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Sea Grant Laboratory

WATER ZONING:

THE MANAGEMENT OF SURFACE ACTIVITY
ON LAKES, STREAMS, RIVERS & BAYS

the University of Michigan Sea Grant Program · Shoreland Management Unit

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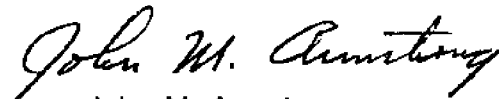
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FOREWORD

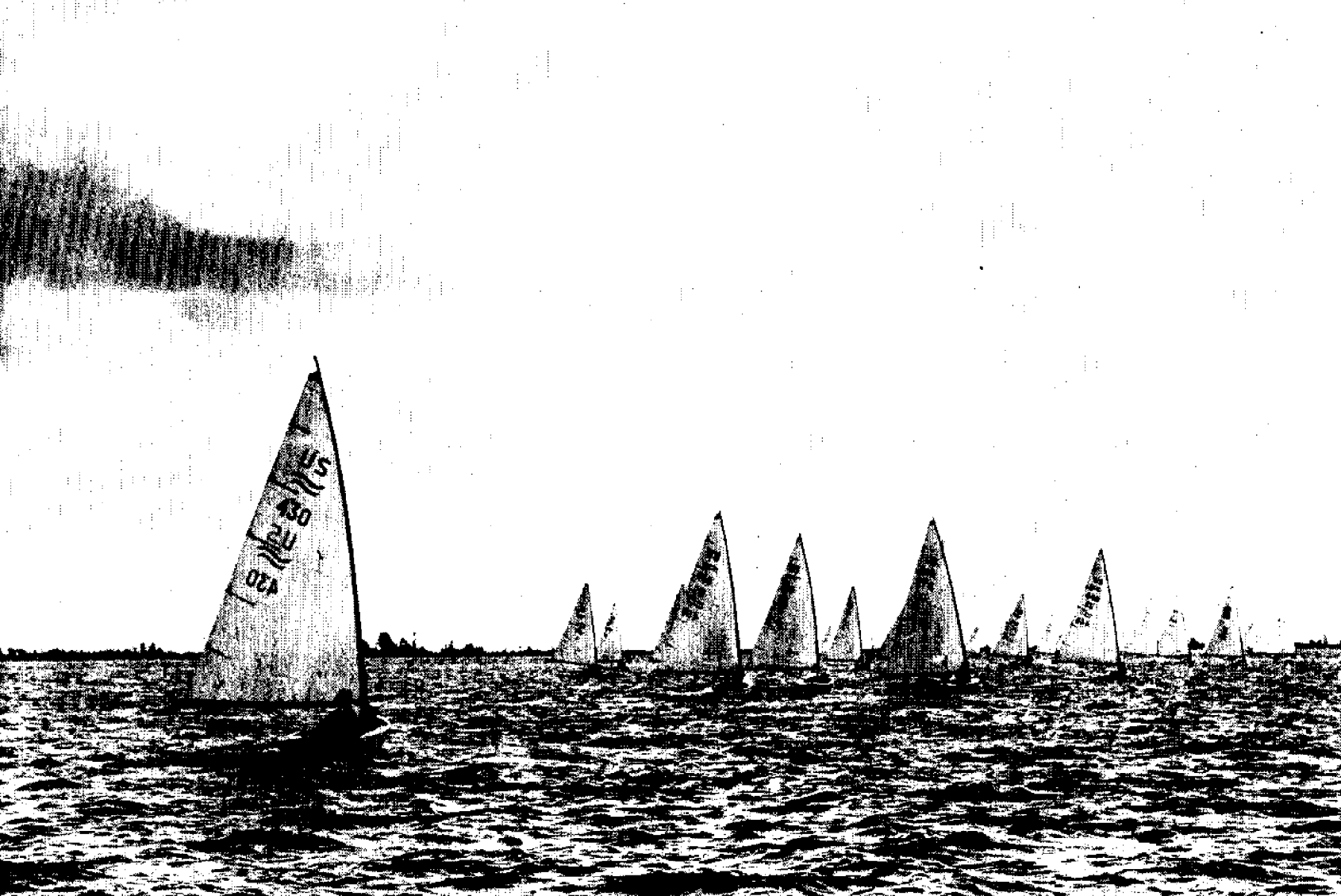
This series of reports dealing with shorelands management is part of the University of Michigan Sea Grant Program's continuing effort in promoting more logical and effective use of our natural resources.

I hope that documents such as this will help stimulate public understanding and participation in the planning-decision process.

The issue of shorelands management is of special significance to residents of Michigan. We have over 3,000 miles of coastline on the Great Lakes, more than any state in the mainland U.S. Increasing use of this coastal resource will require innovative and imaginative management policies to ensure its continued use in the future.



John M. Armstrong
Director
University of Michigan
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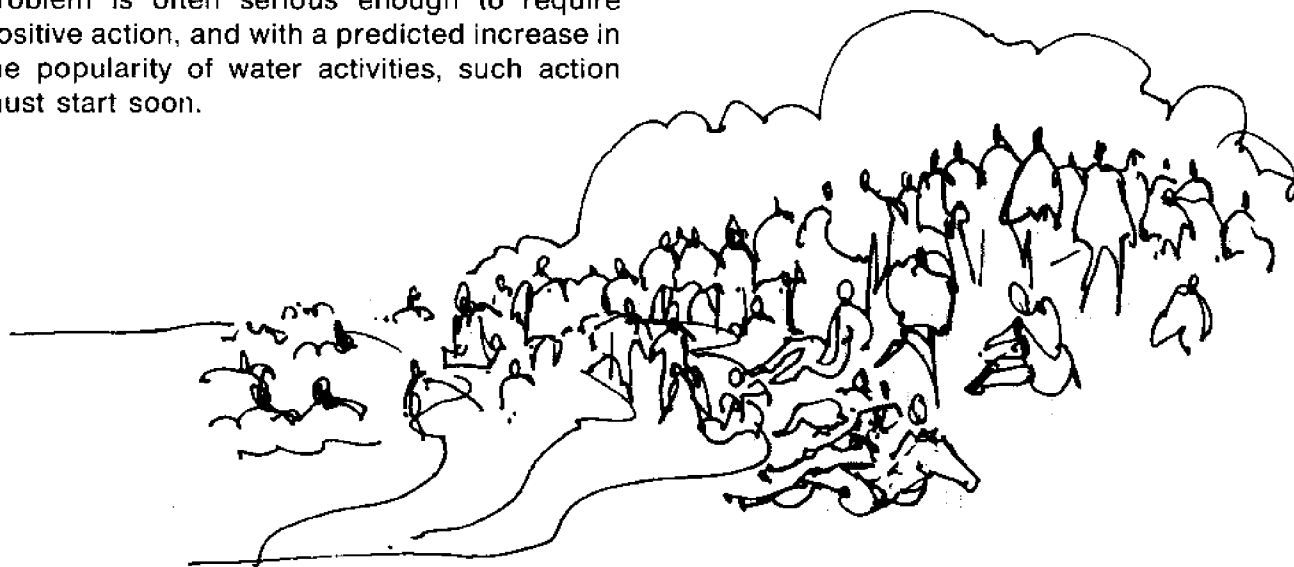
"Water Zoning" is one in a series of booklets published by the Shorelands Management Unit of the University of Michigan Sea Grant Program. The purpose of this series is to focus attention upon problems of land, shore, and water use and to stimulate discussion and informed citizen participation with various Michigan agencies, citizen groups, and industry. The staff of the Shorelands Management Unit welcomes questions about shorelands problems. Comments and suggestions concerning this shorelands management material would also be appreciated.

In the crowded sea lanes of the eastern United States, work has begun on the establishment of comprehensive traffic planning similar to that found at airports or along major highways. Not unlike an airplane coming in for a landing, ships will be assigned formal navigation paths, given a number, and be traced by radar until they arrive at port.

Not surprisingly, many lakes and rivers of Michigan are also reaching a point at which some form of regulation and control might be considered. Wherever people enjoy water activities, crowded conditions are now a frequent and perhaps all too familiar situation. This situation is not confined to the summer months; increasingly, it is also a winter problem, as numerous vehicles, some of them capable of reaching high speeds, take advantage of the considerable ice fields found throughout the state.

However, it is not just a question of crowding: a word which suggests only a certain degree of inconvenience. As a growing number of incidents would indicate, the situation is more serious. Many traditional water or ice activities are now disrupted or actually displaced by newer ones, and none are as enjoyable as they were even five years ago. However, the clearest and most tragic example of the potential seriousness of this type of situation is the occa-

sion when a swimmer is injured or even killed by a high-speed motor boat. Clearly, the problem is often serious enough to require positive action, and with a predicted increase in the popularity of water activities, such action must start soon.



CROWDING

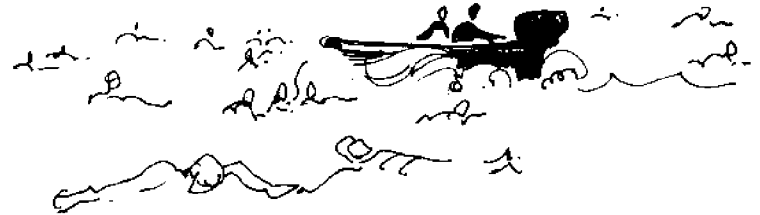
THE PROBLEM

The basic problem is usually due to some combination of crowding and/or incompatibility.

Crowding: When too many people attempt to use a limited resource at the same time, such as when 100 people come to a beach better suited for use by 20. Similar to the problem of crowding on a beach is the situation in our airports, where increasing traffic has required the establishment of beacons, flight patterns, scheduling, and radar.

Incompatibility: When two or more activities attempt to use the same resource when, in fact, they are basically incompatible. Crowding at a swimming area can be corrected by limiting the number of swimmers; however, if two activities do not "fit," such as motorboats and swimmers, then it is not a question of numbers, but of a basic inability to use the same area at the same time.

An example of incompatibility is that of pedestrians versus cars in downtown areas. To avoid conflicts, it has been necessary to isolate each of the activities, designating sidewalk zones for pedestrians and road zones for cars. Another example of incompatibility which is perhaps less familiar, but which will increasingly become a matter of public concern, is that of increased interest in ice recreation versus an increased interest in extending the navigational season in the Great Lakes. Snowmobiles, ice

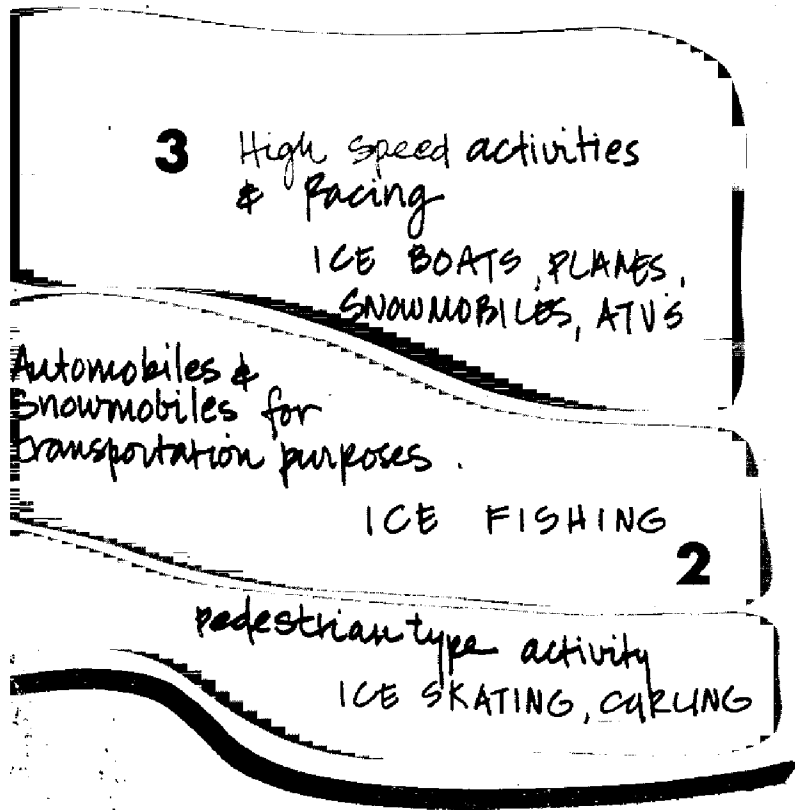


INCOMPATIBILITY

boats, cars, trucks, motorcycles, all-terrain vehicles, ice planes, and other vehicles are placing increased pressures on our ice resources. Yet, at a time when this use of ice is growing rapidly, the Army Corps of Engineers has been conducting feasibility studies of removing the ice cover to facilitate year-round commercial navigation. The two types of activity are basically incompatible, for one interest group sees the ice as a necessary and valuable resource, while the other sees it as an obstruction, to be removed.

With an active state program of recreational promotion, aided and supported by industry and local business interests, it can be expected that the number of people and types of activities desiring to use our water and ice resources will increase rapidly in the next few years. New highway systems, shorter working weeks, more income and new recreational vehicles will further increase the likelihood of more conflicts, clashes, and unfortunately, accidents.



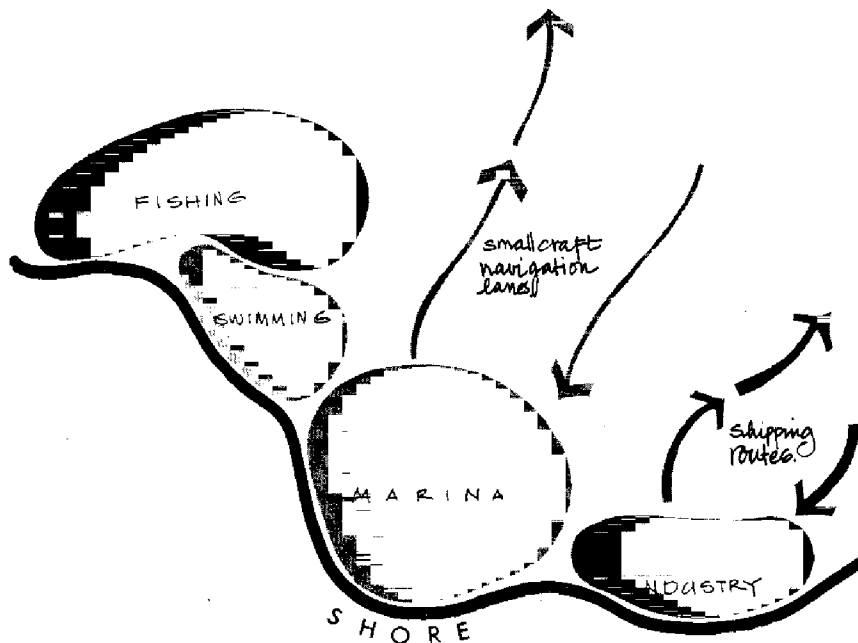


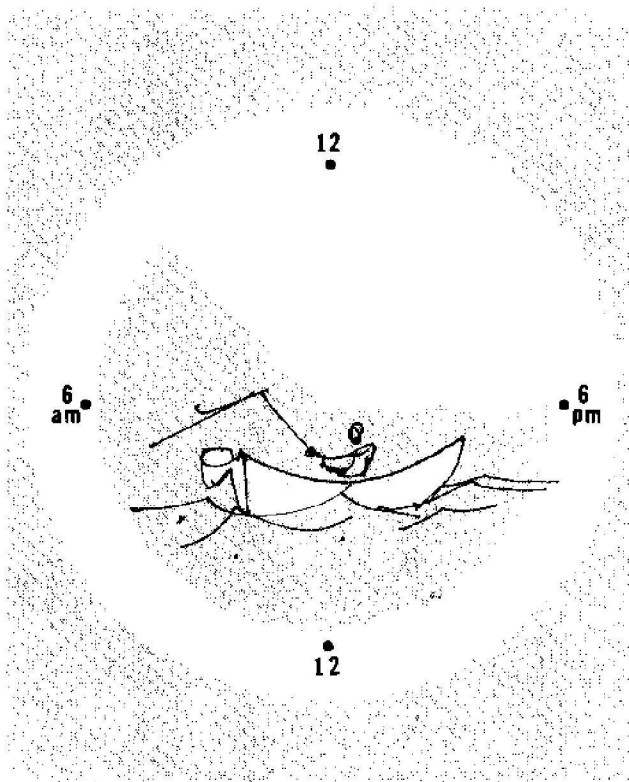
POSSIBLE SOLUTIONS

When either crowding or incompatibility leads to a water use conflict, it is usually necessary to develop methods of limiting the number of people, the types of activity, or both, that occur at a specific place at a specific time. Following are some possible methods of achieving this type of control.

Water/Ice Zoning: One way of eliminating conflicts is to designate specific areas or zones for individual activities. Thus on a lake there may be swimming areas, fishing areas, and water-skiing areas, each reserved for exclusive use by that one activity. In reference to winter ice areas, zones might be set up so that near-shore areas are for activities such as ice skating, middle distance areas for ice fishing, and areas further removed from shore for high-speed activities such as ice planing and ice boating.

Rather than dividing a lake, stream, or bay into several different usage zones, entire bodies of water or ice could be designated for a single use. Following this pattern the State has excluded commercial fishing from all of Grand Traverse Bay, setting the bay aside as a recreational fishing area. Clearly, this is not a reasonable solution for the community that has only one lake or stream—but on a state-wide basis it might make sense to designate at least some water areas for specific sets of activities, rather than attempt to accommodate every possible use at each water site.





Scheduling: A technique that may receive more attention in the future is that of scheduling activities. As an alternative to excluding certain activities from a specific area altogether, one can exclude certain activities at different times of the day, week, month, season, or year.

As an example, some lakes have time schedules so that fishing occurs from 6 p.m. until 9 a.m., a period during which fishing is often at its best; and water skiing is permitted throughout the lake from 9 a.m. until 6 p.m., when the temperature is best for skiing and when the fish are often less likely to be caught. In the same manner, snowmobiles might be allowed on ice fields on alternate days of the week; the other days being reserved for ice boating or ice skating.

The benefit of this regulatory approach is that more people and more types of activity can safely use the same area. One of the major weaknesses of this approach, as well as that of

zoning, is that it is difficult to agree on just what the regulations should be, who should make them, and how they can be enforced. Another problem, which will be considered in more detail in other publications, is that the lake or stream, as a natural system, may not be able to tolerate a high density of activity. Thus, in the long run, techniques which allow increased use could prove to cause more harm than the initial conflict.

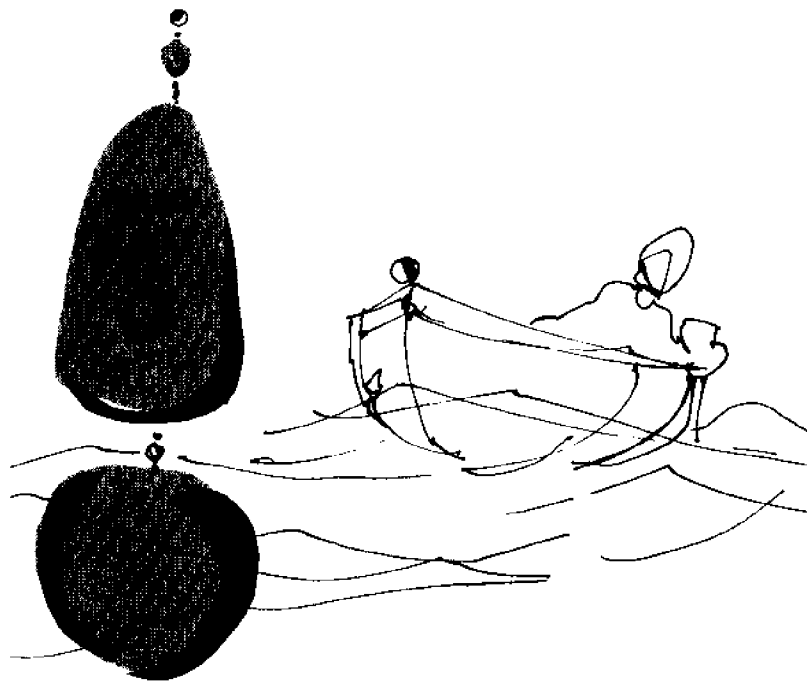


Density Control: If enjoyable recreation is to continue, certain density regulations may be necessary for most water and shore areas. An example of density control is the current policy of the state of Michigan to issue only a limited number of deer hunting licenses for a given region of the state. Another example is the recent set of regulations as to the number of canoes which can be on the more popular rivers at a given time. As the citizens of Michigan become more concerned about the limited tolerances of natural systems, density regulations will become more important.

Other Methods: As increasing demands are placed upon our limited water resources, it may be that serious conflicts will be resolved only through the use of more complex solutions. One approach which will be increasingly important in the future is **technology assessment**. The basic objective of this approach is to analyze a product or an activity before it is actually used. In this way, modifications can be made to avoid

damage or conflict before it occurs. In the future it may be necessary to require proof that any proposed activity will not disrupt or displace existent activities or environmental systems *before* it is granted access to our water resources.

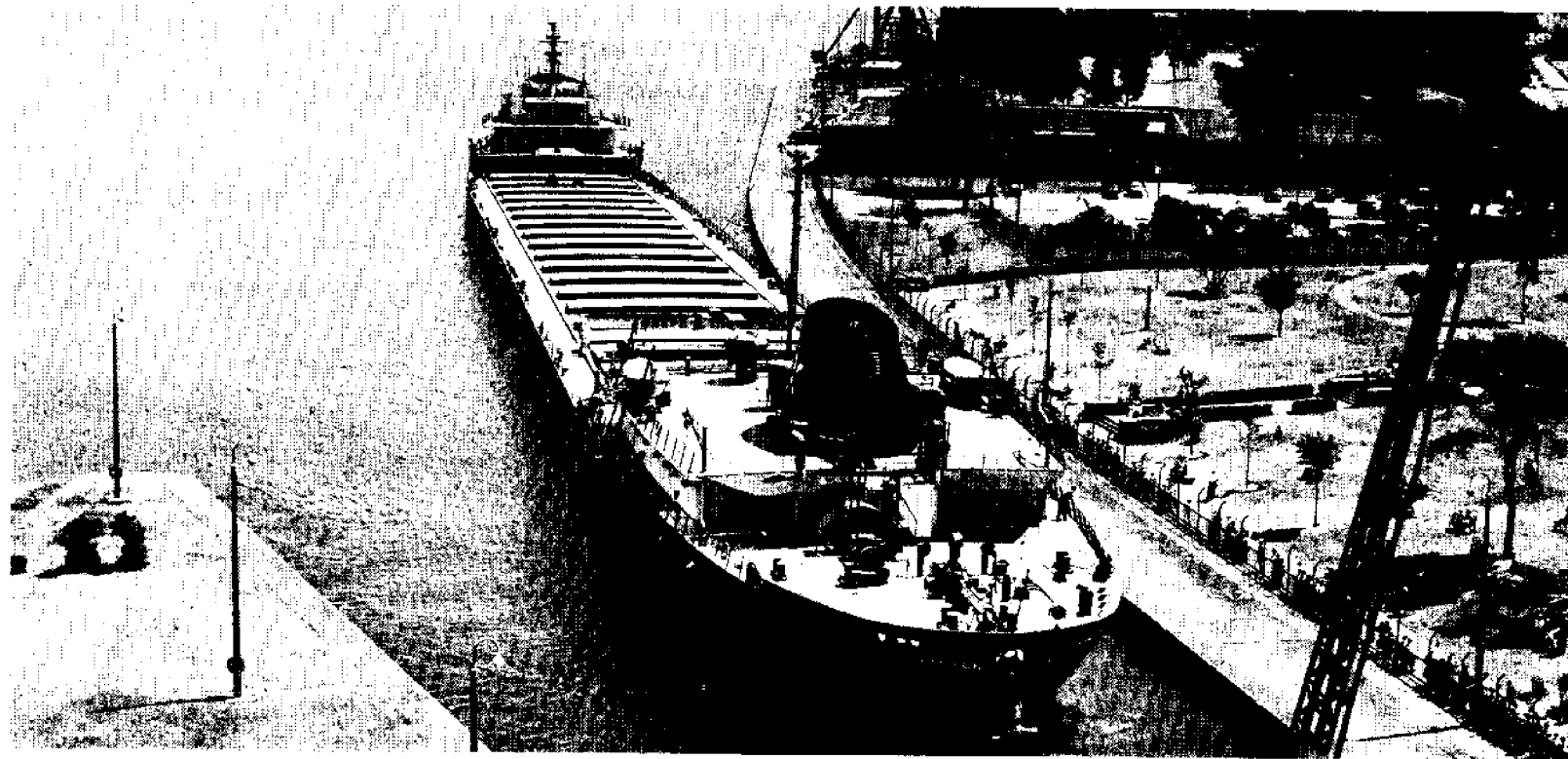




IMPLEMENTATION

As we have attempted to indicate, there are several possible solutions for most water-use problems. However, when it comes to choosing one specific solution and attempting to implement it, the task is usually difficult and occasionally impossible. It is one thing to determine how a conflict between various activities such as swimmers, motorboats, ships, and fishermen might be resolved. But when one starts dealing with the *people* who enjoy these activities, the best solution often changes, and perhaps no solution is available. Any regulation will adversely affect the interests of some group or groups, while benefiting others, and conflicts can be resolved only if all of the parties involved are willing to cooperate and compromise.

It is possible that on a small inland lake where shoreland property is controlled by a neighborhood association, a mutually acceptable agreement can be reached easily.



However, on large water systems used by the general public, especially Great Lakes shoreland areas, a compromise may be difficult to achieve. Since public bodies of water are controlled through the legal and political system, it is often in the perceived best interest of each group to hold out for its own demands, since there is always a chance that it can prevail in the political or legal arena. It is usually only when a conflict becomes critically serious, or political and legal maneuvering fails to work, that cooperation and compromise become

possible. Perhaps perpetuating the trend toward conflict rather than compromise is a state and federal tendency to assert jurisdictional rights rather than consider compromise whenever their interests are in contrast to local governments or citizen groups. As a result of this past pattern, people see little sense in cooperative planning that may be overridden by some "higher authority." In future years there must be more informed cooperative action between citizens and government, and between rural and urban interests.

CONCLUSIONS

Clearly, the concept of water zoning can deal with only some of the complex issues facing both the Great Lakes and the inland waters of the state of Michigan. But it may help to solve some of the most immediate and serious conflicts.

Citizens should realize that as water recreation becomes more popular, and as our population continues to grow, increased regulation will probably be necessary, even if such regulation is unpopular. The state has several management programs dealing with various water issues, and advantage should be taken of their ability, information, and experience. In every water area, citizens should get together to consider positive action that might be taken.



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