# Protecting Water Quality & Resuspension **Caused by Wakeboard Boats**

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## *A Conservancy's View*

As a lake area conservancy charged with protecting and maintaining good water quality, the Wawasee Area Conservancy Foundation (WACF) has installed pollution and erosion control projects for over 20 years. Projects include streambank stabilization, wetland restoration, sediment basins (allowing sediment to settle out), and agricultural projects keeping topsoil on the fields. With the help of willing landowners and many partners including the IDNR Lake and River Enhancement, the Elkhart River Restoration Association, and the Great Lakes Commission, we have kept over 40,000 tons of sediment out of lakes and streams in our watershed.

But with all that effort, sediment still gets into our lakes and streams, and over the years has accumulated. This bottom sediment is now our biggest challenge. These days, instead of thinking about projects upstream, we are thinking about the sediment already in the lake, thus the current focus: keeping sediment out of the water COLUMN. Stirring up sediment clouds turbidity and releases phosphorus from the lake bed. Our goal: to leave that sediment alone as much as possible.

### Responsible Boating Campaigns

The first line of defense on stirring: *responsible boating*. Being aware of the shallow areas, and staying in deep areas while wake boarding and surfing. This has a huge impact on slowing resuspension in the lake, helping turbidity, and keeping algae blooms down. Included in Figure 1 are examples of our efforts to spread the word at local marinas and public launch ramps.

Wawasee, Indiana's largest natural lake (3,060 acres) has large shallow areas

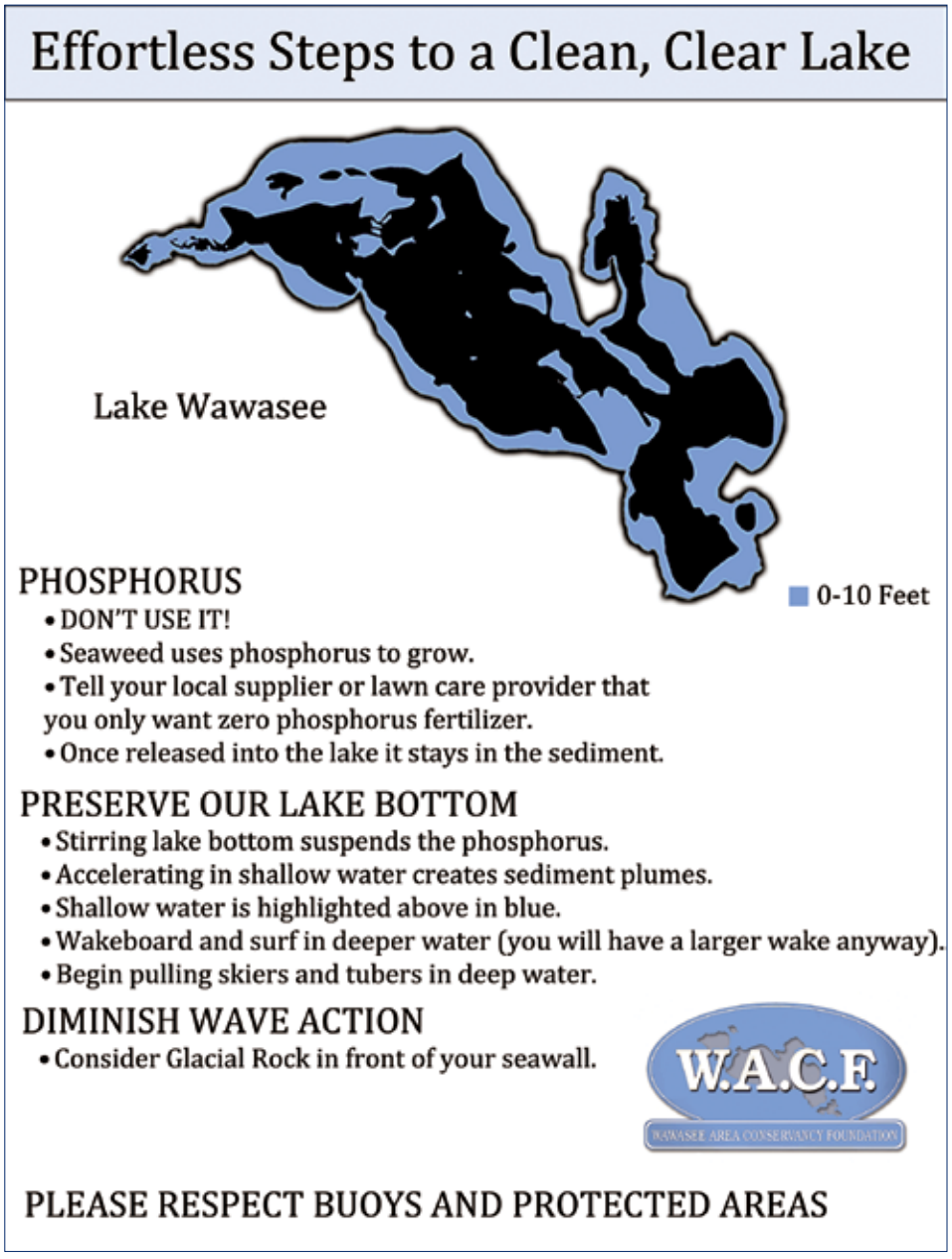


*Figure 1. WACF's signs and refrigerator magnets stressing the importance of avoiding stirring the lake bottom (and including a bathymetric on the magnet).*

susceptible to stirring. Up to half of the lake's surface area is less than 10 feet deep. We encourage deep draft boats to stay in the deep areas for wake boarding and surfing (Figure 2). Our campaign: "Be Wake Cool" (Figure 3).

Under Indiana law, a person may not operate a motorboat at a speed greater than 10 mph on a lake having less than 300 surface acres. This law is intended to provide safe boating speeds on small lakes and to protect small lakes from excessive boat wakes. However, since wakeboats operate at less than 10 mph, these small lakes will not be protected from excessive wakes or the lake bottom scouring and shoreline erosion that can occur.

We absolutely do not discourage boating on Lake Wawasee – but we do encourage *smart boating*. By publishing the bathymetric maps regularly (Figure 4) and providing these maps as reminders, we hope to continue to have an impact on boating awareness. Our long-term goal is to add a boating education center on site at our Lake & Watershed Education Center.

Deep drafting ballast boats are more and more common on Lake Wawasee and other Indiana lakes. Directing boats to the best places to wake board and surf in the lake will be key to protection of the bottom. Damage has already occurred. Prop scarring of the lake bottom is visible in aerial images (Figure 5).


*Figure 3. "Be Wake Cool" campaign sign.*

## Regulated Ecozones

Another tool WACF has used to encourage smart boating is the establishment of ecozones. Ecozones were established by the State of Indiana in 2000 to protect significant ecological areas within lakes where the use of

*Figure 2. Typical surfing wave.*

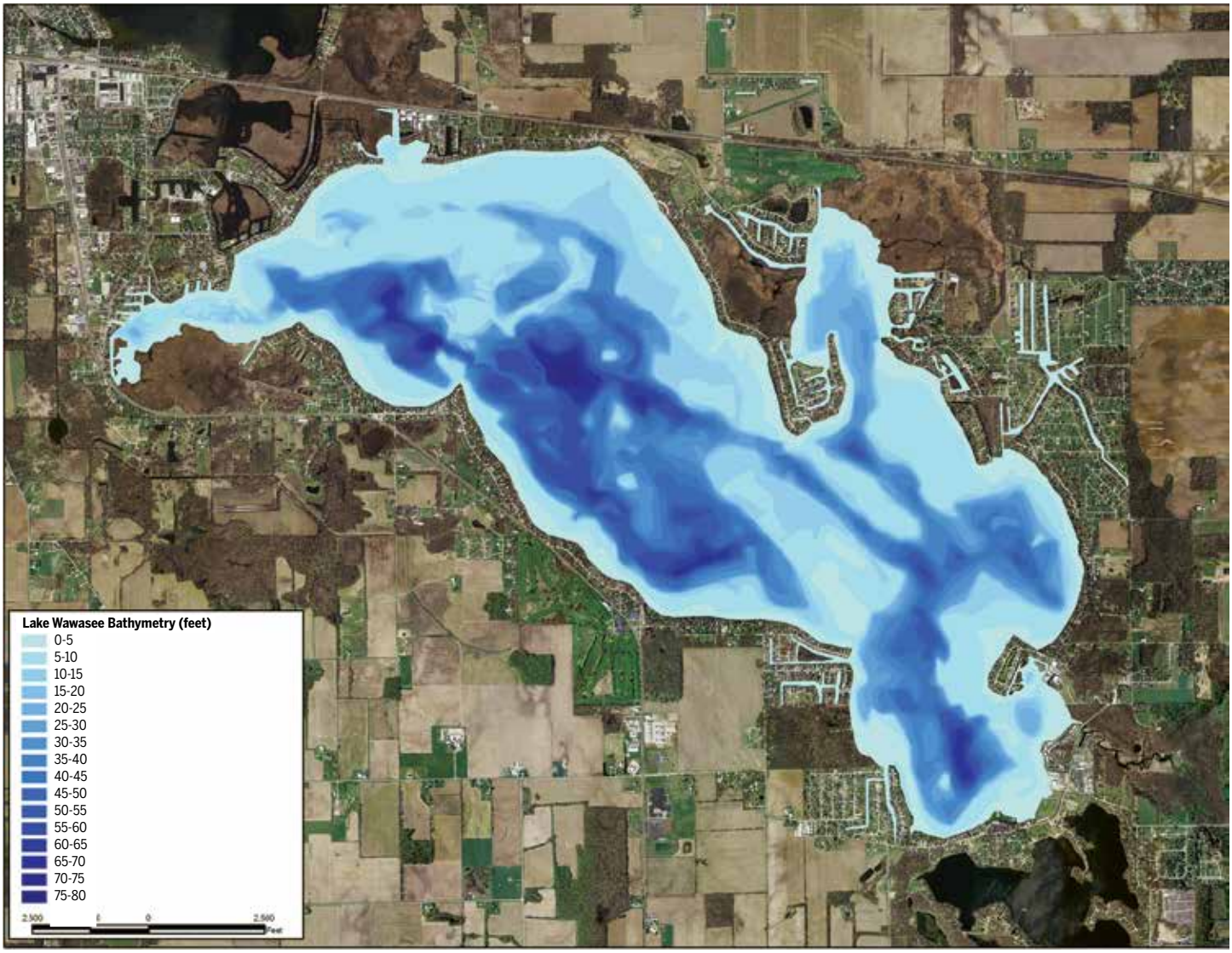


*Figure 4. Wawasee's bathymetric map.*

watercraft may be limited or prohibited for fish, wildlife, or botanical resource management, or for the protection of users. Wawasee was the first lake in Indiana to establish ecozones. In four areas where perimeter wetlands are contiguous, WACF has special designated and regulated ecozones defined by white "Idle Only" buoys (Figure 6). These wetlands are vital to the health of our lake and a healthy sustainable fishery. These buoys are installed and removed by volunteers in the spring and the fall of each year.

As we gain more experience with wake boats, we will continue to examine and identify more options to relieve the pressure from deep drafting ballast boats and the waves they create. The WACF is committed to working together with recreational lake users and encouraging good lake stewardship. WACF completed a Carrying Capacity Study in 2004 to measure the magnitude of effect from motor boating activity. Dudiack (2004) suggested that a conservative estimate of a lakes' motor boat carrying capacity is around 15-20 acres of usable lake area per boat. On most given days, that is easy to meet. But on a busy weekend, Lake Wawasee can become over-crowded, resulting in some of these wave action and bottom scarring stresses on the lake.

## Healthy Shorelines

Wake boarding and surfing create larger waves that, as a result, create a greater demand for shoreline protection and seawalls. WACF encourages natural shorelines and glacial stone seawalls to help break up the wave action. With every permit application for concrete seawalls around the lake, WACF contacts the applicant and explains advantages of stone seawalls and sends out our "Stop the Chop" brochure on the advantages of glacial stone to absorb the wave action. Glacial stone can absorb wave action better than concrete seawalls, improving swimming areas and back wash that scrubs the bottom of the lake.

So – *"Stop the Chop"* and "*Be Wake Cool'"*!

**Heather Harwood**, ASLA, is a landscape architect and has been executive director of the Wawasee Area Conservation Foundation for 20 years.


*Figure 5. Propeller scarring on the bottom of Lake Wawasee are seen as thin, straight lines.*


*Figure 6. Eco-Zone buoy.*