kills the roots is not feasible.

Boylen said that verification of myriophyllum spicatum can not be absolute until it flowers in its third year. An American subspecies, exalbescens, is never weedy and is random and is not thought to be growing in the lake.

The plant was first introduced in Chesapeake Bay in 1940 from Europe and spread throughout the Northeast. In Europe it is typically not weedy and lives in harmony with other plants.

Reprinted from the Glens Falls Post-Star

Eurasian Milfoil

Eurasian milfoil can be recognized primarily by its whorls of four feather-like leaves. Leafed stems grow up from roots and branch several times near the water surface, forming a dense floating mat. The shoots near the surface frequently turn reddish in color. Dense Eurasian milfoil beds usually occur in water between three and fifteen feet deep.

As an "introduced" species (it is native to Europe and Asia), Eurasian milfoil has no natural controls on its populations in North America. Therefore, it has the potential for completely infesting lakes where it occurs. Native types of milfoils rarely attain such extensive growth. Eurasian milfoil grows and spreads extremely quickly. Unlike most aquatic plants which are usually associated with particular water qualities, Eurasian milfoil will grow readily in almost any type of lake. In addition, milfoil will grow on almost any bottom type: silty, sandy, or rocky.

The presence of Eurasian milfoil often brings a change in the natural lake environment. It usually out competes the more beneficial native plants. Since its growth is often dense, milfoil weed beds are poor spawning areas for fish. Dense stands of Eurasian milfoil seem to lead to populations of stunted fish, and wildlife, waterfowl, fish and insects rarely use it as a food source.

Eurasian milfoil reproduces almost exclusively by the breaking off of shoots which then drift away, sink, and grow roots. (Milfoil very rarely flowers and goes to seed.) This fragmentation occurs both naturally and as a result of human activity such as boating. A shoot fragment only a few inches long is capable of starting a whole new plant. Thus, Eurasian milfoil is easily spread from one lake to another by people or attached to boats and boat trailers.

What Can and Should We Do?

by JOHN LLOYD

Throughout New York State, and for that matter, the world, water pollution of wells, streams, ponds, lakes, and oceans is a concern of many people, and should be a concern of all people! It just isn't good enough to shrug our shoulders and say: Yes, it's those farmers putting too much fertilizer on their fields, or letting seepage from manure piles flow into the ground water; or, Look at those boaters and the trash they throw into our lakes and streams. Unfortunately, while we may be pointing fingers at others, we may have a septic system that is malfunctioning and letting contaminated effluent flow into ground water supplies.

As I indicated in an article in the Fall 1985 Newsletter, the evidence overwhelmingly shows that improper septic systems are the number one problem around many of our streams, ponds and lakes. If you are fortunate enough to be hooked into a municipal sewer system you are not directly causing sewage contamination. However, you still should exercise great caution to not do other things that may measurably affect the quality of the water nearby. Some people don't think and carelessly dump leaves and other material into lakes and streams. This is not as harmful as sewage pollution but it still does produce bad effects.

For now, I think it important to concentrate on sewage pollution. Since this is the number one problem in many lakes, and also since it is a problem that each of us has the ability to help solve. The following simple three step guide can help to significantly reduce pollution in thousands of lakes throughout our state:

1. Get your neighbors interested and involved in a campaign to clean up your lake. Many publications and speakers are available that can provide information and focus attention on the importance of clean water.
2. Develop a yearly procedure for testing and monitoring sewage pollution that is flowing into your lake. One excellent and relatively simple technique is to have an annual die testing program to examine all properties that directly border on the lake and on feeder streams.
3. For any properties that have septic systems that are causing pollution, assist the owner in securing information on how to solve the problem. It may be that the present septic system is totally non-funcitonal. In this case there is information available on what can be done and how much it will likely cost.
   The possible alternatives are:
   a. Put in a new conventional septic tank and leach field system.
   b. Then consider installing a water saver toilet that will significantly reduce the amount of water flowing into the system.
   c. Install a humus or composting toilet that does not need to be hooked into a septic system.

Even though there are some significant advantages in installing a composting toilet — relatively low purchase price, ease of installation, doesn't have to be hooked to a septic system — there are some other important considerations. The first, and by far most important, is to be sure that the unit has a large enough capacity to accommodate all of the members of the household plus the average number of guests that use the facilities. There are a number of different brands and capacity units that are available. (A number of these will be on display at the June conference at Colgate University.) Some of the smaller units sell for less than $1000, whereas the large capacity units sell for several thousand dollars.

If anyone decides to install a composting toilet then careful consideration has to be given to disposal of grey water. This includes dish water, bath water, cleaning water and all other water that contains soap, detergent and dirt. A well designed and adequate leach field is necessary to satisfactorily dispose of this contaminated water.

It would be great if there were a very simple and low cost method for solving this problem. There is nothing terribly complex, but it does require that people take an active interest in improving our lakes and ground water. This is a challenge all of us should accept — NOW!

Lay Monitoring

The status of the Citizens Statewide Lake Assessment Program remains unknown for the 1986 season. The program was given high marks by Governor Cuomo in his State of the State Address recently, but even with these words the funding for the C.S.L.A.P. is not assured until the State Budget is finalized in March. While speaking about the state's water resources, the Governor said, "there are over 7,000 lakes, ponds and reservoirs in the state, most of which are not monitored for water quality on a regular basis. I propose creating a program within the Department of Environmental Conservation to use trained volunteers to collect information on the state's water bodies. With this information, the department can more effectively manage and protect our invaluable water resources."

Last year the program was sponsored as a bill in the State Legislature by Senator Farley and Assemblyman Hinchey. Late in the session it passed the Senate but did not move from the Assembly Ways and Means Committee. At that point the bill appropriation had been marked down to only $20,000 which would not have been near enough to have initiated the full scale project. This season's program has actually been submitted under the DEC budget and has been presented as a part of the Governor's Executive Budget.

It is well accepted that if funded at a cost of $90,000 per year, there will be a ten to one cost benefit, since citizen volunteers will give free time, services, gas, oil and boat time. Initially, 25 lakes with lake associations have been selected to participate during this 1986 season. Many additional lake associations are awaiting the privilege of participating in this unique program.

Commissioner Williams has been a proponent of the Citizens Statewide Lake Assessment Program since its early design. Last fall he authorized the hiring of an individual on a temporary basis (until April 1986 unless new funds are appropriated) to work with the Lake Assessment Team in Albany specifically on the C.S.L.A.P. Currently, Scott Kishbaugh, hired in December, is developing a citizens guide to lake lay-monitoring which will serve as a tool for guidance and basic understanding of the sampling procedures. The program will be administrated by DEC and coordinated by the Federation of Lake Associations. Inquiries should be directed to Tracey Clothier, Project Consultant for the Federation, at (518) 668-9653 and Box 2300 RR#2, Lake George, New York 12845.

The Federation of Lake Associations

We are a coalition of organizations dedicated to the preservation and restoration of all lakes, ponds and rivers throughout New York State. We welcome and encourage the memberships of lake associations, property owner groups, fish and game clubs, corporations and individuals. The Federation is incorporated under two mirror organizations with the same officers and board of directors.

The Federation of Lake Associations, Inc. purposes are:

* to provide a clearinghouse of environmental information and expertise in all matters pertaining to lake management.
* to promote by education the wise use and appreciation of the lakes in New York State.
* to provide a pool of technical knowledge and expertise to advise and assist member associations and individuals.
* to establish liaison with other environmental groups and agencies.
* to provide a coordinating structure for lake-related research projects.

The Federation of Lakes, Inc. purposes are:

* to monitor and report to members on legislation and administrative actions affecting the waters of New York State.
* to support and lobby for legislation and administrative actions which promote the sound management of the waters of New York State.

MEMBERSHIP CATEGORIES

Associations with up to 99 members ..... $30.00/yr.
Associations with 100 to 199 members ..... $50.00/yr.
Associations with 200 or more members ..... $100.00/yr.
Individual.....$15.00/yr. Corporate ..... $100.00/yr.

Membership dues over $5.00 are tax deductible contributions to the Federation of Lake Associations, to be used for educational, scientific and public information activities of the Federation.

APPLICATION FOR MEMBERSHIP

THE FEDERATION OF LAKE ASSOCIATIONS, INC., 273 HOLLYWOOD AVE., ROCHESTER, NY 14618

Type of Membership (please check) ☐ Association ☐ Individual ☐ Corporate

Association Name: _____

Assoc. Address: Street _____ City _____ State _____ Zip _____ County _____

President/Contact Person: _____

Summer Address _____ Winter Address _____

Summer Phone ( ) _____ Winter Phone ( ) _____

— "Inland Lake" continued from page 4

similar accidents, adversely affects the recreational experiences of both riparian owners and the public, and adversely affects property values of shoreline properties located near funnel developments.

It is the declared purpose of this Section to protect the health, safety and general welfare of the citizens of Resort Township by prohibiting funneling, as hereinafter defined, on inland bodies of water and waterways in the unincorporated areas of the Township. It is the intent of this Section:

1. To carry out the purposes of the Township Rural Zoning Enabling Act (Act 184 of Public Acts of 1943), Environmental Protection Act (Act 127 of Public Acts of 1970) and to regulate the proper use of natural resources, within the Township.
2. To prevent the overuse and misuse of water resources within the Township, particularly by boating traffic and similar impacts on inland waters.
3. To protect the quality of inland waters by limiting uses of the water that tend to pollute them.

Nothing in this ordinance shall be construed as depriving any riparian owner of any natural inland body of water or waterway of any riparian rights.

Funneling Defined: Funneling is defined as the use of an inland waterfront property, parcel or lot as common open space for waterfront access for a larger development located away from the waterfront. More particularly, funneling includes, but is not limited to, the use of a waterfront property, parcel or lot for waterfront access by the owners, lessees, or licensees (or by members of the family or the occasional guests of any such persons) or any of the following types of property:

1. Non-waterfront property under a separate legal description on the County tax roll or property acquired under a separate deed on file with the County Register of Deeds, as of the effective date of this ordinance.
2. Non-riparian property, as of the effective date of this ordinance.
3. Property separated from shoreline properties by a public road.

Funneling shall be deemed not to include any public use of a public park or a public access site provided or maintained by any unit of State, county or local government.

Prohibition on Funneling: Funneling is prohibited in the entire township. If any proposed use involves funneling or proposed funneling, said use shall not be permitted. (A Violations and Penalities Clause, and Effective Date Clause complete the Anti-Funneling Ordinance).

FENTON TOWNSHIP (GENESEE COUNTY) -
Amendments to Zoning Ordinance - 1971

Article VIII, Section 8.08 and Article XII, Section 12.04: The following uses will not be permitted in R1-A, R1-B, R1-C or C districts:

A. Use of any waterfront property for the purpose of providing access to such body of water for nonriparian property owners.

ROSE TOWNSHIP (OAKLAND COUNTY) -
Amendments to Zoning Ordinance - 1978 (3 of 5 parts reproduced)

Sec. 1724 Regulation of Water Access Lots

A. Regulation in Existing and Planned Residential Development

1. The use of any waters, steams, ponds, drainage ways of all types shall be restricted to that right of use enjoyed by the owner or occupant of a riparian parcel which is contiguous to the water and has riparian rights as of the effective date of this ordinance; provided, however, that if a riparian parcel is proposed to be used by persons other than the owner residing thereon or occupant residing thereon, for a park, beach, boat launch, picnic area or similar use for outdoor recreation, then in such event said use may be made of said riparian parcel only when permitted by the Township Planning Commission as a Special Land Use as provided for in Article XVIII of the Zoning Ordinance.
2. The Township Planning Commission shall take into consideration, among other considerations as explicitly spelled out in SEC. 1800, and following, that such use does not impair the natural appearance of the said land or overcrowd the parcel or water surface or tend to produce unreasonable noise or annoyance to surrounding properties, that the proposed location, does not pose substantial environmental hazards, and that all other factors considered inlight of the proposed use and the specific characteristics of the property and the surroundings are favorable towards the proposed use; and that no use shall be made of any land or water for boat liveries or public or commercial beaches or recreational use operated for profit.
3. Any dredging and/or filling of land and/or water areas shall be permitted only after review and approval from the Michigan Department of Natural Resources, the Oakland County Drain Commissioner and the Rose Township Planning Commission.

MARION TOWNSHIP (LIVINGSTON COUNTY)

Marion Twp. considered, but did not adopt the following zoning provisions. Adoption was terminated when the Michigan Attorney General issued an opinion against the legality of the proposed ordinance (OAG No.6070, May 25, 1982).

Article VI, Section 6.11 Use of Waterfront Property: A riparian proprietor or owner of waterfront land shall not grant an easement, right of way or license to any person or legal entity for the purpose of providing access to a natural watercourse without first obtaining a conditional use permit therefor.

Article XIII C. Factors to be Considered upon Application for Conditional Use of Riparian or Waterfront Property for Access to a Natural Body of Water: The Planning Commission shall consider the following factors in evaluating the request:

a. the diminution in the quantity, quality and level of the natural body of water.
b. the alteration in the flow of the natural body of water.
c. the expressed purpose for the request, including its extent, duration, necessity and its application.
d. the nature and size of the natural body of water.

— continued on page 10

— "Inland Lake" continued from page 9

e. the uses to which the natural body of water is put.
f. the extent of injury to riparian proprietors as it relates to fishing, swimming, boating and other recreational activities, or otherwise.
g. the proposed changes to the natural state of the body of water.
h. the necessity for the proposed use.
i. the interests of the public in fishing, navigation, conservation and recreation.
j. the comparative effects of the benefit to the applicant as opposed to detriment to riparian proprietors.

HAYES TOWNSHIP (CHARLEVOIX COUNTY)
ZONING AMENDMENT - 1979

Section 5.13 - Shoreland Protection Strip: No building or structure, except docks or launch ramps, shall be erected closer than fifty (50) feet from the shoreline at normal high water level of any lake, stream or creek within the township. In addition, a strip on land thirty-five (35) feet wide from the normal high water mark bordering the body of water shall be maintained in trees and shrubs in their natural state. Trees and shrubs may be pruned, however, to afford a view of the water.

A. Limitatin of Boat Dockage: Not more that one (1) mooring, slip or dock space for each fifty (50) feet of lake frontage may be provided for mooring or dockage of boats in any zoning district in the Township.

B. Limitation of "Funnel Development": Any development in any zoning district which shares a common lakefront or stream area may not permit more than one (1) single family home, cottage, condominium or apartment to the use of each fifty (50) feet of lake or stream frontage in such common lakefront or stream area as measured along at the water's edge of normal high water mark of the lake or stream. This restriction is intended to limit the number of users of the lake or stream. This restriction is intended to limit the number of users of the lake or stream frontage to perserve the quality of the waters, and to preserve the quality of recreational use of all waters within the Township. **This restriction shall apply to any parcel regardless of whether access to the water shall be gained by easement, common fee ownership, single fee ownership or lease.** The Zoning Board of Appeals may, upon petition and after notice and hearing as provided in Article VII, vary or modify the strict application of this provision if it shall determine that undue hardship will otherwise result and the spirit and intent of this Ordinance will be preserved by such variance or modification, impose such conditions upon the use of the lands and lakefront or streamfront as it shall deem necessary to preserve the spirit and intent of this ordinance.

WISCONSIN DNR INLAND LAKE USE TASK FORCE - SUGGESTED KEYHOLE REGULATION - 1980

All private lake access points providing access from more than two dwelling units of back lots which do not front directly on the water or from more than two dwelling units on lots which do not meet the miniumum water front lot width of this (county) ordinance are special exceptions. Such private access points should have a miniumum of —(40) feet in width at the ordinary highwater mark and shall provide an additional —(7.5) feet of width for each additional dwelling unit. The minimum width for private access points for more than 10 dwelling units shall be established by the administrative agency granting the special exception, but shall in no case be less than 100 feet in width. In addition, the agency may attach conditions governing on-land storage of boats in length, types and other specifications for piers, docks, and wharves. The agency shall consider the size, shape, depth, present and potential use of the lake and the effect of the private access on public rights in navigable waters.

WEST BLOOMFIELD TOWNSHIP (OAKLAND COUNTY) - 1977 - Amendments to Z.O. (only 1 section reproduced)

Section 1613 Waterfront Use: I. Where a parcel of land contiguous to a body of water is presented for subdividing, a recreational park bordering on said body of water may be dedicated for the purposes of swimming and picnicking, the privileges of which are to be reasonably enjoyed by the owners and occupants of lots included in any plat or plats recorded within said parcel and only such owners and occupants provided that said recreational park is dedicated at the time for the use of owners and occupants of lots contained in such a recorded plat or plats as least twenty (20) lineal feet of water frontage and one-hundred fifty (150) feet in depth shall be reserved therein for the rights of each lot of the size required by this ordinance; provided, however, that no recreational park so created shall have less than three-hundred (300) feet of water frontage. The launching of boats from said recreational park shall not be permitted nor shall boats be allowed to be docked at such recreational park.

TEXAS TOWNSHIP (KALAMAZOO COUNTY) - 1981
Amendments to Zoning Ord. & Subdivision Ord.

Sec. 9.9 Riparian Lot Use Regulations (Zoning): In all residential districts where a vacant parcel of land is contiguous to a lake, river, stream, or pond, such vacant parcel of land may be used and developed as a recreational park for the purpose of gaining riparian access and enjoyment to said body of water for the owners and occupants of two or more residential lots of structures within, but not exceeding, one/quarter mile of such vacant parcel of land, subject to the following conditions:

1. Where applicable, there shall be full compliance with the terms, conditions, and limitations imposed by the Texas Township Subdivision Control Ordinance.
2. That said vacant parcel of land shall contain a lot depth of at least 150 feet and at least 20 lineal feet of water frontage for each dwelling unit to which said privileges are extended or dedicated.
3. That in no event shall such vacant parcel of land have less than 300 lineal feet of water frontage regardless of the number of dwelling units to which such privileges are extended.
4. That in no event shall such vacant parcel of land consist of a swamp, marsh or bog as shown on the most recent United States geological survey maps, or man-made canals.
5. That in no event shall the launching of boats or the construction or docks therefrom be permitted from any such vacant parcel of land.

From the Texas Township Subdivision Ordinance

4. It shall be unlawful to offer existing or potential buyers of nonriparian lots riparian access to any body of water as a condition or term of sale except as permitted in this subsection. Where a parcel of land contiguous to a lake, river, stream, or pond is presented for subdividing under the provisions of this ordinance or where lake access is offered to potential purchasers as a condition or term of sale of any lot situated within an existing or proposed subdivision, a recreational park bordering on said body of water, the privileges of which are to be reasonably enjoyed by the owners and occupants of lots included within the plat only subject to the following conditions and limitations:

A. Said recreational park is dedicated at the time of recording of said plat or subdivision for use solely by the owners and occupants of lots contained within said subdivision.

B. That said recreational park shall contain at least 20 lineal feet of water frontage for each lot and owner thereof to whom said privileges are dedicated and the depth of the park shall not be less than 150 feet.

C. That in no event shall said recreational park have less than 300 lineal feet of water frontage regardless of the number of lots to which such privileges are extended. There shall be no full or part-time residence in this park.

D. That in no event shall the frontage used as a recreational park as providing herein consist of a swamp, marsh, or bog as shown on the most recent United States geological survey maps, or man-made canals.

E. That in no event shall the launching of boats or the construction of docks therefrom be permitted from any recreational park.

F. That in no event shall any such recreational park be developed as provided herein unless the same is part of a recorded and developed subdivision or plat.

G. The title to said recreational park shall remain with the plat proprietor or, in the alternative, title to the same may be conveyed to one grantee only consisting of an individual person, a husband and wife jointly, a partnership, corporation or association. The purpose of this provision is to prevent conveyances of undivided interests in said recreational park so as to facilitate real tax assessments.

EMMET COUNTY - 1982 - Amendments to Zoning Ord.

To add the following keyhole development controls to the RR-1 and RR-2 Recreational Residential Districts.

Section 601. Principal Uses Permitted Subject to Special Conditions: The following uses shall be permitted upon approval of the Planning Commission subject to the conditions herein imposed for each use, the Conditional Review Standards in Section 2004, and the approval of the Site Plan:

4. Private, semi-private, and other non-public recreation lands and/or facilities, subject to findings that the uses are compatible with the surrounding residential area, the uses respect the environmental qualities of the site, and no inordinate obstructions to scenic views are established. Recreational uses permitted herein include parks, playgrounds, and common access sites. No such facilities shall have a commercial appearance or be of a commercial character.

For recreational uses defined in this Section which have inland lake frontage, limitations on the extent, number and location of uses or facilities shall be established as follows: Camping: Not permitted except as an accessory use to a larger resort complex as mey be permitted by prevailing zoning regulations. Vehicle Parking: Permitted only as necessary to afford a reasonable level of access convenience for the type of uses approved per the Site Plan, and when in scale with uses on adjacent properties. Boat Docks: 1-per 150 feet of horizontal lot width (not shoreline distance). Location to respect swimming beaches and docks on the same property or on adjoining properties. Boat Slips/Moorings: Not more than three motor powered craft per 150 feet of horizontal property width, but not more than fifteen (15') power craft. No facilities for launching power craft from the site shall be permitted. Swim Raft: One (1) raft up to 150 square feet in floor area per recreation or park site. Recreaton Apparatus: As approved per site plan, but not in a required setback or greenbelt area. Club House/Gazebo: Only as an accessory use to a larger development and when there is at least 600 feet of horizontal lot width, minimum 150 feet of setback from any property boundary, but only for the exclusive use of occupants and their guests.

These provisions shall NOT apply to accessory shoreline recreational uses on single lots serving individual occupant families.

OTSEGO COUNTY ZONING ORDINANCE - Portion of Article 15 (intent, definitions and site plan review procedures omitted) - 1983

Section 15A.2 Site Design Standards: The following standards shall be used for development and use of non-public lakefront access sites. These standards do not preclude, and are in addition to, standards set forth by the zoning districts established and other Articles contained within this ordinance.

S-1. There shall be a minimum setback line of 235 feet, as measured from the ordinary high water mark, landward, at 90 degrees and/or radial to the shoreline, to any property line, dwelling unit or room. (Refer to Rule 3 for increase of setback line).

S-2. There shall be a minimum of 160 feet, as measured from the ordinary high water mark, landward, at 90 degrees and/or radial to the shoreline. This shall be the minimum depth of open land area.

S-3. The area between number 1 and 2 of this section, may be used as a parking area, as required in Section 15A(6).

S-4. The following components, equations and rules shall be used in determining the minimum open land area in square feet, minimum lake frontage in linear feet, and maximum number of dwelling units or rooms to utilize the non-public lakefront access site.

Formula Components

A-number of dwelling units, condominium dwelling units and motel/hotel rooms.
B-8,000 square feet (8,000 sq. ft. is the minimum amount of open land area, per dwelling unit or room).
C-50 feet (required amount of lake shoreline, per dwelling unit or room).
D-total amount required of lake shoreline in linear feet.
E-total amount required of open land area in square feet.

Rule 1: In instances where the number of dwelling units or rooms is known, the following equations shall be used to determine minimum amount of open land

— continued on next page

Welcome to New Members

Welcome to the following new members:
Lake Kiwassa Shore Owners Association
Fort William Henry Corporation
John Rosenthal
Scott D. Sherwood
Allied Biological Inc. of New Jersey
John H. Peverly
Edwin C. Dreby, III
Robert Canfield
Michael C. Gann

The membership is currently made up of 104 lake associations, 8 corporations and 35 individuals.

"Perhaps what moves us in winter is some reminiscence of far-off summer . . . What beauty in the running brooks! What life! What society! The cold is merely superficial; it is summer still at the core, far, far within."

— Henry David Thoreau

— "Inland Lake" continued from page 10

area in square footage (E), and the minimum amount of lake shoreline in linear feet (D). Equations: A x B = (E) A x C = (D)

Rule 2: In instances where the amount of **open land area** (square footage) and lake shoreline (linear feet) is known, the following equations shall be used to determine the maximum number of dwelling units or rooms (A) permitted to use the **open land area**. The lesser of either equation shall be used as the maximum number of dwelling units or rooms permitted.

$$\text{Equation: } \frac{D}{C} = (A) \qquad \frac{E}{B} (A)$$

Rule 3: In instances where a lakefront access site is a combination of open land area (S-6) and Wetland (S-7), the setback line as in (S-1) shall be increased in the following manner.

$$\text{Equation } \frac{(A \times 11{,}750 \text{ sq. ft.}) + (\text{Wetland sq. ft.})}{(A \times C)} = \text{setback line (ft.)}$$

S-5. When determining the minimum square footage of open land area (S-6) per dwelling unit or room, it shall not be permitted to include Wetlands (S-7) (Refer to Rule 3).

S-6. **Open Land Area** shall be defined as land which is not identified as Wetlands and may be graded and/or filled and maintained in accordance with provisions set forth in "Soil Erosion and Sedimentation Control Act 347 of 1972, as amended". Such grading and filling shall not commence prior to approval of the Otsego County Enforcing Agency (Otsego County Zoning Administrator). Furthermore, the **open land area** shall be unobstructed by structures/building, unless permitted by the Planning Commission by the review procedures set forth in Article 15A.3.

S-7. **Wetlands** shall be defined as land characterized by the presence of water at a frequency and duration sufficient to support, and that under normal circumstances, does support **wetland** vegetation or aquatic life: and is commonly referred to as a Bog, Swamp, or Marsh, and is contiguous to an Inland Lake. Furthermore, these wetlands shall not be disturbed for any purpose, unless prior approval is granted by the State Enforcing Agency (DNR) of Public Act 203, of 1979, known as the Goemaere-Anderson Wetland Protection Act.

LAKE DU FLAMBEAU TWP. (Vilas County, Wisconsin)

Section 6. Access Provisions (No provision in County Ordinance.):

I. As used in this section, "offshore land or lands" shall mean parcels of land of any size, whether or not improved and whether or not subdivided, or platted which do not abut the high water shoreline of any lake or the shoreline of any navigable stream; and, in additon, shall also mean any lands lying more than 200 feet distant from the high water shoreline of any lake and/or the shoreline of any navigable steam, whether or not such land is part of a parcel abutting upon any such lake or stream.

2. As used in this section a "dwelling unit" shall mean a family dwelling designed for use by only one family or occupant, whether for seasonal, all season, temporary or other use. (See Lac Du Flambeau Ordinance No. 77-1).

3. As used in this section, the term "access strip" shall mean a parcel of land abutting both offshore land and a lake or stream and used or intended to be used for providing access by pedestrian or vehicular traffic to and from such abutting offshore land to and from such abutting lake or stream.

4. As used in this section, the term "buffer strip" shall mean a parcel of land abutting such access strip on each side and on a boundary of such access strip which does not abut such offshore land and/or such lake or stream.

5. No land in the Town of Lake Du Flambeau shall be used or provided for use as access from offshore lands to a lake or stream unless the requirements hereinafter set forth are complied with:

a. For use of such access facility by five (5) or less dwelling units, there shall be provided an access strip with a water frontage of not less than 100 feet and a width of at least **100 feet** for its entire depth. In addition, there shall be provided a buffer strip on each of the sides of said access strip, which sides are not bounded by the water or offshore land, having water frontage of not less than 50 feet and width of each of said buffer strips of at least **50 feet for its entire depth.**

b. For use of such access facility by more than five (5) but less than ten (10) dwelling units, the water frontage and width of said access strip shall be increased by an additional 100 feet. (A Total access strip of 200 feet and two (2) buffer strips of 50 feet each is required).

c. For use of such access facility by more than nine (9) but less than twelve (12) dwelling units, the water frontage and width of said access strip shall be increased by an additional 40 feet. (A total access strip of 240 feet and two (2) buffer strips of 50 feet each is required).

d. For use of such access facility by more than eleven (11) but less than fourteen (14) dwelling units, the water frontage and width of said access strip shall be increased by an additional 30 feet. (A total access strip of 270 feet and two (2) buffer strips of 50 feet each is required).

e. For use of such access facility by more than thirteen (13) dwelling units, the water frontage and width of said access strip shall be increased by an additional 15 feet for each dwelling unit to be served in excess of thirteen (13). (A total access strip of 270 feet plus 15 feet for each dwelling unit to be served in excess of 13, and two (2) buffer strips of 50 feet each is required).

f. Such access strip shall be subject to all provisions of Vilas County Ordinance No. 72 and amendments and additions thereto now in effect, except as herein otherwise specifically permitted and particularly shall be subject to Sections 6.0, 6.1, 6.2 and 6.3 respecting tree cutting and bulldozing and Sections 7.0 and 7.1 respecting filling, grading and lagooning; but this enumeration is for the purpose of clarity and shall not diminish the applicability of any other sections of said Vilas County Zoning Ordinance now in effect.

g. Such buffer strips shall not be cleared by cutting of any trees or bushes, except dead or downed vegetation; and buffer strip shall not be included in computing width of area for the purpose of Section 6.2 of said Vilas County Zoning Ordinance; and such buffer strips shall not be used for any traffic, storage or other purpose of any kind.

h. No structures of any kind other than instructions and information signs shall be placed or erected on said access strip or on said buffer strips; except that one (1) pier or dock with slips for not more than six (6) boats may be placed on the waterfront of such access strip only, for each 100 feet of shoreline width of such access strip.

i. Other use may be made of the beaches along the waterfront of both access strip and buffer strips of boating, swimming, fishing and water sports and related normal, usual and customary activities.

j. **Conservancy Area - Access Facilities.** No wet lands, swamplands or marshlands or land lying in a conservancy area as provided by Sections 8.0, 8.1, 8.2 and 8.3 of the Vilas County Zoning Ordinance shall be used for any access strip but may be used for buffer strips.

k. **Plats - Public Way.** No plat or subdivision or dedication which provides for a public way, street, highway or road as an access facility to any lake or stream in said Town shall be accepted or approved by the Town Board of Supervisors of said Town. This provision shall not prevent the lawful establishment of or provision for public access facilities to any lake or stream by the town, county, state or federal government according to law.

PUTNAM TOWNSHIP (LIVINGSTON COUNTY)

Amendments to Zoning Ord. - 1981

Section 7.500 Private Sites Dedicated to Common Use

Subsection 7.542 Riparian Access for Non-riparian Lots.

If a riparian lot or parcel is zoned P-5, giving access for common use by non-riparian lots or parcels, the following constraints shall apply:

A. The deed to such lot or parcel shall specify the non-riparian lots or parcels which shall have right to its use.

B. Such riparian lot or parcel shall have a minimum frontage of one hundred and fifty (150) feet, a minimum area of thirty thousand (30,000) square feet, and its design, including docking and mooring facilities, shall be subject to Site Plan Review.

C. Not less than thirty (30) feet of riparian frontage shall be provided for each non-riparian lot or parcel so served. (Specifically, a lot held in common, with a frontage of one hundred and fifty feet, shall serve no more than five (5) non-riparian lots.)

D. A non-riparian lot or parcel which is occupied by more than one dwelling unit (duplex or multiple residence) shall require the provision of thirty (30) feet of riparian frontage for each dwelling unit occupying said lot or parcel. Duplexes or multiple housing occupying a riparian lot or parcel shall meet the same water frontage requirement.

E. Not more than one boat mooring for each dwelling u;nit served shall make use of the riparian facility.

F. The zoning of any additional lots or parcels, for P-5 Private Sites Dedicated to Common Use, is not permitted when the Load Limit Factor of the lake is exceeded.

Supsection 7.543 Load Limit Factor

The Load Limit Factor for any given lake is calculated by dividing the surface acreage of the lake by the number of "Lake Households" using the lake. The Load Limit Factor shall be not less than one (1) acre per "Lake Household". The number of "Lake Households" using the lake is the sum of:

1. The number of riparian property owner households, plus
2. The number of non-riparian property owner households using the lake with conforming and non-conforming status, plus
3. The maximum number of moorings authorized in Department of Natural Resources marina permits. This is put into household units by dividing the number by 1.2 plus
4. The average number of persons using public and private parks or camps with lake access. This is determined by taking the total number of persons using such facilities for the first and second Saturday and Sunday of the preceding July, and dividing by four. This is put into household units by dividing by the average size household of the Township, as indicated in the last United States Census. When the lake is located in more than one township, the average of the household sizes of the township will be used.

Notes and Publications

Acid Rain Slide Show — The Department of Environmental Conservation has an Acid Rain Slide Show available for use at meetings, conferences, workshops, or in the classroom. Information on how to obtain the slide show is attainable from Ray Bell (518) 457-2044.

Films Available — The following films are available free of charge to organizations in New York State:

AMERICA'S WETLANDS (28 minutes) — narrated by E.G. Marshall. An excellent film with beautiful photography examining our need for wetlands.

THE WAY OF THE TROUT (30 minutes) — A Trout Unlimited film depicting the life of a rainbow trout from egg to fisherman-savvy adult.

A TROUT STREAM IN WINTER (18 minutes) — Ice buildup and snowfall can change stream life drastically.

ACID RAIN — REQUIEM OR RECOVERY (25 minutes) — A major problem facing not only New York State, the Northeast and Canada but the world. This film was "banned" by the U.S. State Department.

WATCHING WILD WINGS (28 minutes) — A Ducks Unlimited film narrated by Bing Crosby introducing waterfowl identification in the wild.

THE ADIRONDACKS — THE LAND NOBODY KNOWS (30 minutes) — A tour which captures the beauty of the six-million acre Adirondack Park.

A brochure with a complete listing is available by contacting: NYSDEC Film Loan Library, Room 516, 50 Wolf Road, Albany, NY 12233, (518) 457-3678.

The Federation of Lake Associations, Inc.
273 Hollywood Avenue
Rochester, New York 14618

Thank You — The Federation acknowledges and thanks the Lake George Association for the use of certain drawings, from the publication, Lake George . . . Ours to Preserve, which appeared in the Fall 1985 issue of Waterworks.

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1986 New York State Lake Associations Conference

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