

SHALLOW AREAS, THE NEAR SHORE ZONE AND HUMAN IMPACTS

(fact sheet #10 of the Shoreland Management and Lake Classification Series)



The Nature of the Near Shore Zone

Habitat for Fish!

- ❖ Near shore areas which are rich in aquatic plant diversity and abundance represent prime habitat for a variety of fish. The degree to which an area consists of both submerged and emergent macrophytes (aquatic plants) and a dense and diverse population of larvae, snails, and other insects, the greater the variety and numbers of fish that tend to feed and thrive there. Aquatic plants in these near shore areas tend to serve a variety of functions. Plants with large surface area provide shade and cover from predators. Aquatic plants also provide a source of food for fish, shorebirds, waterfowl, insects and amphibians and form a critical component of the aquatic food chain.

Water Quality Benefits

- ❖ Nearshore vegetation acts as a trap for sediment flowing from the shoreland surrounding the lake or stream and is thus key in protecting water quality. Nutrients taken up by macrophytes are not available to stimulate the growth of algal blooms. Plants also act to anchor lake bottom sediment and serve to prevent or lessen the turbidity or cloudiness which can result from the lake bed being stirred up by motorboats or other human impacts.

Shallow Areas and Human Impacts

Case Study: Aquatic Plants and Lake Ripley

- ❖ A study investigating the impacts of boats on shallow, near shore areas took place on Lake Ripley (Jefferson County, Wisconsin) during the summer of 1995. Specific areas of the lake used by waterskiiers and motorboats were marked off and enclosed, effectively eliminating all use by motorized watercraft. Other plots within this high-use area, functioning as control plots, continued to be open to motorboat traffic. After approximately three months, the plots were assessed for plant growth.

Lake Friendly Alternatives:

Pier ordinances. All municipalities (e.g. town, village, city or county) have the authority to pass **pier ordinances**. Pier ordinances have the ability to protect some of the near shore resource values discussed above by controlling pier density and location, setting forth dimensional standards, and designating areas within the lake which, due to ecological significance, require greater protection.

If a county or other unit of government is undertaking a **lake classification project**, a pier ordinance may designate different pier standards for different classes of lakes. **(see fact sheet #11 for ideas on managing and protecting near shore areas through performance standards for piers).**

Surface use ordinances. Towns, villages, cities and public inland lake and rehabilitation districts have the authority to impose surface use controls on inland lakes. (Counties have authority to pass pier ordinances on rivers and streams and on waters next to marinas which they operate.) Through space and time zoning, towns, cities, villages and lake districts can identify sensitive near shore and shallow areas and impose appropriate management and surface use controls. The Round Lake Protection and Rehabilitation District in Chippewa County adopted an ordinance which limits lake use in an area of the lake with rare plants and a diverse macrophyte community. **(See fact sheet # 20 for ideas on using surface use controls to manage ecologically sensitive areas.)**

References and Additional Sources of Assistance:

Asplund, Timothy R., 1997. Investigations of Motor Boat Impacts on Wisconsin's Lakes. Wisconsin Department of Natural Resources.

Asplund, Timothy R., and Cook, Chad M. 1997. Effects of Motor Boats on Submerged Aquatic Macrophytes. *Lake and Reservoir Management*. 13(1): 1-12.

Bernthal, T.W., Barret, J.R.(ed). 1997. Effectiveness of Shoreland Zoning Standards to Meet Statutory Objectives: A Literature Review with Policy Implications. Wisconsin Department of Natural Resources.

Drafted by Tamara Dudiak, UWEX Lake Specialist (715/346-4744); tdudiak@uwsp.edu



For more information, contact your regional Department of Natural Resources lake coordinator, the Wisconsin Association of Lakes [800/542-5253] or UWEX/UW-Stevens Point [715/346-2116].