by Lauren J. Bryant

Growing up in Wisconsin, William "Bill" Jones knew what made a good lakefront: marshy shores lined with forests and tall grasses; some aquatic plants, perhaps a log fallen in the water, providing hiding places for the fish and tadpoles and turtles he loved to catch.

Now a clinical professor in the School of Public and Environmental Affairs at Indiana University Bloomington, Jones still knows what makes good lakefronts, and he's concerned about their disappearance, especially in Indiana.

Jones has been an aquatic ecologist and limnologist (someone who studies lakes and other freshwater bodies) for 30 years. Trained as an undergraduate in zoology and ornithology (he still keeps a bird feeder outside his third-floor office window), Jones earned a master's degree in water resources management from University of Wisconsin in 1977. But he "cut his teeth," he says, at Cedar Lake in Indiana, when he was put in charge of a state project to assess the lake's problems in 1979.

Cedar Lake was a tough assignment. "This was not a pretty lake," Jones recalls. "It was pea-green soup, surrounded by homes and full of nutrients from agricultural runoff."

Following close on the establishment of the Environmental Protection Agency's Clean Lakes Program and the Clean Water Act in the 1970s, Jones was tasked with carrying out new federal protocols for diagnosing, improving, and preserving water quality at Cedar Lake. The project was the first of its kind in Indiana, says Jones.

Since 1979, Cedar Lake residents have continued lake improvement efforts that have slowed down or eliminated some sources of their lake's degradation. According to Jones, though, the problems seen at Cedar Lake remain rife throughout Indiana today. Much of the trouble stems from what Jones calls "shoreline abuse."

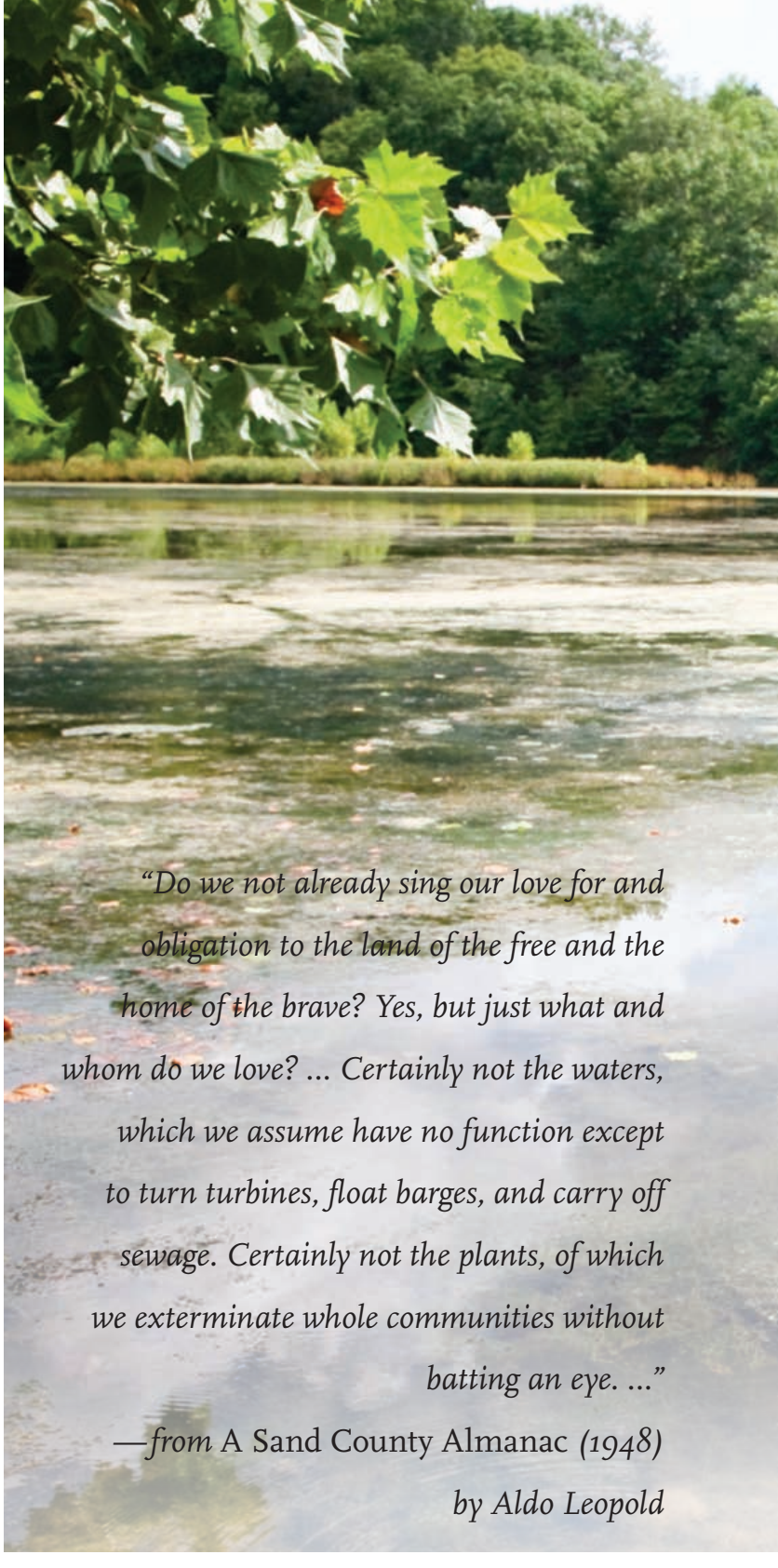

Photo by Chelsea Sanders

THE LIVIN' IS EASY ... FOR WHOM?

Americans, Hoosiers among them, have enjoyed lakefront living for well more than a century. In earlier days, lakefront dwellings were largely Walden-like cottages situated in the woods, used for summer outings. By the mid-20th century, though, with the end of World War II and the advent of the national highway system, lake living began to change.

"Recreation at lakes increased greatly after World War II," Jones explains. "There were highways, more automobiles, and shorter work weeks. People had time, money, transportation, so they went to the lake."

And when they got there, they started building second homes. Over time, seasonal cottages were torn down and replaced with substantial dwellings. Today, the pinnacle of lakefront living has become a mansion-like house set on a manicured lawn, surrounded by seawalls, docks, piers, and all the watercraft to go with them.

Many of these homes are stunning. In a presentation Jones gives regularly to lake managers and property owners, he shows photograph after photograph of breathtaking homes featuring professional landscaping and undulating terraces spilling down to the water's edge, including dwellings on various Indiana lakes such as Lake Tippecanoe and Lake Chapman.

the art of Lakescaping

When Jones looks at these houses, though, he doesn't see beauty, but abuse. In his view, the removal of native shoreline plants and trees, and their replacement with bulkhead seawalls and other structures made of impervious materials, is nothing less than an assault on the lake's wildlife and the very life of the water itself.

"Lakes are not immaculate. Nature isn't neat," Jones says. "Lakes are diverse, and they function ecologically because they are diverse. Without a natural shoreline, the resiliency of a lake and the lake environment to respond to change is really lost."

Without the buffer of native vegetation along a lakeshore, for example, shoreline erosion escalates rapidly, while lawn fertilizers and other runoff easily flow into the water, causing excess nutrients that produce more algae. The removal of trees also removes habitat and food sources for fish, who like the shade of standing trees and the shelter of downed limbs. Fish also feed on insects that fall from tree branches into the water. "When you take away natural vegetation and put seawalls in, there are no longer homes for anything at all," Jones says.

As a result of his research and work with SPEA students throughout the state, and his ongoing gubernatorial appointment to the Indiana Lakes Management Work Group, Jones

has lots of exposure to the damage caused by modern-day development along lakeshores. "I've seen way too much shoreline abuse in my 30 years in Indiana," he says.

Jones points out that lakefront problems are worse in Indiana than in other nearby states such as Wisconsin, where a natural resource ethic holds sway. The Hoosier state, he says, is defined by a strong notion of property rights.

"In Indiana, the feeling is, the less government, the better," Jones says, "so there is this general notion that private rights supersede public good. Hoosiers do not want the government to tell them what to do with their property. There are still counties in Indiana that have no comprehensive zoning or planning rules on the books." He notes that the Indiana Lakes Preservation Act, passed in 1947 and designed to protect the "natural resources and the natural scenic beauty" of Indiana's freshwater lakes,is very difficult to enforce.

AWARENESS ISSUES

The reasons for shoreline abuse extend beyond fierce notions of property rights, though. Ironically, a similarly strong motivation behind sterile lakefronts seems to be good citizenship. As lake homes get developed, Jones says, a certain kind of peer pressure takes hold. Instead of letting native grasses grow or planting native wildflowers, lakefront residents install seawalls so they'll fit in.

"We don't want to be that different from our neighbors, we want to be known as good citizens, as good neighbors," Jones says. "People want to show they care."

There's also the fear factor. In his experience with lakefront dwellers, Jones often hears "fear of snakes" as a reason for not maintaining a natural shoreline. "There is still a fear of nature at work," he says.

The overriding issue behind shoreline abuse, though, is lack of awareness about the essential ecosystems of lakes.

The quality of a lake's water and its wildlife depend on the habitat and filtering functions provided by natural vegetation and wetlands. It's an interrelationship Jones learned about early, from his boyhood in Wisconsin and from the work of conservationist Aldo Leopold, who described a "land ethic" based on cooperation and respect in *A Sand County Almanac* more than 60 years ago. "In my formative years, that book helped me toward a more ecological way of thinking, a more sustainable way of thinking before sustainability was a buzzword," Jones says.

Among lakefront dwellers today, though, Jones encounters "an amazing lack of understanding" about fundamental ecology. "People just don't think of a lake as an ecosystem, they don't understand the cause and effect," he says. As a result, they damage the very things about lakes that drew them there in the first place.

"People are attracted to the natural beauty of lakes and the thrill of catching fish in their own backyard," Jones says. "They may be there because of the joy of watching birds and other wildlife, or to have a place where their grandchildren love to come to hunt frogs and turtles. The greatest irony is, the features that attract people to lakeshores are being destroyed by the actions those people take."

STEWARDING SOLUTIONS

Jones, a lifelong teacher and self-described "applied kind of person," says the solutions to shoreline abuse are education and examples.

About 20 years ago, Jones, working with the Indiana Department of Environmental Management, created the Indiana Clean Lakes Program, which he continues to oversee today. Working with SPEA master's students, Jones spends part of every summer sampling Indiana lakes, gathering data on their status and health, and sharing that data with federal and state monitoring agencies. The program also includes public education and volunteering components. "We give citizens the tools and equipment so they can take a more active role in looking after their own lakes," Jones says.

One newer area of research Jones is pursuing is assessing the economic value of Indiana lakes. It may seem obvious that bad water quality in a lake would negatively affect the lake's appeal, but Jones says lakefront dwellers often don't connect the economic dots. "In some counties, the vast majority of property tax revenue comes from lake homes and the sales taxes of people going to use those lakes," he explains. "But as a lake's water quality degrades, property values degrade. And as those values degrade, the tax base starts to degrade. So there's a substantial argument to be made about economic value of lakes."

For Jones, though, the value of a lake's natural ecosystem will always come first. Although he's worried about the extent of the shoreline abuse he sees, Jones is also encouraged by a number of new watershed and lake preservation initiatives springing up around the Hoosier state. He points, for example, to Kosciusko County, where various lake groups in the area have created a new county lakes and streams Web site and organized the Northern Indiana Lakes Festival, which took place in June 2009.

Lakefront problems are cumulative, and so are the solutions, Jones says. "Things happen a little bit at a time—people who simply follow what their neighbor is doing, people who think a seawall is the only way to protect their shore. We've got to convince people that the solutions are cumulative too, and that if they just make a start, they can lead by example and make a difference."

The rewards for those small steps are invaluable, as any child who has chased turtles on a summer day knows.

"There's nothing quite like the sound of water gently lapping up against a natural shore," says Jones. "It takes you to another place."

LAUREN J. BRYANT is editor of Research & Creative Activity magazine.