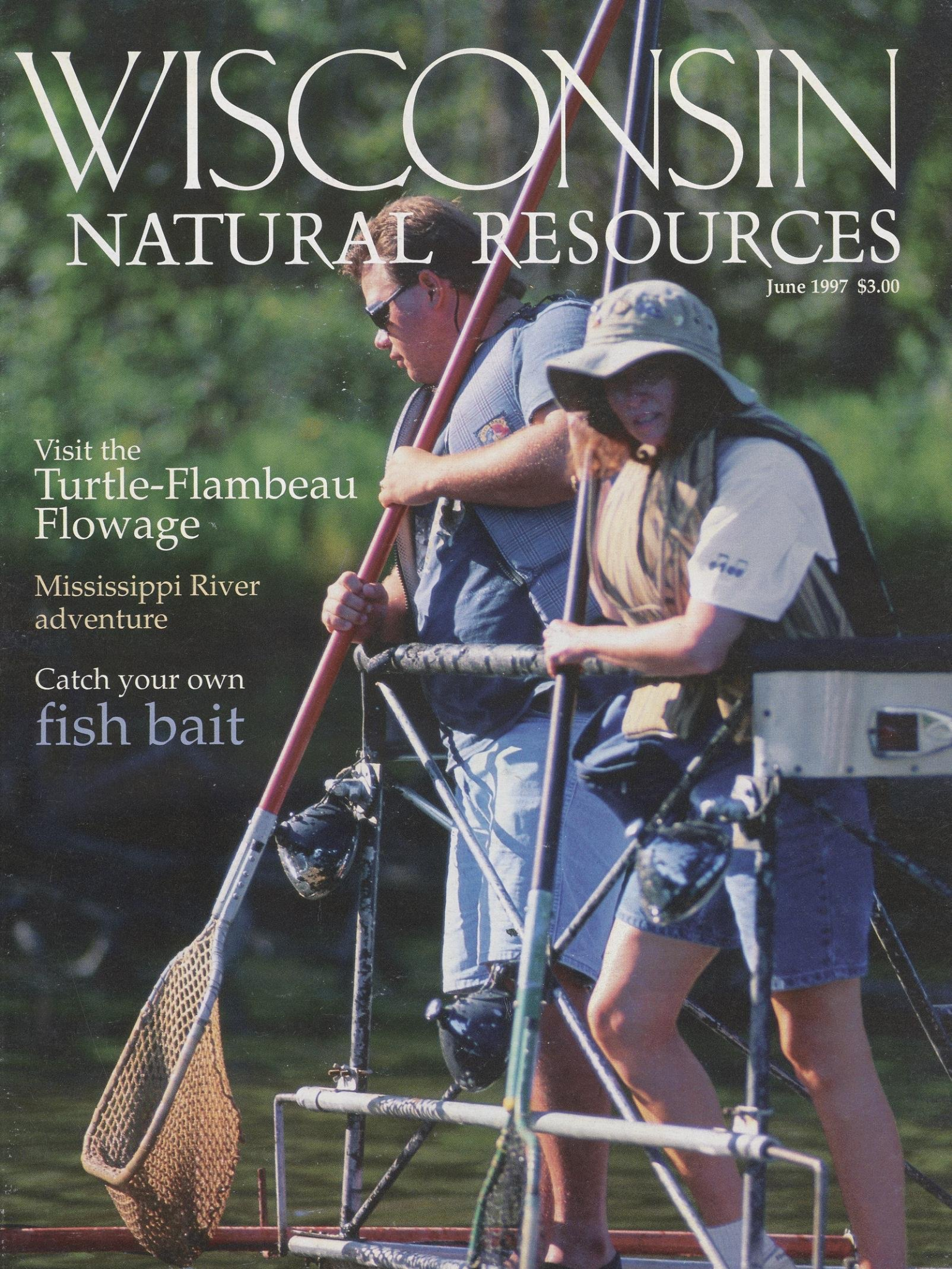
Wisconsin natural resources. Vol. 21, No. 3 June 1997

[Madison, Wisconsin]: Wisconsin Department of Natural Resources, June 1997

WISCONSIN NATURAL RESOURCES

June 1997 $3.00



Visit the
Turtle-Flambeau
Flowage

Mississippi River
adventure

Catch your own
fish bait

June is for bluegills

Dick Hall

It's happening now in quiet ponds, lakes and backwaters across Wisconsin. Small, feisty fish are congregating in the shallows. The males are scooping saucers in sandy or soft bottoms with their tails, inviting females to deposit eggs. This first, frenzied call of the mating season reaches anglers too. The bluegills are on the beds!

On such a day, I remember being 10 and having a cane pole with stout fishing line, a clumsy cork bobber and a hook big enough to hold a glob of garden worms. These were the days before ultralight spinning tackle, synthetic lines, thin leaders and plastic lures.

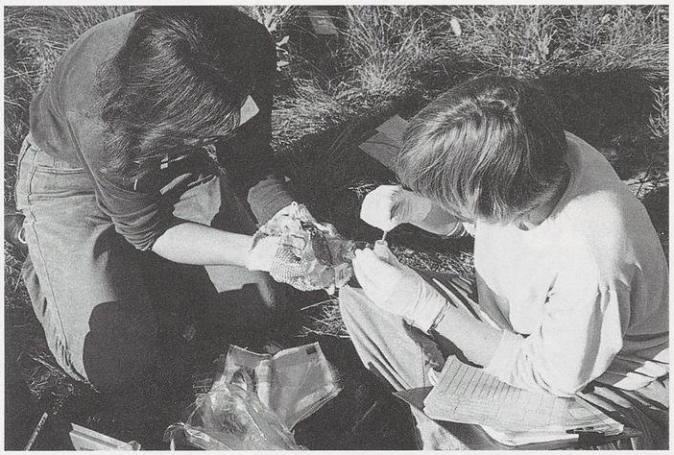
I would fish from the shore of an old millpond on June mornings and become mesmerized by the bobber dancing amid the slanted reflections of the early sun. When the bobber scooted sideways across the water, I would yank the pole tip skyward. That's when the 'gill was holding the hook, or so I thought. I missed more often than not.

continued on page 29

Printed in U.S.A.
PUBL-IE-012
ISSN-0736-2277

WISCONSIN NATURAL RESOURCES

June 1997 Volume 21, Number 3



RICHARD BAUTZ

ROBERT QUEEN

ROBERT QUEEN

DAVE CREHORE

FRONT COVER: How I spent my summer workshop: Teachers dip into a Mississippi River backwater sampling fish.

ROBERT QUEEN, Madison, Wis.

BACK COVER: Day is done on the Turtle-Flambeau Flowage.

DAVE CREHORE, Green Bay, Wis.

Wisconsin Natural Resources magazine (USPS #34625000) is published bimonthly in February, April, June, August, October and December by the Wisconsin Department of Natural Resources, 101 S. Webster St., Madison, WI 53702. The magazine is sustained through paid subscriptions. No tax money or license fees are used. **Subscription rates** are: $8.97 for one year, $15.97 for two years, $21.97 for three years. Preferred Periodicals postage paid at Madison, WI. POSTMASTER and readers: **subscription questions** and **address changes** should be sent to *Wisconsin Natural Resources* magazine, P.O. Box 7191, Madison, WI 53707. Toll-free subscription inquiries will be answered at 1-800-678-9472.

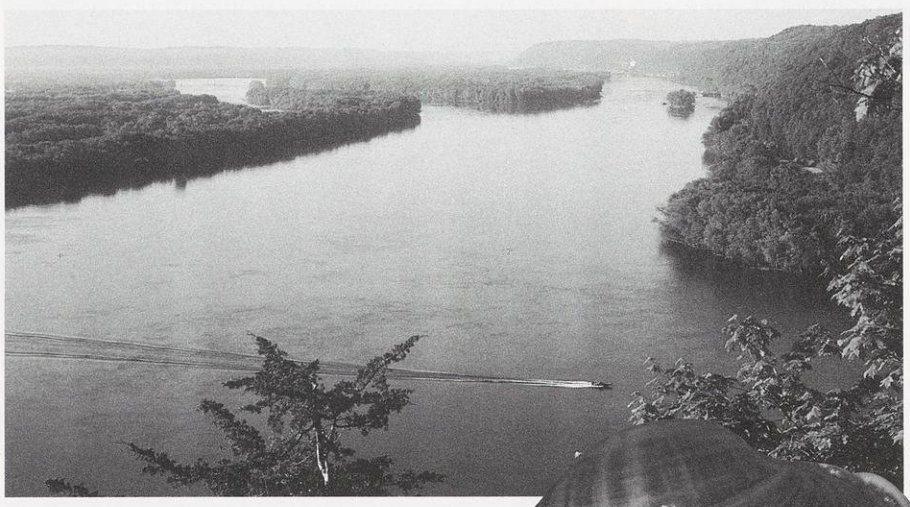
Learning on Ol' Man River

Summer workshops open life on the Mississippi River to teachers and their students.

Jeff Janvrin

ROBERT QUEEN

ROBERT QUEEN



JEFF JANVRIN

(left) Summer workshops provide variety. A little about the fishery,
(top) a little about plant ecology,
(above) and a lot about scenic vistas and a sense of the river culture.

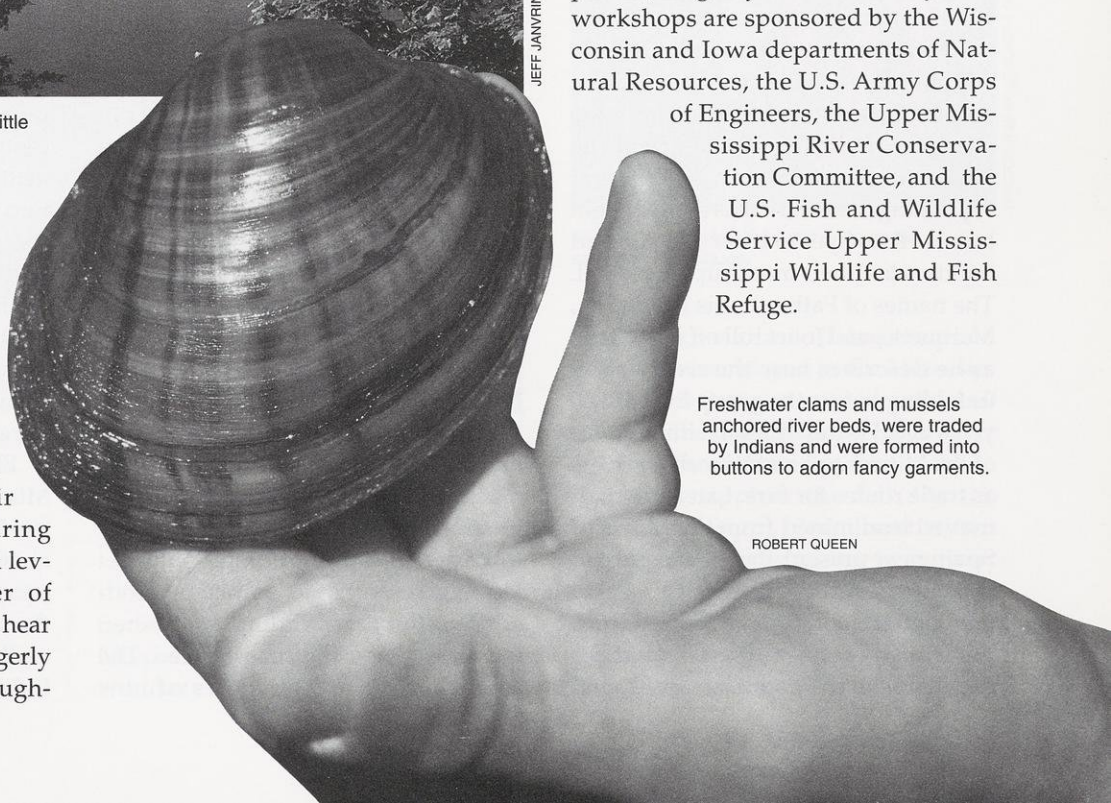
Take a moment to paint a mental picture of life along the upper Mississippi River. Can you imagine a quiet backwater channel reflecting majestic trees with sunlight sparkling through their leaves? Do you see an eagle soaring from the bluffs, and the dams and levees built to "tame" the Father of Waters? Now add sound. Can you hear the powerful engines of a tow gingerly making its way into a lock, the laughter of children exploring a sandy beach in the sun?

Extend this image across a few years, and see how the river and its creatures depend on floods and droughts. Watch colorful waterfowl winging south on annual migrations. Dip under the murky waters to witness fish passing from their winter to summer homes.

The Mississippi River is all of this and much more. It's been called a huge puzzle of many interlocking pieces, capable of forming a different picture depending upon where and how the pieces are placed together. To sense the wonder and mystery of this river, you have to discover it for yourself. That's just the experience we are trying to provide.

Eight times in the last five years a partnership of state and federal agencies has offered teachers the chance to see the Mighty Miss for themselves and share that excitement with their students. "Exploration of the Mississippi River" workshops will be offered this summer on Tuesday through Thursday, July 29–31.

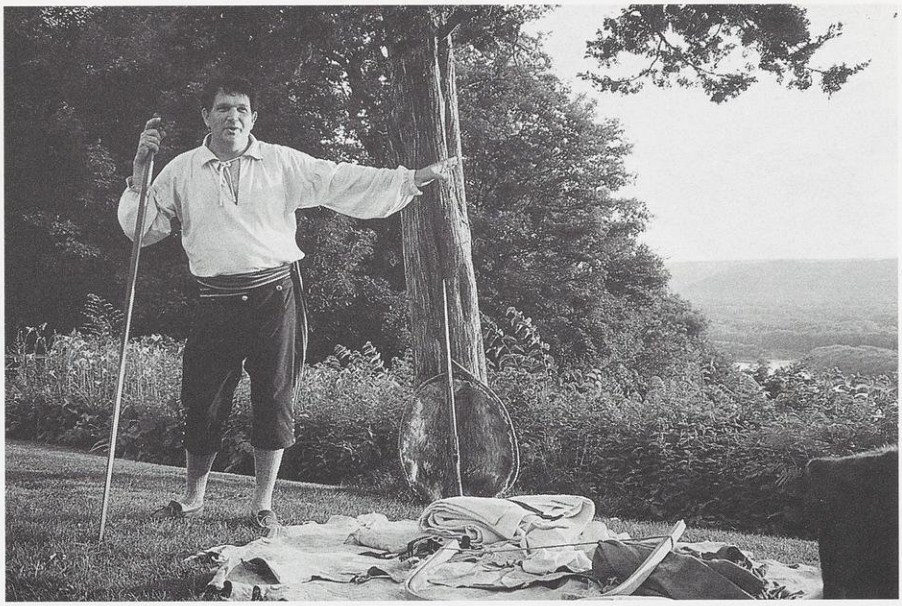
In our workshop last summer, educators from Iowa, Minnesota and Wisconsin discovered ways to bring the river closer to their students as they learned first-hand about the river's power, fragility and resiliency. The workshops are sponsored by the Wisconsin and Iowa departments of Natural Resources, the U.S. Army Corps of Engineers, the Upper Mississippi River Conservation Committee, and the U.S. Fish and Wildlife Service Upper Mississippi Wildlife and Fish Refuge.



Freshwater clams and mussels anchored river beds, were traded by Indians and were formed into buttons to adorn fancy garments.

ROBERT QUEEN

Participants hear presentations by resource professionals, river users, and commercial navigation businesses. The workshop highlight is an all-day field trip on the water. At various stops, biologists from five agencies demonstrate equipment and techniques used to monitor the river's health. Then the experts turn the equipment over to participants. By the end of the workshop teachers better understand the complex relationships between humans and the river, and the interdependence of river plants and animals.



JEFF JANVRIN

Blufftop history comes alive as a French trader spins tales of exploration, trapping and trading on the Big River.

Connections from the past

The dark forest forms a tunnel to the past as the teachers huff and puff up the bluffs of Effigy Mounds National Monument near Marquette, Iowa overlooking the Mississippi. The group reaches a place where hundreds of years ago, others left signs of their connection to nature. As night falls, the teachers hear how Native Americans carried soil from the steep valley below to construct large mounds of earth in the shape of birds and animals. Clues from the effigy mounds have led archaeologists to conclude that mussel shells and pearls from the river were traded for items from distant parts of North America: obsidian from the Rockies and copper from the Great Lakes region.

The following night, the setting sun silhouettes a visitor clad in buckskin and fur. His audience of teachers sits atop a bluff at the confluence of the Mississippi and Wisconsin rivers at Wyalusing State Park. His stories begin hundreds of years after the mound builders left their marks upon the soil. The names of Father Louis Hennepin, Marquette, and Joliet roll off his tongue as he describes how the river valley unfolding before the group looked 300 years ago. He describes the importance of the Mississippi and Wisconsin rivers as trade routes for furs. Later, the river moved lead mined from the Mines of Spain near present-day Dubuque. He tells of hardships endured by early French traders who transported commodities by canoe to the Great Lakes ports, where the goods were shipped to Europe. As the sun set over the shores of Iowa, he somberly recounts the tragedy of the Blackhawk War fought along the banks of this great river.

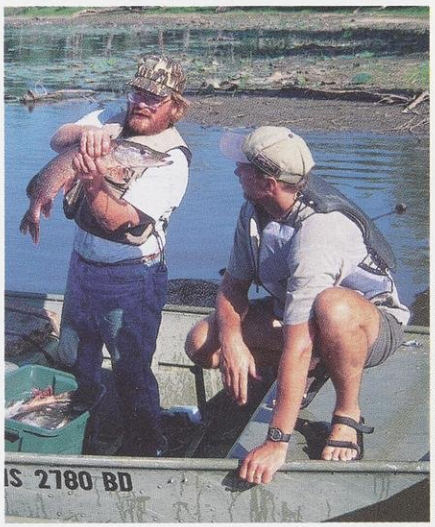
The educators hear how men and machine have shaped the river for the last 160 years to provide reliable river channels navigable by paddlewheeler and barge. They learn how snags and other obstructions were removed beginning in 1830; how wingdams were built to divert the power of the Mississippi's waters into a single 4.5-foot channel in 1878, a six-foot-deep channel beginning in 1907, and finally the construction of locks and dams in the 1930s to create a minimum nine-foot-deep stairway of water from St. Paul to St. Louis to feed a national need for commodities like corn, wheat, coal, fertilizer and road salt.

Lush wetlands and islands faded from view as the dams flooded the Mississippi Rover valley. The audience listens intently to accounts of creatures that could not overcome the hurdle of the dams: the skipjack herring and the mussels named "ebony shell" and "elephant ear." The biologists also explain how diving ducks, bluegills, largemouth bass and other animals exploited the "new" habitat created when locks and dams were constructed. The teachers then see examples of how people working together are restoring and enhancing the river environment.

Fisheries sampling

The whine of the generator and outboard motor makes it difficult to hear, but the laughter assures everyone is having a good time. On this brief ride aboard a electro-fishing boat, the groups are amazed at the size and number of fish that surface. (Some groups come back empty-handed, demonstrating that even the most sophisticated equipment can't guarantee a successful catch.) Electro-fishing places an electrical field in the water to temporarily stun fish so they can be netted. Once caught, the fish are placed into a tank with circulating water and are later identified and measured. The number of fish caught in a given amount of time is called the Catch Per Unit Effort. This measure gives biologists a rough index of whether fish populations are increasing, decreasing or remaining stable from year to year.

Electro-fishing is just one technique Mississippi River fisheries biologists use to ascertain fish health, growth and abundance. Fyke nets (barrel nets with a long leading edge), which have had the same design for centuries, are especially effective in shallow areas with little or no current. On the Mississippi,

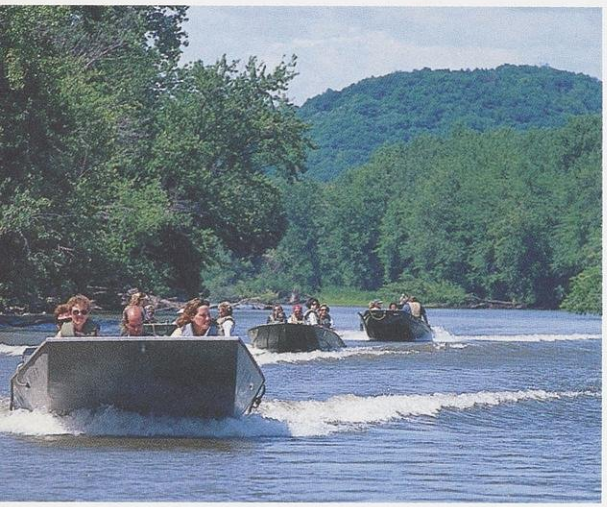


(PHOTOS THIS PAGE) ROBERT QUEEN

Teachers learn many ways that environmental adventures can measure up in their classes. *(top)* Whether examining a soft-shelled turtle, *(above)* interpreting a tree core, or capturing fish in a fyke net to demonstrate sampling techniques.

northerns, crappies, largemouth bass and bluegills are caught weighed, measured and released to estimate the population.

The teachers learn that to understand fish on the Big River, you have to appreciate timing. Fish use different types of habitat on different parts of the river at different times of the year. Some smallmouth bass winter in the Mississippi but will travel up river to tributary streams for the summer. In one study, smallmouth bass marked near La Crosse stayed in the Mississippi through the winter, then moved 60 miles up the Black River to Black River Falls for the summer and returned to the Mississippi in the fall. On the upper Mississippi, bluegills move two to three miles from winter to summer habitat, largemouth bass move up to 18 miles and walleye may move more than 80 miles to spawn and return back to the same spot.



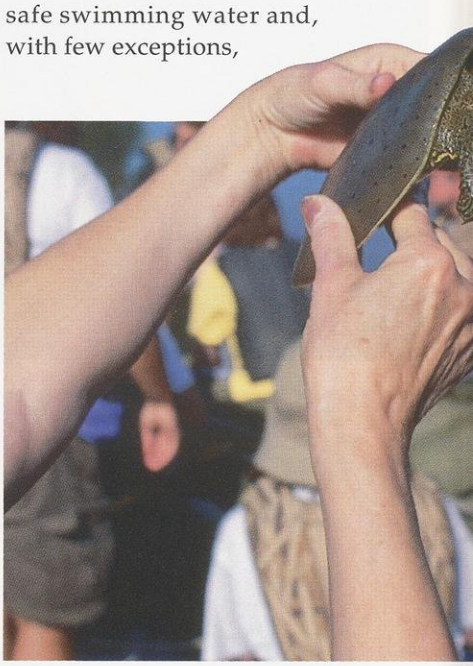
(ALL PHOTOS PAGES 8 AND 9) ROBERT QUEEN

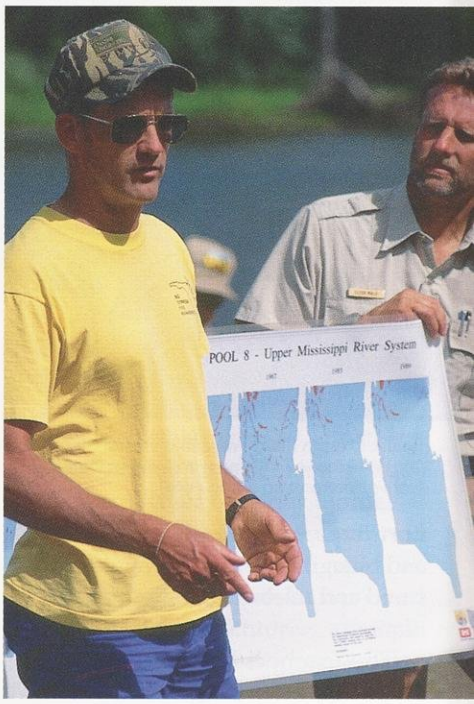
Water quality sampling

The flotilla of flat-bottomed boats weaves through a maze of backwater channels as the teachers pass colorful locales like Norwegian Slough, Woodyard, Frenchtown and Lily Pond. The boats stop at a shaded beach and everyone hops ashore. The biologists pull out bottles and meters to test the water. As quickly as the demonstration starts, the questions pour in: Is it safe to swim in the water? Can we eat the fish? What are the major pollutants today? Where is the bathroom?" Once the teachers find out the *next* stop has bathroom facilities, the rest of their questions are answered...more quickly!

Years ago, neither the swimming nor the fish were considered healthy in some river stretches. Today, the Mississippi River along the entire Wisconsin border meets federal standards for safe swimming water and, with few exceptions,

(left) The experiences are as diverse as the river. On the move from fisheries, to wildlife, forestry to channel management.
(below) Water quality tests raise a host of questions about the creatures that abide in the river and migrate through the region.





the fish are safe to eat. These are but two examples of how river conditions have improved from human actions. However, there are other issues: Fertilizers wash from crops and lawns into the river, and phosphorus and nitrogen contribute to algae blooms that on rare occasions cause fish die-offs. Nitrates from watersheds along the entire length of the Mississippi have been cited as a cause of a 7,000-square-mile "dead zone" in the Gulf of Mexico — a condition termed hypoxia, where there is no dissolved oxygen in the water.

River wildlife

The boats load and the tour continues. For seven miles the teachers explore the backwaters and admire verdant bluffs rising 500 feet above them.

Some 292 different species of birds rely on this river route. Waterfowl and shorebirds follow the north-south migration corridor. Neotropical songbirds use the forested blufflands and backwaters for food, rest and shelter during summer, then return to Central and South America as the forests paint the valley with the coming fall colors.

The lead boat slows and churns through a sandbar; the others find deeper water and ride on. They come across an island recently formed by the river itself. Continual change brings an object lesson. The teachers step onto "new" land and explore turf that only days earlier was underwater. Small sprigs of greenery peek through the sand. Shorebirds cry warnings as the people amble about. Eventually someone spots a line in the sand, then another, and another. Several people guess what made these tracks. Then a cry rings out. "It's a clam! I found it buried at the end of one of the trails!" These were tracks made by freshwater mussels seeking deeper water as the river dropped and exposed the island.

(above left) A wide variety of amphibians, fish, mammals and birds thrive along this great corridor stretching from Minnesota to the Gulf of Mexico.
(left) Resource managers from several state and federal agencies describe the cooperation and coordination needed to manage such a long riverway, flyway, drainage basin and transportation route.

Someone asks about the fate of mussels stranded on the island. They already know the answer: Those that don't escape to water will eventually be eaten or die.

Washboards, buttons and pearls

The chance discovery of mussels opens a discussion of another connection between people and the river, past and present. Mussels play an important role in the Mississippi River's environment. They anchor the bottom in place, provide food for fish and wildlife, and are an important commodity on the world market.

Kurt Welke, a biologist and mussel enthusiast, takes out an old, heavy washboard mussel shell and passes it around. The shell has several dime- to quarter-sized holes cut from it. He explains: Beginning in 1891, mussels from the Mississippi were harvested as raw material for an international trade in buttons. As with most natural resources at the turn of the century, mussel shells were viewed as an unlimited resource; millions of pounds of shells were sent to factories in many towns along the Mississippi. The invention of plastic put an end to this lucrative business, but 60 years of harvest had greatly depleted mussel numbers.

Today, Mississippi River mussels are again in great demand. Tiny plugs of shells are cut and polished into beads implanted into oysters as the nucleus or center of cultured pearls.

"How are they harvested?" a teacher asks.

Kurt wades out into the water, disappearing below the surface. When he pops up, he's holding a handful of mussels he found burrowed into the bottom just a few feet from shore. Before long, the water is alive with

(above) A line in the sand leads to a mussel and some great history.
(below) The teachers wade right in to dig into mussel biology for themselves.

teachers discovering the wonderful variety of life hidden just below the surface of the Mississippi River. □

Jeff Janvrin is a Mississippi River Habitat Specialist for the Department of Natural Resources in La Crosse, Wis. If you are interested in attending an Exploration of the Mississippi River workshop, send your name and address to: Jeff Janvrin, DNR, 3550 Mormon Coulee Road, La Crosse, WI 54601.

Angling for wigglers, worms & hoppers

How to bag the baits fish will bite.

Robert Manwell

After a morning of hanging bait over the side of a boat without a nibble, it's hard to believe fish are omnivorous, but anglers know better. Take a stroll through a bait shop and you'll see an amazing array of natural and artificial lures — a small sample of the huge variety of aquatic insects, terrestrial bugs, reptiles, amphibians, worms and other fish that mean dinner to your intended quarry.

Just what makes a fish bite a bait is not entirely understood. Scent and vibration are thought to be important; so are vision and motion. But every angler knows of successful baits that would never naturally appear in the fish's world, except at the end of a hook. The most popular live bait of all time, the worm, does not swim suspended of its own accord, yet almost any fish will eagerly gobble up a juicy night crawler.

At times, fish can be incredibly picky eaters; at others, they seem to strike anything that hits the water in their territory. Guessing just what they have a hunger for and placing it in the right place at the right time is part of the fishing game.

(clockwise from upper left) Earthworms, spikes, red worms (manure worms), and mealworms are all excellent fishing baits. Most worms are easy to dig up, collect and store. Spikes and mealworms are larval forms of insects most often used in ice fishing. All four of these baits should be stored under refrigeration.

A growing business

The size of the Wisconsin bait industry is startling. In 1992, the last year for which figures are compiled, state anglers and bait dealers spent an estimated $35,202,000 on minnows, worms, leeches, crickets and other live baits.

The growing size of the industry reflects the busy lifestyle of today's anglers. In gentler times, most people gathered their own bait. A trip to the fishing hole was preceded by a digging trip to the garden, a few moments catching grasshoppers or wading and seining among shallow lily pads.

Gathering bait is part art and part science. Properly handling a dip net, using a minnow seine or setting a leech trap is as important to success as knowing when and where to look for the bait. You need to learn how to attract bait, and how to keep it alive and healthy until you have a chance to use it.

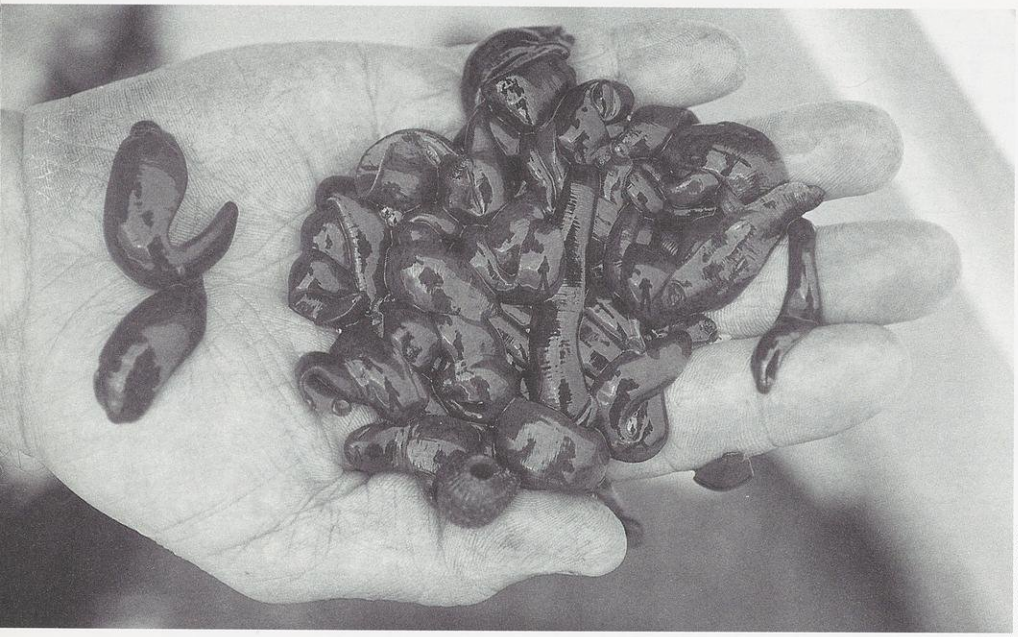
If you do a lot of fishing, you may want to consider raising bait. Propagating worms, minnows and other bait adds enjoyment to the sport. If you get more serious about it, there are laws regulating bait collection and production, especially if you intend to sell what you raise.

Things that crawl

The earthworm is a popular and easy-to-collect bait. Many natural baits attract only a few species, but nearly all freshwater fish eat worms.

Other worm-like creatures fish will eat are actually insect larvae, such as waxworms or "waxies," the larval form of the wax moth; "spikes," the larvae of the blue bottle fly; and mealworms, or beetle larvae.

Worldwide, scientists count some 2,000 different species of earthworm. The easiest one to collect, the common garden worm, is found in moist, fertile soil with lots of organic matter. If you have a spot that produces worms, you usually can attract more by laying a couple of boards on the ground. Pour dishwater over them until the soil is saturated and leave it alone for several days. The dishwater contains nutrients; the boards keep the area cool and moist. All you'll have to do is raise the boards and pick the worms off the soil surface. If you dig for worms, turn the



ROBERT QUEEN

Fish can be mighty picky, but the ribbon leech is a favorite food once the water warms up in late June. Pick ribbon leeches in small winterkilled ponds and ditches.

soil lightly with a garden fork so fewer worms will be cut or injured.

Collecting night crawlers takes fast fingers. As their name suggests, these worms mate and migrate at night. When the temperature hits 60–65 degrees, the skies are overcast and the ground is moist, it's time to hunt crawlers. New suburban developments in former farm fields provide great picking; other good bets are parks, golf courses and lawns where the grass is short and well watered. If the soil is dry, the night crawlers will go far underground and won't come to the surface.

To gather crawlers, you have to see them. A flashlight works well, but a headlamp is even better because it leaves your hands free for picking. Bright white light drives night crawlers underground. Cover the lens of your flashlight with red cellophane or use a dim light. Walk softly: Worms are very sensitive to vibration and will retreat if disturbed. Consider carrying a small can of sawdust to keep your fingers dry.

When you spy a night crawler, only a small portion usually sticks out of the ground. Grasp it quickly just below the collar — the thickened, lighter colored portion about one-third of the way along the body. Don't jerk the worm from the ground; it will break. As you grab the worm, it will contract the muscles in its tail and try to escape. Just hold on gently until the worm relaxes, then you can easily pull it from the ground without damage.

You can carry worms in almost any container with some soil from the place where you picked them. Keep the worms cool and moist, but not wet. "Worm Czar" George Sroda says night crawlers prefer to be very cool, 50° F or a little less. In warm summer weather, this means keeping your bait in a cooler with ice or freezer packs.

Leeches

Of the 50 or so species of leeches found in the United States, only *Nephelopsis obscura,* the ribbon leech, is commonly used as fish bait. The ribbon leech is not a blood sucker. In fact, most leeches don't suck blood; they prey on aquatic worms and insect larvae or scavenge dead animal matter. Fish apparently know the difference too. Leech expert Phil Devore says that in side-by-side tests, fish will gobble up a ribbon leech and spit out a blood-sucking leech.

Collecting ribbon leeches is easy. "You have to find a winterkill lake or pond with no game fish," says Devore. These shallow water bodies freeze all the way to the bottom or are so oxygen-starved under the ice that all game fish perish. How the leeches survive under these circumstances isn't well understood, but that's where to look for them. Leeches have a two-year life cycle. The adults spawn in early spring and die as water temperature climbs in late June and early July. "The collecting season runs the following spring from ice-out through the first week in July," says Devore. "If the water remains cool, a few adults may last a bit longer. Consequently, there's a real shortage of leeches in August and September."

You can make a leech trap from a one-pound coffee can or a large soup can. Bait the can with chicken, beef or turkey liver. Pinch the top of the can shut, leaving a few small openings. In early evening, stake or place the trap in knee-deep water with a muddy or silty bottom. Use some kind of a marker to guide you back. You'll have to return early the next morning, preferably at or before sunrise; the ribbon leech is a nocturnal scavenger and it will leave the trap if you don't get back early the next morning.

Leeches will stay fresh in a refrigerator for several days. Bait stores sell small, inexpensive foam storage containers with thick, insulating walls. Change the water every few days, but don't feed the leeches as this will foul the water. Leeches lose some size and bulk after a week or so. Once they get soft, it's harder to keep them on the hook when you cast, so only buy or pick as many as you can use within a week.

Waxworms

This "worm" is really the larvae of the wax moth. In the wild, the moth lays its eggs in weak or diseased bee colonies. The eggs hatch and the larval waxworms consume the honey and the honeycomb, eventually destroying the colony and driving remaining bees out. Healthy colonies can drive the adult moth away.

For the die-hard bait collector, a wild bee hive is a rare find and deter-

mining if it contains waxworms is risky. Outside of bait shops, the most likely sources of waxworms are bee-keepers who discover worms in their colonies. Chances are the apiarist will eagerly give away the pesky worms to get them out of their hives.

Growing your own waxworms can be tough, too. In recent years, a virus has plagued the commercial waxworm stock. The virus was originally introduced in Canada as a pest control method for the bee-keeping industry, but the organism escaped and is now found in Wisconsin.

Catalpa worms

This moth larva, commonly referred to as a "worm," is legendary among baits. The worms appear only sporadically, and collection is difficult. The catalpa worm reaches three inches in length and sports bold black and green stripes. The catalpa tree is a bit north of its normal range in Wisconsin, but you see a few scattered in yards, parks and farms. The tree grows taller than 40 feet and has huge leaves with long stringy pods that look like foot-long green beans or vanilla beans. If you've spotted catalpa trees, talk to the owner and ask to receive a phone call if the trees leaves begin to look chewed up. Catalpa "worms" are larval sphinx moths. To use them as bait, you need to cut the worm in half, turn it inside out and thread it on your hook. The scent attracts fish, particularly panfish and catfish.

Water insects

Insects that spend most or part of their lives in the water are a staple in many fish diets. They go through either three or four stages in their life cycle from egg to adult.

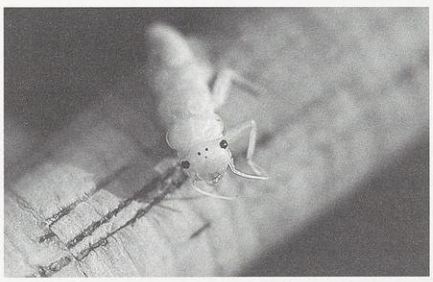
The immature form of a water insect, known as a "nymph," is the second of three stages: egg–nymph–adult. Nymphs somewhat resemble the adult in shape and body hardness. The immature forms of dragonflies, mayflies and stone flies are called nymphs.

When we collect insect "larvae," we are taking the second of four stages: egg–larvae–pupa–adult. Larvae usually don't resemble the adult insect and are soft-bodied. The immature forms of caddis flies and dobson flies are larvae.

One of the most popular aquatic insect baits is the dragonfly nymph. Many anglers and bait shops incorrectly call this nymph a "hellgrammite." The name "hellgrammite" truly refers to the larvae of the dobson fly.

Collecting dragonfly nymphs is easy and requires little in the way of equipment. Stan Reif, who has collected them for 40 years, uses a PVC frame about 20 inches square with a window screen on the bottom to catch the bugs. A plastic dishpan on a piece of cord floats along behind him to corral what he catches. With a pair of waders and some insect repellent, Reif is all set. The whole rig, with the exception of the waders, looks like it cost about $2.98, but it works great.

Stan says the best places for gathering dragonfly nymphs are in seasonal ponds that dry up each year and then form again with the spring rains. "These are good because they don't have any fish and they attract fewer ducks and other birds that would get the bugs before I do."



LARRY MISHKAR / PICTURESMITH

Stonefly nymphs can only be used for bait in the streams where they are found.

A good pond will have vegetation along the edges or is shallow enough that vegetation grows in the middle too. The bugs hang on to the submerged stems and foliage of the plants.

Stan works along the edge of the vegetation gently pushing over the grasses with his collecting frame using a scooping motion. He says he's gotten as many as 50 nymphs in a single scoop.

"It's very important to work with the grain of the grasses," he says. "You want to work the grass in the same direction the wind has blown it. Pushing against the natural lay of the vegetation tears it up by the roots. Once the habitat is gone, so is the bait. A good site can be worked every four or five days for an entire season as long as you don't destroy the habitat."

Reif scouts ponds first, scanning the surface with field glasses, looking for the dragonfly adults skimming low over the water. "If I see adults over a pond I know there'll be nymphs within about a week," Reif said.

Keeping live nymphs can be a problem. "Once they get hungry they'd just as soon eat one another as something else," says a Madison area bait retailer. The dealer recommends layering a few nymphs at a time in a bucket with marsh grass between the layers and keeping them in a refrigerator until you go out to fish.

"If you try to keep them for more than about three days, the next time you look in your bucket all you'll see is one helluva fat hellgrammite and a bunch of parts," our dealer said. Is it worth the trouble to collect them? "When they're available, hellgrammites are one of the best live bait you can have. You can break 'em in pieces instead of using a whole insect; the fish don't seem to care."

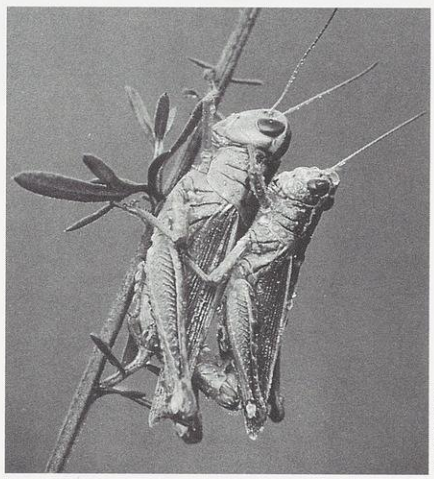
While the season for collecting dragonfly nymphs is usually limited to July through September, the bugs can be frozen and kept for winter ice fishing. "Put 'em on newspaper; pat 'em dry so they don't stick together; pop 'em in a plastic bag and toss 'em in the deep freeze," says Stan. "You may or may not want to tell your spouse what's in the freezer!"

If you want to search for the true hellgrammites, the dobson fly larvae, look under submerged rocks in the rapids or riffles of a fast-moving stream or river. They can be gathered by holding a wire screen or net downstream and turning over rocks, releasing the larvae into the net. Hellgrammites can reach three inches in length and have a pair of pincers that can deliver a painful nip, so handle them carefully. It's easier if two anglers

cooperate: one lifts stones and the other works the net. You'll often find these insects clinging to the underside of rocks. Hellgrammites will keep quite a while if you can provide running water and feed them a little ground meat to prevent cannibalism. Legally, you can use the true hellgrammites you collect only in the stream where you caught them.

Land insects

Given the opportunity, fish will eat a huge variety of land insects. Grasshoppers have been used for bait forever.



JOHN WEBER

Grasshoppers are an excellent late summer bait. They are easy to catch on cool mornings before the dew dries.

They are most numerous and largest during late summer and early fall. It's up to the angler to experiment and find out which species are most popular and productive. Hoppers are easier to catch in the morning before the dew has evaporated, when it's cool and they are still sluggish. You can catch them individually by hand, or use a fly swatter to gently pin them down for capture. Another method is to spread out a wool blanket and walk through the grass, herding them toward the blanket. The grasshoppers that land on the blanket get their legs tangled in the wool fibers and will be easy to grab.

Gall worms are insect larvae found in galls — the spherical swelling on plant stems. The gall forms after a fly lays a larva in the stem and the plant walls off the area around it. Look for galls in stands of goldenrod. These larvae are good panfish bait and they are available in late fall when other kinds of wild bait are dead or burrow deep in the soil. Collect the galls in the fall and store them in a cool dry place. Don't let the gall warm up or the larva will think it's spring and will crawl out. When you need bait, cut open the galls, collect the small white larvae, and go fishing.

Fish as bait for other fish

Next to digging in the garden for worms, many anglers' earliest memory of bait collecting is dipping for minnows. Fish love to eat other fish and collecting minnows is often easier and less work than digging for worms.

Fathead minnows, white suckers and golden shiners are popular bait fish in Wisconsin. It's possible, but difficult to find these fish in the wild since any game fish or panfish in the same lake will eat them up. If you do go on a minnow hunt, look for fatheads and golden shiners in winterkill lakes that have few or no predatory fish.

Most of the fathead minnows found in bait shops are collected in Minnesota from winterkill lakes. Golden shiners come mainly from growers in Arkansas. In-state growers may truck in a load of shiners and place them in a rearing pond or tank to fatten them for a season. A good grower can bring a minnow to a given size and weight in one-fourth the time it takes in the wild.

In Wisconsin lakes and streams you are most likely to find common shiners, long-nosed dace, red-bellied dace, mud minnows and suckers. There are a couple of devices to catch the small quantities an angler or family would use: minnow traps, drop nets or umbrella nets.

Minnow traps are cylindrical, double-ended wire mesh funnels that narrow in the middle. They work on the principle that a small fish will swim into the trap to find food and is unable to find the way out. Minnow traps are baited with a sticky mix of oatmeal or cornmeal rolled into a golf-ball-sized clump. The ball slowly breaks up providing fresh bait for long periods. Suspend the trap near a dock, on a stream, or at the head of a pool where the current slows. Check the trap at least once a day.

A drop net or umbrella net provides more immediate results. The square net about 36 by 36 inches is held open by a springy frame. There is a bit of technique to lowering the net off a dock just deep enough so you will attract fish, but shallow enough that you will trap minnows drawn to your bait. Let the kids sprinkle some bread crumbs over the net and wait for the minnows to move in.

Keeping minnows alive

Most anglers don't keep minnows long enough to worry about feeding them. Minnows do need plenty of oxygen to stay alive and lively. Perforated floating bait buckets can be dropped over the side of a boat or dock to allow a constant flow of fresh water. For solid bait buckets, a battery-powered aerator or an aerated livewell in the boat will keep bait alive all day. If you are fishing for several days, split your minnow supply among several floating bait buckets and only take a few dozen with you on each outing.

If the water warms up or if the temperature difference between your bait bucket and the water is too extreme, minnows will die from shock. On hot summer days, keep your minnows shaded and add a few ice cubes to the bait bucket to cool the water and add oxygen as the ice melts.

Collecting bait legally

Many laws regulate the collection and use of live bait. Check the state fishing regulations and trout regulations before contacting a DNR fisheries manager or conservation warden. If you intend to sell bait, then you need a dealer's license. Those younger than 16, can sell up to $500 worth per year before needing a dealer's license.

In general, individual anglers do not need a license to collect most baits for personal use, but there are exceptions. Anglers do need a fishing license to use the bait. Also, the bait laws do

not regulate all the things fish will eat: worms, mature insects and leeches are not considered "bait," but minnows, frogs, insect larvae and crayfish, are.

There also are restrictions on types of equipment you can use to gather bait and limits on where collected bait can be used. For example, insect larvae cannot be removed from a trout stream, but a licensed angler can collect larvae and use them on that same stream. Unused bait cannot be released into any state waters. This rule is designed to stem the introduction of exotic species.

(BOTH PHOTOS) ROBERT QUEEN

Several dragonfly nymphs are called hellgrammites. Their peppery odor is irresistible to panfish, especially yellow perch. You can seine them in shallow spring ponds with lily pads or grasses. Don't take them all!

Damage to the environment?

It's unlikely that an angler collecting bait for his or her use would do much damage to the environment. Just use

Bait is big business

ROBERT QUEEN

Commercial dealers raise some bait from eggs. Others, like these suckers, are trucked in and fed until they reach fightin' weight.

Aquaculture is the controlled raising of aquatic organisms in ponds, tanks, raceways or some form of net or pen that gives the grower control over environmental conditions. Fish raised in this way can be grown to marketable size three to four times faster than in the wild.

Wisconsin's diversified aquaculture industry raises fish for food, stocking and bait. Aquaculture in Wisconsin is a $60 million a year retail business and is growing by 20 percent a year. Bait accounts for $35,000,000 of total retail sales.

Most of Wisconsin's aquaculture businesses are small. In 1994, some 61 percent of these businesses reported less than $10,000 a year in sales and employed three or fewer people.

Aquaculture supplies some of the demand for bait fish, but a large portion is still harvested from wild populations, and this causes some concern among fish managers and conservation law enforcement officers. Wild harvesters use large seines that harvest game fish along with the minnows they seek. Responsible gatherers immediately release game fish, but there is usually some accidental capture and death. Also, removing large numbers of minnows from a lake or stream reduces the natural food necessary to sustain a healthy game fish population.

When asked if aquaculture could supply all the needs of the bait and fishing industry, Tim Gollon, of Gollon Bait & Fish Farm, replied that it could...*if* anglers would settle on a few of the more readily available species.

"We just don't know enough about some species to raise them commercially at a price anglers would be willing to pay," Gollon said. "The emerald shiner is one of the more popular bait fish in Wisconsin, and it is totally harvested from the wild. We can raise them commercially, but we can't do it for the same cost as wild stock.

"One thing we can do is carefully control food, temperature and breeding to produce 'improved' versions of familiar fish. We can grow them larger and faster so they will better survive in a bait bucket, and be more vigorous on the hook. As anglers and bait dealers become more aware of these improved bait fish, we're hoping that demand for wild bait will diminish and ease pressure on the natural systems."

(PHOTOS THIS PAGE) ROBERT QUEEN

The bulging stem of a goldenrod is a gall that contains yellow round larvae. Collect them in fall, keep them cool, then cut the gall open to extract an excellent ice-fishing bait.

Commercial bait dealing raises more than $35 million annually in Wisconsin. Fathead minnows are a favorite of game fish.

some common sense and tread lightly. At water's edge, walk the stream beds and lakeshore carefully. Don't remove logs, branches or other natural debris from streambanks. Don't uproot or damage aquatic plants and promptly release any game fish caught in a trap or net.

DNR fisheries expert Tim Simonson has two concerns about bait collection: "Introduction of non-native species into new habitats is our biggest fear and one of the things we have the least control over," he says. "That's one reason why it is illegal to release any unused bait into state waters. The other reason is that bait fish from out-of-state sources may have different diseases that could affect our native fish. Nonnative fish usually don't have any natural predators and their populations can quickly get out of control, taking over habitat and depleting food supplies for native species and game fish.

"The other concern we have is incidental killing of nonbait species. Nets and traps attract and catch all kinds of fish and it's vitally important that anglers distinguish between forage or food fish, and endangered, threatened or game fish species. Laws require that traps and nets be tended every 24 hours and that nonbait species be released immediately."

The large-volume commercial bait collection business is regulated. Unlimited harvesting could reduce populations of natural forage fish below the level needed to sustain popular game fish species in some waters. Since we can't accurately assess forage fish populations in lakes, it's difficult to assess the populations of "bait" fish that need to remain in a lake to sustain panfish and game fish. It's equally difficult to know when bait fish have been overharvested, except in hindsight if the game fish populations start to decline.

Given a choice, fisheries managers and conservation law enforcement officers would prefer that all minnow and insects sold as bait were raised commercially under controlled conditions. While this is the case for some insect baits, leeches, and some minnow species, aquaculture and bait culture industries cannot keep up with current demand for bait. Other baits can't be raised economically compared to their natural counterparts, and still others are difficult to raise commercially at all.

Sure, it's easier to drive down to the local bait store and buy a dozen fatheads or worms, but catching your bait can be nearly as much fun as catching fish, and it will give you something to talk about if the fish simply refuse to bite. □

Robert Manwell writes about environmental issues and the outdoors for DNR's Communication and Education program in Madison, Wis.

A STEAL?

ALMOST!

Name .....

Address .....

City/State/Zip .....

6 issues/year

- ☐ 1 Year – **$8.97**
- ☐ 2 Year – **$15.97**
- ☐ 3 Year – **$21.97**

- ☐ Payment enclosed.
- ☐ Bill me.

Save

over half the newsstand price by subscribing to

WISCONSIN NATURAL RESOURCES

***Wisconsin Natural Resources* magazine**

Published bi-monthly. For faster service call our toll-free number **1-800-678-9472.**

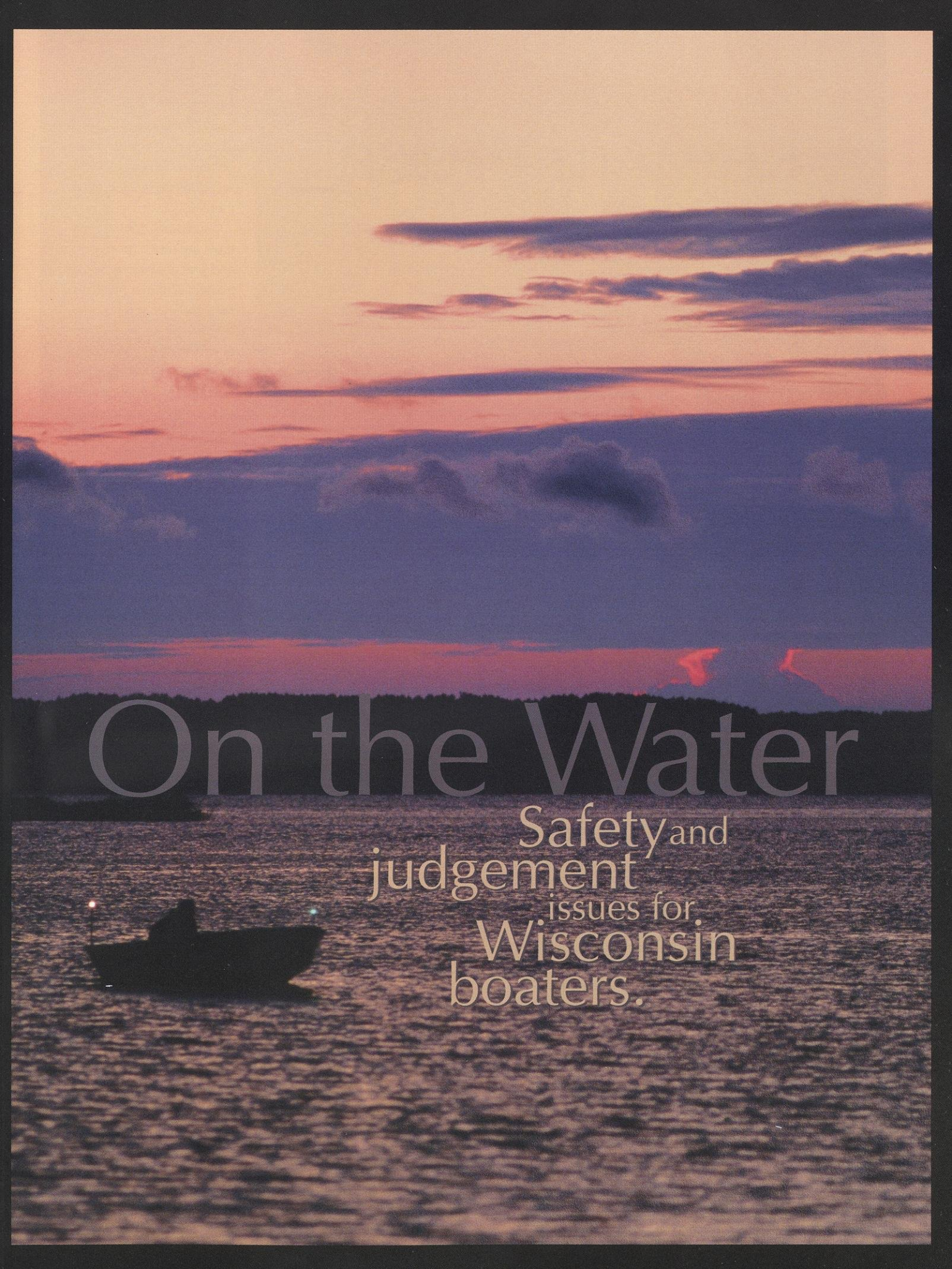
Subscription information you provide may become part of a mailing list rented to reputable companies to help support the continued production of the magazine.

JMJ75

PLACE
STAMP
HERE

WISCONSIN
NATURAL RESOURCES

POST OFFICE BOX 7191
MADISON, WI 53707–7191


On the Water
Safety and judgement issues for Wisconsin boaters.

Keep in touch

Safety and communications on the water is no accident.

William G. Engfer

Microchip technology offers boaters a host of tools to find a location, plot a course and call for help. The right combination of navigation and communications equipment for your boat depends on when and where you travel. Those who plan to be on water at night can use electronics to help "see" where they are and where they are headed. Those who cruise the Great Lakes and the big rivers need to contend with bigger boats and commercial traffic. You need to balance what you ought to carry against what you can afford.

The acronyms of navigation equipment — GPS, DGPS, LORAN, EPIRB and others — are becoming commonplace in the boater's vocabulary. GPS, or Global Positioning Systems, are electronic receivers that can accurately pinpoint your location worldwide. The devices triangulate positions by receiving signal beacons from satellites. Once the navigator enters the GPS location of known landmarks, the GPS system notes your location and speed to compute the distance, direction and time it will take to reach each "waypoint" on the course. Most GPS units can store from 100–1,000 different waypoints. You can use the device to find a launch site, a pier or even a favorite fishing hole.

DGPS or Differential Global Positioning Systems are even more accurate — they read signals from Coast Guard beacons on land in addition to satellite information and can pinpoint locations to within five to 10 meters. GPS and DGPS systems range in price from $200–$800. The fancier models show digital displays of maps and have electronic compasses. Bigger isn't necessarily better: You might find all the features you want in a small hand-held unit as compared to a larger mounted system.

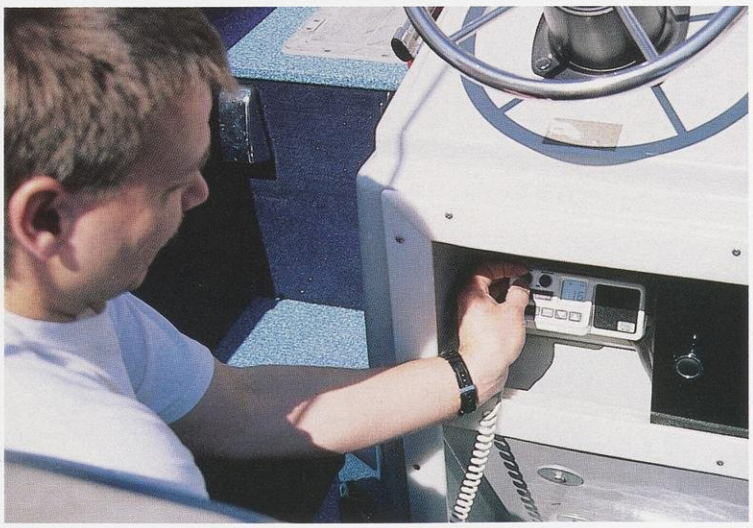
LORAN (Long Range Aid to Navigation) systems are valuable, but less popular these days. They provide accurate longitude and latitude readings the skipper must interpret on navigational charts to plot a course.

An EPIRB is a cross between a navigational and a communications tool. Emergency Position Indicating Radio Beacons send out distress signals that can be picked up by satellites if your boat is out of range of cellular phones and VHF marine radios. They transmit an electronic blip to aircraft, satellites, rescue vessels and land stations monitoring emergency frequencies. These signals are relayed to emergency responders who can compute a "fix" to find boats in trouble. Usually only ocean-going vessels and boaters who travel to remote locations carry such equipment.

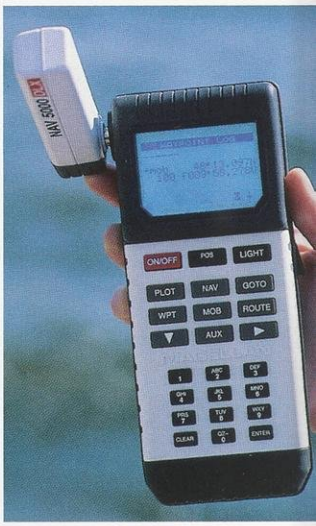
Two other communications tools are much more common and practical for recreational boaters. Cellular phones offer convenience and a sense of security on water. Signals travel very well over water and most areas of Wisconsin are covered by cell phone service. VHF communicating radios, often called "marine band" radios, keep boaters in contact with other boats they can see. These radios are an excellent choice for boaters on the Great Lakes and the Mississippi River, where many vessels use them and the Coast Guard monitors emergency frequencies. The height and length of the radio antenna is as important as power in determining the distance over which communications will be understood.

What equipment should you select? Shop around and pick up copies of marine supply trade magazines with

Communications and navigation equipment for boaters are both powerful and portable. Consider a VHF radio *(left)* if you travel on big waters with heavy traffic. A hand-held GPS system uses satellite technology to plot your position and course whether you are headed home or to a favorite spot.



ROBERT QUEEN



ROBERT QUEEN

Useful safety items for all boaters *(clockwise from left):* A marine fire extinguisher, day and night flares, a horn, a flashlight, a portable GPS unit, simple hand tools, a flare gun, a life vest for each passenger and a compass.

product reviews and helpful essays on the advantages and limits of various features.

What is the minimum equipment you should keep on your boat? I recommend at least the following safety and communications gear:

- One set of day and night flares $28
- A boat horn that works on compressed gas canisters $5
- Flashlight, screwdriver and pliers $5
- Life jackets for every passenger, cushions, anchors, paddles, mooring ropes, tow rope, boat bumpers and running lights $150

Why the simple tools like a screwdriver and pliers? You might be surprised how many on-water problems can be repaired with these basic tools. Boats that spend most of their time in storage can develop mechanical problems after only a few hours use.

If you want to invest a little more over time, add a good spotlight to help you see at night, a larger tool kit and perhaps some of the more elaborate communications and safety devices.

Prepare yourself! Take a boating safety course to learn the rules of the water and how to handle the equipment discussed here. The vital link in every safe outing is a boat captain who is confident and knowledgeable in an emergency.

William G. Engfer administers Wisconsin DNR's boating law and education program.

DNR BUREAU OF LAW ENFORCEMENT

JEAN B. MEYER

Skippers of all ages benefit from boating education courses that discuss how to use safety equipment, how to interpret warning buoys, safe navigation rules and boating judgement.

Stay afloat, stay alive

The right life jacket is the one you wear.

Bart Halverson and John Lacenski

DNR BUREAU OF LAW ENFORCEMENT

Boating safety instructors have been teaching conservation wardens and other instructors for more than 30 years which life jackets are most appropriate for each boating situation.

The majority of people who die in recreational boating accidents fall overboard or capsize in their boats. Once in the water, even an experienced swimmer can quickly fatigue, suffer hypothermia, lose coordination and drown.

Life jackets or PFDs (personal flotation devices) save lives, but only if they are worn. The life jacket stowed below deck or jammed into a storage space is of no use. Make sure that everyone on board has been fitted with a properly-sized life jacket or float coat, and wears it.

When shopping for a life vest, jacket or float coat, read the label carefully. The U.S. Coast Guard approves four types of vests and coats:

Type I is an "offshore jacket" rugged and buoyant enough (22 pounds) to help in rough seas where rescues may be slow. Many contain a float collar that will turn the unconscious wearer face-up in the water. This type offers good protection, but many boaters consider them bulky and uncomfortable to wear.

Type II is called a "nearshore buoyant vest." It's fine if you are boating near shore where chances are rescue will be swift. It's more comfortable than Type I but less buoyant (15.5 pounds) and it's not rugged enough to keep you afloat for an extended time in rough seas.

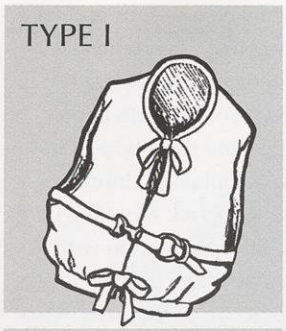
Type III is called a "flotation aid" and it's the most commonly used vest by water skiers, kayakers, anglers and sailors. It is pretty comfortable and has moderate buoyancy (15.5 pounds). It's a good choice on lakes and rivers where the chance of immediate rescue is good. The wearer must tilt his or her head back to avoid the face-down position in the water. Skiers often wear a more rugged Type III vest that can take the impact of hitting the water at faster speeds. Float coats, which look like insulated raincoats, offer Type III protection in an insulated, warm, waterproof coat that's a good choice for cold-season boating.

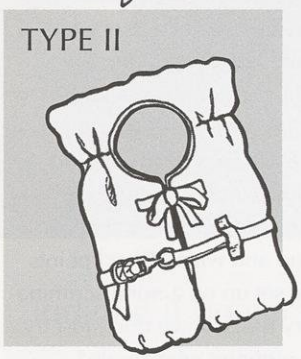
Type V protection is for "special use devices" — sail-

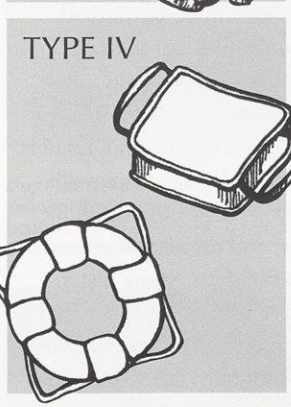
U.S. COAST GUARD

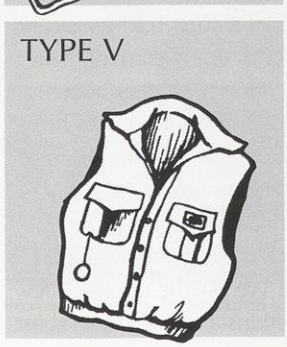
ROBERT QUEEN

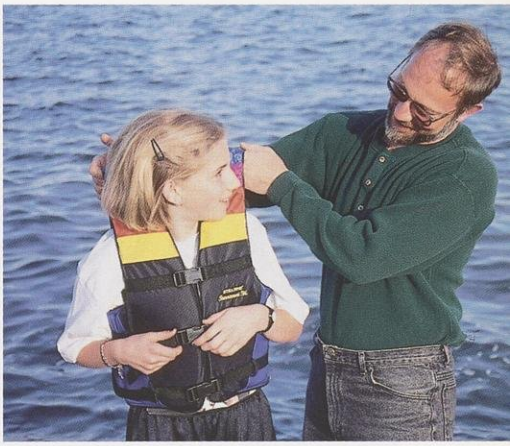
Infants and toddlers need life vests that keep their head above water at all times. Colorful vests are more visible in the water and they are fun to wear!











ROBERT QUEEN

Test how life vests fit your growing children each season. If the fit is right, the vest will rise less than three inches when you lift it by the shoulders. This one is a bit big.

boarding harnesses, deck suits, commercial fishing vests, whitewater rafting vests and other specialty vests.

The Coast Guard has approved several types of inflatable vests as well, which are especially lightweight and comfortable.

I'll bet you thought we couldn't count! Type IV devices are "throwable devices" like cushions or rings. They will certainly help someone who has fallen overboard, but they are not of much help to unconscious victims, nonswimmers or children.

Speaking of kids, it's a great idea to introduce them early to the joys of swimming and boating. They will enjoy it more if they feel safe. The American Pediatrics Society reports that drowning is one of the top causes of child death, and that children under the age of seven can't properly put on a life jacket without help. Parents and adults need to set a good example and encourage the use of life vests. Water wings and other swimming aids are not safe substitutes for life vests.

Children's life vests are sized by weight range — under 30 pounds, 30–50 pounds, 50–90 pounds and over 90 pounds. Get the right size and don't skimp by buying a vest your child can "grow into." If it's too big, it can slip off in the panic of an emergency. Some vests specify chest sizes. Measure the child around the chest just under the armpits for the right fit. It's best to have your child with you when you shop. Fasten the vest snugly, then lift the vest up by the shoulders. If it gives more than three inches, it's too big. Many children's vests are equipped with crotch straps to keep the vest in place. Vests for smaller children also have a wide collar that floats and keeps the child's head above water, face-up. Some also have a wide strap at the back of the collar that you can grasp with a boat hook in an emergency. Choose children's vests in high visibility colors so your child can be seen in the water.

Encourage children to test their vests in shallow water so they can feel comfortable wearing them and will trust them in an emergency.

Wear and care

The buoyancy and life-saving value of life jackets decreases over time. Check jackets before each boating season and at least twice during the boating months. Check that all straps and buckles work. Look for fraying seams and weakened shoulder straps.

Store your life jackets in areas with good ventilation and hang jackets up in a shady spot to dry them after each trip. Mildew and mold can rot the fabric and the floatation foam. Don't ever wash life vests with detergents or solvents, or dry-clean them. This can harden or dissolve the foam and the vest will lose its buoyancy. Drying a vest in a clothes dryer can also ruin it.

Don't use life vests or boat cushions as kneeling pads or boat fenders. This can compress the foam and destroy the buoyant properties. Treat life vests carefully and wear them on board until it becomes a habit. You never know when your life might depend on it.

Bart Halverson and John Lacenski are DNR law enforcement safety specialists.

Alcohol and water don't mix

Alcohol impairs judgement on the water even more than on land.

William G. Engfer

DNR BUREAU OF LAW ENFORCEMENT

Horsepower can lead to dangerous horseplay. Fast speeds don't give you much time to react in emergencies. Stay safe and sober.

It's a Saturday evening in July and you are traveling across a beautiful lake after a full day on the water. Suddenly, a boat without running lights appears out of the darkness just off your bow. Before you can react there is a tremendous crash, the boat slams into yours as you lose consciousness.

Such horrible accidents are not common, but when they do occur, it's likely the other operator was under the influence of alcohol or drugs.

Some boaters believe waterways are the last frontier where they can drink and drive a vehicle. Research shows just four hours of exposure to sun, glare, wind, noise and rocky waves fatigues boat operators and slows their reaction times almost as much as if they were legally drunk. Add alcohol to that mix, and the risk of accidents increases dramatically.

A National Transportation Safety Board study concluded it takes only a third as much alcohol to impair a boater's balance, judgement and coordination, so having two beers on the water can impair your abilities as much as drinking a six-pack at a backyard barbecue. Many boaters who want to drink have the good sense to stay off the water or let another trained boater drive.

Intoxicated passengers are also a threat in boats. Drunken passengers can lurch and shift suddenly in the boat, push people overboard, fall overboard, throw things or otherwise distract the driver. Wisconsin law allows law enforcement staff to test the blood alcohol of boat operators. Our conclusions on intoxicated passengers are based on accidents we investigate and our observations.

State and local boat patrols have taken a serious approach to targeting areas where on-water alcohol and drug use is a problem. We both appreciate tips and react when citizens complain of drunken boating in their area. We combine that information with statistics of where past accidents have occurred and where we have arrested boaters who were operating under the influence of alcohol and drugs. Where it's warranted, we will set up checkpoints with as many as eight crews of law enforcement officers on land and water. Checkpoints are set up on a nondiscriminatory basis — we don't just try to pinpoint who "looks" drunk. Rather, we decide beforehand to contact every third boat, or other frequency.

We set up in a safe area where boats can be stopped without impeding traffic and near a spot where boats can be brought safely to shore. You might think checkpoints are set up just offshore of a restaurant, tavern or marina where alcohol can be purchased. Actually, we've found the "problem" areas are more often associated with places and times that prompt boaters to carry alcohol along with them — near islands, picnic sites, and on busy weekends and holidays. Many restaurants and taverns now actively promote designated boat driver programs to reduce problems near their businesses and consider the welfare of their customers and other boaters. Support from businesses helps promote safe boating throughout a community.

The average on-water check takes about three minutes. We ask the skipper a few questions and conduct a short

WILLIAM G. ENGFER

safety check. The law enforcement officer makes a series of observations before deciding if there is sufficient reason to suspect an operator is impaired by alcohol or drug use. When we observe boaters from a distance, we look for clues like reckless driving, irresponsible riding, flagrant drinking, speeding through "no wake" zones, loud behavior, improper boat lighting and reports from witnesses of dangerous or offensive behavior.

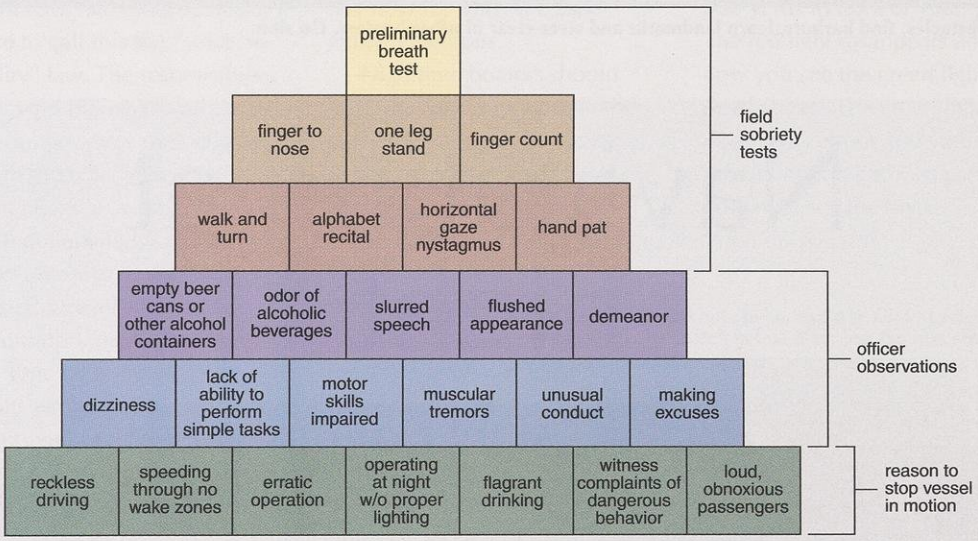
If the officer concludes there is a likelihood the boat operator is impaired, we use a variety of field sobriety tests and we carry a portable intoxilizer — a breath analysis device — that provides an additional clue before blood alcohol and urine tests are taken.

A few years ago, 80 to 90 percent of our fatal boating accidents were attributed to boat operators under the influence of alcohol. Now the figure has dropped to 25–30 percent. People are getting the message, but we're aiming to further decrease that percentage. Conservation wardens meet with and mail materials to school groups, civic groups, lake associations and boating enthusiasts to prevent boating and alcohol/drug problems.

We are serious about reducing the number of boaters who operate watercraft while impaired by drugs or alcohol. With 1.5 million boaters using our waterways each year, we must all remain sober operators to keep enjoyable recreation from becoming family and community tragedies.

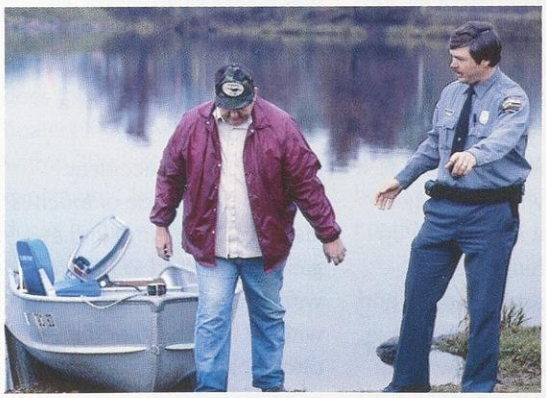
William G. Engfer administers DNR's boating law and education programs.

Judging if boaters are impaired



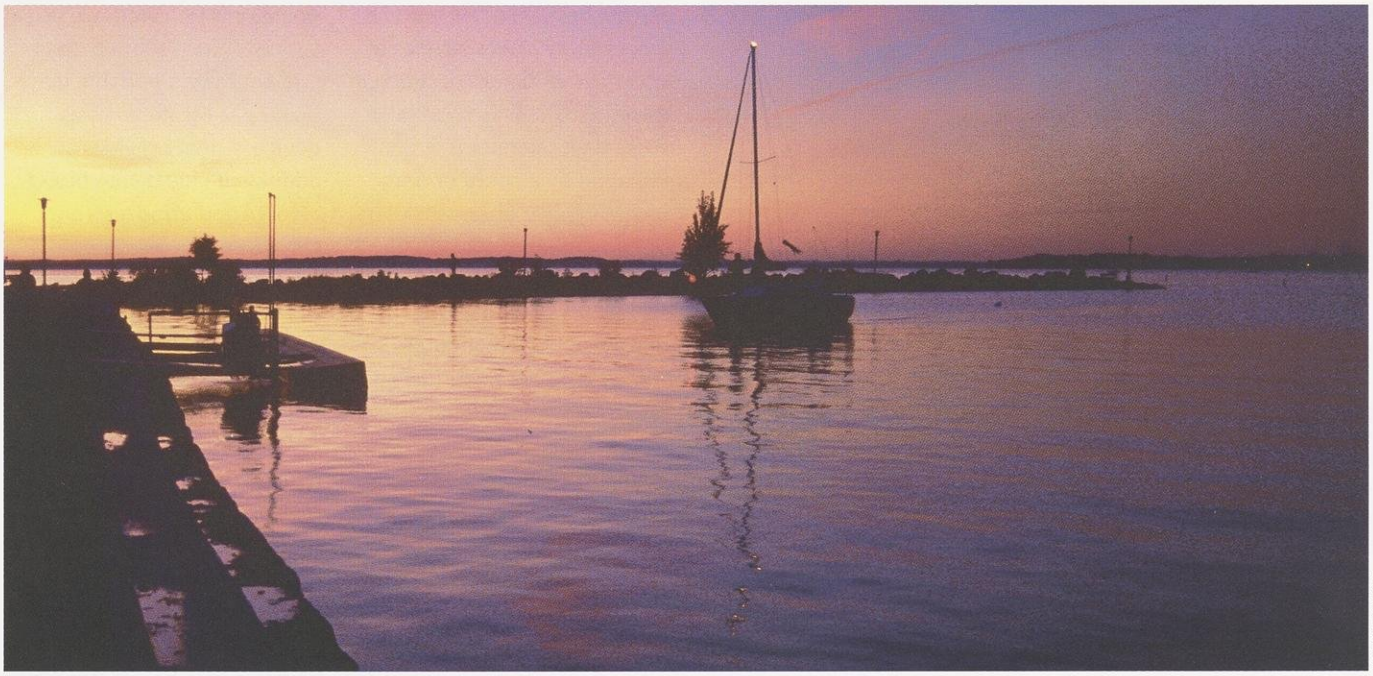
DNR BUREAU OF LAW ENFORCEMENT

***(top)* Intoxilizer tests give an on-water indication of sobriety.**
***(above)* Boat patrols observe boating behavior, interview skippers and conduct several field tests to determine if boaters are impaired by drugs or alcohol. The horizontal gaze nystagmus test is involuntary jerking of the eyes when one is impaired.**



DNR BUREAU OF LAW ENFORCEMENT

Boaters who may be impaired are escorted to shore for additional tests. Sun, wind and waves fatigue boaters. Don't impair your judgement further with alcohol or drug use.



ROBERT QUEEN

Darkness brings extra challenges to see obstacles, find harbors, learn landmarks and steer clear of other boaters. Go slow.

Navigating at night

When a boater's sight is diminished by darkness, the other senses must fill in the gaps.

Dean Gullickson

Operating and navigating a boat after dark is a different, more challenging task than night travel by car, ATV or snowmobile. First, there is no set trail, no road and no roadside markings. Second, the vehicle has no headlights to illuminate the path. Third, there are no brakes.

On the other hand, the boater chooses how fast to travel — and the right decision at night is SLOW.

The nighttime boater has to develop keen powers of observation to track the water and the weather. Night vision, a knowledge of the body of water, warning markers and subtle sounds all provide important clues.

Good night vision, in particular, is necessary to see obstacles in and on the water, to avoid land, to see bow lights, stern lights, mooring lights, warning buoys and navigational markers. Boat operators need to interpret the direction other boats are traveling based on the light combinations they see. Red lights show the left or port side of a boat. Green lights show the right or starboard side. On smaller boats, the red and green lights are right next to each other at the front or bow. On larger craft, the red and green lights are split, separated by the width of the boat. The white stern light must be raised and visible all around the boat.

As darkness approaches on water, sound becomes more important. You have to hear other boats. On both clear and foggy nights, you will often hear a boat before you see it. If motor noise whines and gets louder, a boat is speeding up and approaching you. As motor noise drops in pitch and volume, the boat is moving away from you. A slow, chugging sound can indicate a fisher who is trolling, perhaps trailing lines far behind and out to the side from the running lights. A boat whistle or horn is a call for help or a warning that you are approaching an accident.

A boater's sense of touch is also important for night navigation. You need to be familiar with your craft to reach down without looking to find the throttle, gear shift and ignition. In an emergency, you won't have time to look down for

these controls. The boater must learn the feel of the boat underway and needs to know how it operates in river currents or waves. You have to feel when you are towing an anchor, when the boat is on plane or plowing through the water.

To safely run a boat at night, you also must know boating laws. There are different lighting requirements for boats under 16 feet in length, over 26 feet and larger. Laws also require boaters to operate craft at a speed that is "reasonable and prudent" for conditions to avoid collisions with people, piers and other legal obstacles like moored boats. I like to call this the "strict liability" law. The responsibility to avoid hitting something in or on the water rests clearly with the boat operator. People can lawfully swim at night without any lighting. Piers don't have to be lit. Boaters need to travel slowly and avoid drifting close to shore.

One other boating law warrants particular caution — the anchored or drifting boat light law. Any structure fixed or floating on the water, any moored or drifting boat outside of designated anchorage or beyond 200 feet from shore, must be lighted from sunset to sunrise with a white light visible for 360 degrees from a distance of a mile. What clues does this give the evening boater? If you are traveling within 200 feet of shore, expect unlit boats, rafts and docks in the water. If you see a single light in the middle of a lake, it is likely a boat. These lights can be very confusing for the moving boater because they blend in well with white lights of roads and residences along the shore. Slow down until you are sure which lights are coming from boats and which are on shore, then proceed with caution.

The prepared boater also carries a spotlight at night. Warnings and channels are marked with unlit buoys covered with reflective surfaces. Rocky points, sandbars, protruding rocks and extremely shallow areas may not be marked at all. Bridges may be marked with lights, but many are just marked with reflective tape. In spring, floating logs and floating ice chunks pose an additional hazard. Low-head dams and wingdams in fast-flowing water are especially dangerous.

Nighttime boaters should be extremely familiar with the body of water they are traveling. Landmarks clearly visible during the day can disappear in the darkness. Operators need to learn a whole new set of nighttime landmarks — like lighted water towers or radio towers from nearby cities. Tall trees, rocky hillsides, valleys, open fields, shore lights and wooded shorelines can all provide good navigation clues. Harbors carry their own distinct beacon lights. Communications equipment and electronic positioning gear can also help you navigate with more confidence.

Can you cruise after dark?

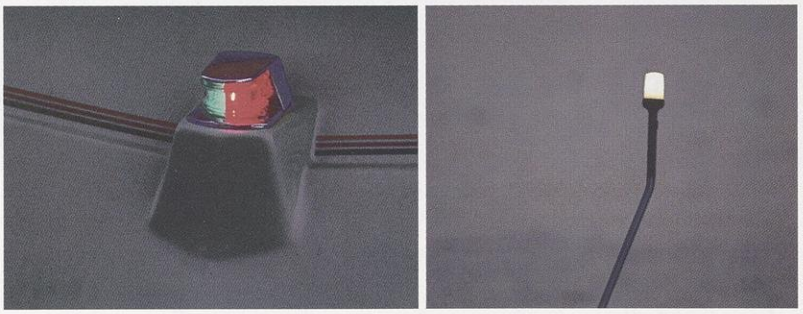
Then there are judgement calls. As difficult as night navigation can be, you need to remain aware of others who are boating at night. Test yourself in the following nighttime scenarios:

1. You are cruising in your 16-foot boat at about 30 mph on a lake that's five miles long and about a mile wide. You are in the middle of the lake and hear the high-pitched whine of a motorboat that is getting louder and louder. Directly in front of you but just off to your left you see a red light. About five feet left of the red light you see a green light. These lights are now about 300 yards in front of you. The red light disappears and now you see the green light dead ahead. The green light disappears about 200 yards in front of you and you can no longer see the boat. What do you do?

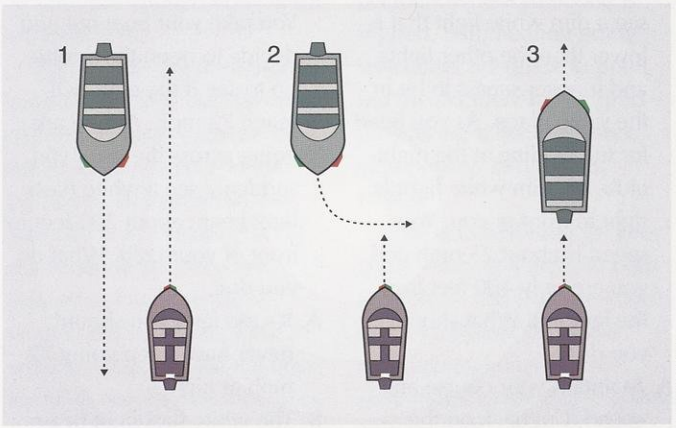
A. Maintain your course and speed because the boat is gone.
B. Increase your speed, keeping the same course to get out of the area.
C. Slow way down and be prepared to take evasive action.

If you said C, you are correct. First, you should have noticed a fair amount of width between the red and green bow lights, meaning you are dealing with a wide boat like a pontoon or deck boat. Second, the lack of a white stern light should have concerned you. It was either obstructed or not working. In either case, it's a clue you need to assess boat length and direction, so slow down. Third, when the red light disappeared and the green light appeared dead ahead, it means the boat is turning to its port side — it's making a left turn in front of

Carefully watch bow lights and stern light to determine where other boats are turning and heading. The sketch below diagrams the first scenario.



BUREAU OF LAW ENFORCEMENT



MOONLIT INK

you. As the boat turned and you still did not see the stern light, that confirmed the stern light was not working. When the green light disappeared about 200 yards ahead of you, you now knew you were coming up directly behind the boat. You only have 200 yards to take evasive action. Since you are the overtaking boat, you have the right to pass the slower craft on either side as long as it is done safely. Since you can't clearly see the stern, slow down and assess the situation.

When operating a boat at night, you must drive defensively and cautiously. In this scenario, the oncoming boat was not legally lighted. It's not unusual to find boats that don't meet night lighting requirements. I notice many pontoon boats with canopies that can totally obstruct the stern light, or the operator fails to install the light.

2. You are coming from a river into a flowage at 1:00 a.m. The flowage is about a mile wide and it is a dark night with no moonlight. In the distance, you hear a radio playing loudly. As you head toward shore, you see a string of bright, white lights all about the same height. From time to time, you also see a dim white light that is lower than the other lights and it never seems to be in the same place. As you head for the landing at the nightclub, the dim white light is right in front of you. Your speed is about 25 mph and you are only 400 feet from the landing. What should you do?

A. Maintain your course and speed. Cut back on the throttle about 200 feet from shore.

B. Immediately cut your speed and proceed with caution, there may be a drifting boat around 200 feet from shore.

C. There is no concern here. Maintain your course and cut back on the throttle at about 50 feet from shore.

B is the correct answer. At 1:00 a.m. on a flowage, the radio could very well be coming from another boat. The white string of lights is a building and the bobbing dim light moving at a lower level probably comes from a boat or boats at anchor. Due to the extreme darkness, the boat or boats may not be visible until you are within 50 feet or so. Play it safe and cut back your speed immediately. Remember, a boat within 200 feet of the shore that is drifting may not have any lights on, so take your time.

3. Earlier in the day, you finished putting a high-speed prop on your motorboat. The marina told you the boat could now do about 72 mph. It is now 11:00 p.m. and the lake is smooth as glass. It is a dark night and your night vision is restricted to about 50 feet. The lake is quiet and you can't see or hear any other boat traffic. You take your boat out and decide to open the throttle up to see if the craft will reach 72 mph. As you are going across the lake, you suddenly see a white flashlight beam about 200 feet in front of your craft. What do you do?

A. It's too late. You should never have been going 72 mph at night.

B. The white flashlight beam could signify a canoe or rowboat. Give them the right-of- way.

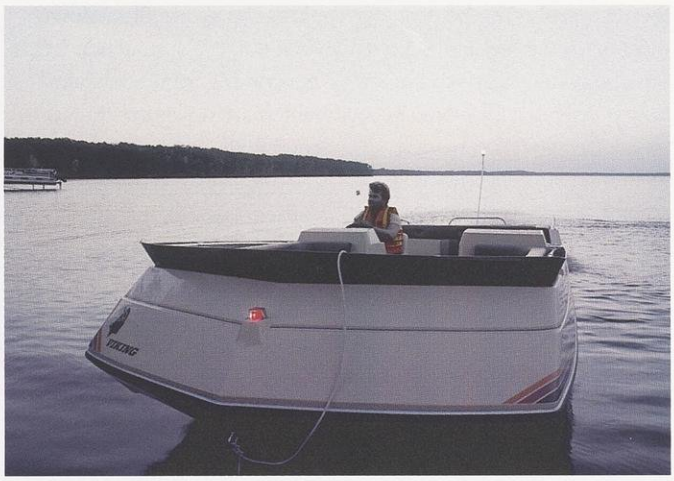
C. Slow down and pass to the stern of the boat.

D. All of the above.

If you said D, you are correct. At 72 mph, you are covering 105.59 feet per second. It takes three-quarters of a second for your brain to recognize the danger and another three-quarters of a second to respond. In this amount of time, you have traveled 158.39 feet. You have 41.61 feet to make a move and avoid the boat — less than half a second. Is it possible to avoid this boat? Yes. Is it likely? No.

Muscle-powered boats like canoes, kayaks and rowboats need only show a flashlight or lantern in time to avoid a collision. The rowboat showed its light 200 feet or two-thirds of a football field in advance of a possible accident. Muscle-powered craft and sailboats under sail have the right-of-way over motorboats, so you were required to yield the right-of-way to the rowboat and pass to the stern. Given that your night vision was restricted to 50 feet, you wouldn't distinguish the bow from the stern of the rowboat until you were within 50 feet and had less than a half-second to react. Clearly, you would have been exceeding reasonable, prudent speed and you seriously endangered yourself and anyone else on the water.

These three scenarios represent just a small fraction of the boating situations and judgements a nighttime boater will encounter. If you choose to operate a boat at night, remember these tips: Slow down. Know the boating laws. Know the body of water. Keep your senses sharp — fatigue, alcohol and drugs can be deadly for boat operators. Watch out for other boaters and obstructions. You don't want to be dead wrong.



BUREAU OF LAW ENFORCEMENT

Careful captains turn on their running lights early so they can see and be seen as dusk falls.

Dean Gullickson is a DNR boating safety instructor and a Conservation Warden stationed in Chippewa Falls, Wis.

The buzz over water bikes

New types of watercraft bring new on-water challenges.

DNR staff assisted by the Personal Watercraft Industry Association

Everything about personal watercraft (PWC) is happening *fast.* The boats themselves — water bikes or scooters powered by jets of water — can move along the surface at more than 40 mph. Sold under brand names like Jet Ski, WaveRunner and Sea-Doo, PWCs are by far the fastest-growing segment of the recreational boating market. In 1990, only 5,425 were registered in Wisconsin. By 1996, more than 22,350 had been registered, a more than 400 percent increase in just six years. This explosive growth along with traditional boat sales contributes to more crowded waterways. Combine crowding with many different, often competing, interests on lakes and rivers, and you have a foolproof recipe for creating conflicts on waterways.

Swift, maneuverable, and easy to use, PWCs provide a more comfortable ride in calm waters with small waves. Consequently, PWCs are used more frequently and for longer periods of time in nearshore areas. The shallow-draft bikes can operate safely in only two feet of water, but deeper water is recommended for safety, to protect vegetation, reduce erosion and reduce wear on the craft.

PWCs are popular with young adults who enjoy zipping along the water and taking their friends out for a spin. In the last five years, trends have changed and PWC use is now dominated by middle-aged men with families. Two- and three-seat craft are becoming more popular than the older stand-up variety.

Many PWCs emit a buzzing noise that is noticeable on shore. Engineered changes are addressing the issue, but the same people who tolerate exhaust gases and oily films from outboard motors seem to view the PWC as noisier and more irritating because its engine operates the whole time the PWC is in use and some riders frequent the same area for long periods of time.

PWC manufacturers are well aware of these issues and continue to develop designs that are less noisy. The Personal Watercraft Industry Association (PWIA) actively endorses the use of laws to measure and abate shoreline noises, as long as rules are applied equally to all watercraft.

Along with the tremendous increase in PWC use has come a corresponding increase in the number of PWC-related accidents. In Wisconsin last year, 47 of 112 boating accidents where people were injured involved personal watercraft. Statewide, PWCs were involved in about a quarter of all reported boating accidents. The PWC user is ten times more likely than other boaters to be involved in an accident where someone is injured. Still, boating safety specialists are quick to point out the accident rate is dropping as users become more experienced in handling PWCs.

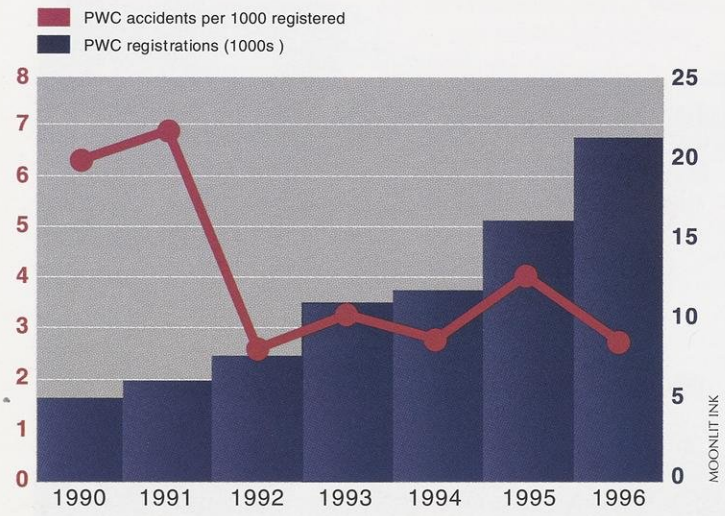
The accident rates for personal watercraft are also higher because the craft are under constant power, compared with fishing boats that may only motor to an area and then anchor, drift, or slowly troll.

JEAN B. MEYER

Boating safety courses include segments on personal watercraft use. These days adult riders are more common. Even those renting PWCs for a few hours should learn and follow safety tips provided.

CHRISTOPHER HUJANEN

More and more people are buying PWCs each year. The accident rate per thousand registered PWCs has dropped substantially as more owners take boating courses, learn safe operation and moderate their behavior.



MOONLIT INK

PWIA figures show personal watercraft are in use more hours per day and more days per season than motorboats — eight hours a month for PWCs, compared to just 2.3 hours per month use for the typical motorboat.

Manufacturers have formed strong partnerships with boating instructors and PWC retailers to develop safety information, videos and on-water instruction. Manufacturers now provide printed safety booklets and instructional videos with each PWC sold, according to Glyn Johnston, chairman of the Personal Watercraft Industry Association.

Since nearly 60 percent of the PWC accidents nationwide happen to boaters who are only renting a PWC for a few hours, the industry offers rental businesses free education packets including a video, waterproof safety checklist, posters and literature. The PWIA recommends outlets restrict rentals to people older than age 16.

The PWIA also works with the U.S. Coast Guard Auxiliary, the U.S. Power Squadron and state law enforcement programs to develop safety programs for PWC users. Since 1989, the industry has donated more than 4,200 craft to public agencies to teach safe operation, etiquette and behavior when using personal watercraft.

"It isn't that personal watercraft are inherently more dangerous than other types of boats," says Bart Halverson, DNR law enforcement safety specialist in Spooner. "It's the way a few people operate them that causes problems."

The PWC user is also more exposed, just as a motorcyclist is more exposed in an accident than an auto driver, Halverson added. PWC riders need to remain careful and cautious.

Personal watercraft are considered motorboats under Wisconsin law. The craft must be registered, operators must follow all safety rules and users have to carry safety equipment, including fire extinguishers.

Halverson offered several tips for safe operation:

- Wear the proper safety equipment including a U.S. Coast Guard-approved life jacket and eye protection to keep water spray from obscuring your vision. Tennis shoes or deck shoes and gloves offer better control of your machine. A wet suit provides protection from the elements. A whistle attached to the life jacket can be used to summon help.
- Take a boating safety course. The Department of Natural Resources and boat dealers know where courses are offered.
- Respect the rights of others. Keep a safe distance from other boats, and stay away from anglers, canoeists and swimmers.
- Be conscious of the noise your craft makes. Running a PWC in a small area for a long time can be irritating to others.
- Keep a lookout for other boats, especially other PWCs. Collisions are the most common type of personal watercraft accident.
- Read the owner's manual so you understand the water bike's controls and features.
- Never operate personal watercraft without the safety lanyard attached to you. The lanyard immediately cuts the engine if the operator falls. It's a safety feature that can help prevent bad accidents.
- Never operate a PWC at night. It's illegal in Wisconsin.
- Don't operate a PWC if you have been drinking.

The Personal Watercraft Industry Association represents manufacturers of personal watercraft.

Produced by the Wisconsin Department of Natural Resources Boating Law and Education Program.

Financed by the federal Wallop/Breaux Trust Fund.

A STEAL?

ALMOST!

Name .....

Address .....

City/State/Zip .....

6 issues/year

- ☐ 1 Year – **$8.97**
- ☐ 2 Year – **$15.97**
- ☐ 3 Year – **$21.97**

- ☐ Payment enclosed.
- ☐ Bill me.

Save

over half the newsstand price by subscribing to

WISCONSIN NATURAL RESOURCES

***Wisconsin Natural Resources* magazine**

Published bi-monthly. For faster service call our toll-free number **1-800-678-9472.**

Subscription information you provide may become part of a mailing list rented to reputable companies to help support the continued production of the magazine.

JMJ75

PLACE
STAMP
HERE

WISCONSIN
NATURAL RESOURCES

POST OFFICE BOX 7191
MADISON, WI 53707–7191

THOMAS A. MEYER

The quiet projects

Lesser-known species and habitats get the attention they deserve when a federal grant program brings groups together to break the silence.

Maureen Mecozzi

A timber wolf's solitary howl, the clarion call of a trumpeter swan, the bald eagle's high-pitched screech: These are the rallying cries bringing together thousands of people on behalf of endangered resources. Listen carefully, though, and through the clamor you might hear more. A breath of wind rustling a Kittentails, perhaps. Or the slow, deliberate progress of a winged snaggletooth snail on the march across a bit of prairie. You might even eavesdrop on half a million bats dozing in a favorite hideout.

For several years, Department of Natural Resources scientists have been listening to a few of our less vocal-and-visible species with assistance from a federal program called Partnerships for Wildlife. Designed to promote the welfare of nongame species, Partnerships for Wildlife offers grants to state fish and wildlife agencies that work together with local governments and private organizations to study,

Clusters of the state-threatened species Kittentails *(Besseya bullii)* will thrive thanks to a Partnership for Wildlife grant. Wisconsin DNR and its partners received more funds and more grants than any other state in the last three years.

STEPHEN J. LANG

(above) Another grant will assess how Northwoods lakeshore development affects the breeding habits of loons and eagles.
(below) Entrances were gated and air flow adjusted at the old Neda Mine in Dodge County to protect four miles of mining tunnels that are the winter home of more than a half million bats.

MARK MARTIN

track and support the species and habitats that can't quite command a major constituency.

Partnerships for Wildlife aims to address some of the smaller parts of a larger whole — smaller, but no less important to the overall health of the ecosystem. The program recognizes the value in studying a wide diversity of animals, plants and their habitats. Wisconsin's eight Partnership projects are true blueprints for ecosystem management. All involve people with diverse interests working toward a common goal. Some of the projects span human-made boundaries: With the restoration of a Wisconsin bat hibernaculum, researchers hope to avert a decline in bat populations across several Midwestern states. Other projects review what we already know, to see if it holds up as the ecosystem changes. Prescribed burning for prairies, for instance. Is this established land management method harming invertebrates as prairie habitat becomes increasingly fragmented?

The grants provide the means to expand our base of knowledge about nature, and to adjust and build upon what's already known. So give a listen to these eight quiet projects. You might hear something worth shouting about.

Protecting wildlife habitat on Northern Wisconsin lakes

The calm beauty of Wisconsin's northern lakeland has long attracted vacationers, outdoor sports enthusiasts and retirees. In recent years, the ever-growing number of people drawn to reside or vacation in the region has compromised the ecological integrity of many northern lakes. The loss of wetlands and shoreline vegetation, reduced water quality, and declines in fish and wildlife populations are directly linked to the area's rapid development.

Growth is likely to continue in the region for some years to come. Resource managers will need to make appropriate recommendations and decisions if development and recreation are to occur with a minimum of environmental degradation.

The need to accurately gauge how development affects northern wildlife is being addressed by a Partnerships

project examining the breeding habits of bald eagles and common loons on developed and undeveloped lakes. The U.S. Fish and Wildlife Service, the World Wildlife Fund, the North American Loon Fund, the Sigurd Olson Environmental Institute (SOEI) and the Department of Natural Resources are collaborating in the effort.

"It's an attempt to quantify biological change, so we can provide people with a basis for making informed decisions," says Mike Meyer, DNR researcher on the project. "If adequate nesting habitat is protected for eagles and loons, we expect many other shoreline-dependent species will benefit as well."

Loons, eagles and mink require relatively undisturbed lakeshore sites to rear young — but how much disturbance they can tolerate is uncertain. The DNR researchers will use data gathered from breeding surveys to compare with a model developed by the Ontario Ministry of the Environment. The model predicts when the rate of shoreline development will result in the loss of critical wildlife habitat.

Data from surveys on migrating songbirds, hawks, small mammals, turtles and frogs also will be compared with the model. There's a human element, too — SOEI researchers surveyed lakeshore property owners to gather data on perceptions of lake quality, motivations for ownership, and perceived threats to lake aesthetics. This information will help managers incorporate human values into their recommendations.

The project will be completed in September, 1998. Should the Wisconsin data validate the model, the information could be used to make informed decisions regarding lakeshore zoning and public acquisition of wildlife habitat.

Neda Mine Bat Sanctuary

Where miners once toiled to raise iron ore from the earth's depths, bats now sleep. *Lots* of bats. More than 500,000 bats of at least four species — including the Little Brown, Big Brown, Long-eared, and Eastern Pipistrelle — find the four-mile maze of tunnels criss-crossing more than 22 underground acres at the old Neda Mine in Dodge County a fine place to hibernate.

So fine that the mine's hibernating bat population ranks as one of the largest in the world. September's shorter days and cooler weather prompt the bats to congregate in the mine, where they wait out the winter until mid-May. The mine's various tunnels, coupled with high humidity (about 100 percent throughout), and good ventilation from adits (horizontal entrances) and vertical air shafts, create micro-habitats in which the different bat species can find the temperature and air flow that best allows them to maintain a low metabolic rate and conserve energy during the long winter's rest.

The Neda Mine was active from 1864 to 1914. After the miners left, spelunkers, vandals and a growing number of bats visited the mine over the years, until, in 1976, the property was acquired by the University of Wisconsin with help from The Nature Conservancy and the Department of Natural Resources. It was designated as a State Natural Area for its value as a hibernaculum.

The mine's entrances had deteriorated with age, threatening to disrupt the flow of air so important to maintaining the micro-climates. Crumbling rock at some openings prevented bats from entering the mine. Vandalism and trespassing continued to be a problem; even low levels of disturbance disrupt hibernating bats.

Biologists recognized the loss of a key hibernating site such as the Neda Mine could affect bat numbers across a multi-state region. But finding the financial backing to restore a mine for bats wasn't easy in an era when smog-choked skies and polluted water supplies topped the public's list of environmental concerns.

Finally, with funds from a Partnership grant, Bat Conservation International, the University of Wisconsin-Milwaukee, the U.S. Fish & Wildlife Service, private citizens and the Department of Natural Resources, restoration began in 1995.

The mine openings were secured with grates bats can pass through — but humans cannot. Some entrances were stabilized to ensure good air flow. Seventy-five feet of unstable rock was blasted out and removed from the main adit, which was fitted with a bat-passable grate.

To match the pre-construction habitat conditions of the mine, UW-Milwaukee scientists monitored the mine's temperature, humidity and air flow before work began in the fall of '95. They are now using that baseline data to note changing air flow in the reconstructed adit, and they continue to monitor the mine's conditions to ensure the bats can hibernate in peace.

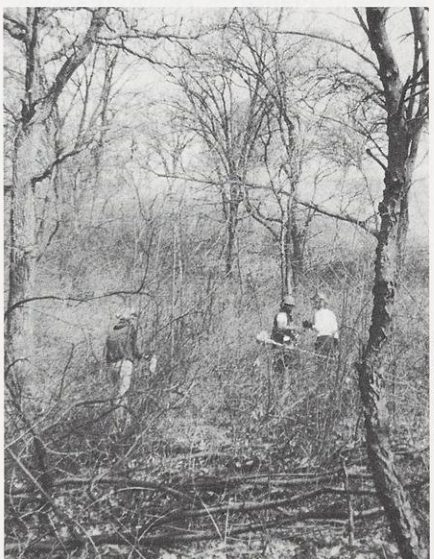
DNR Natural Areas Specialist Mark Martin says the restoration was worth a 20-year wait. "If no restoration had been done, the mine likely would have become less and less suitable for bats," he said. "Future bat populations could have been greatly decreased without it."

Restoring prairies and oak openings

Mark Martin emerged from the depths of Neda Mine to work on two other Partnership for Wildlife landscape restoration projects.

The first involves the renewal of dry prairies, savannas and oak woodlands at eight State Natural Areas covering

Grants staff the work crews that grub out woody invaders like buckthorn and locust on oak openings. Fewer than 1,000 acres of this ecosystem remain surrounding 30 small, remnant prairies.



MARK VERHAGEN

RICHARD BAUTZ

To understand what species we are losing, we have to inventory what we have. Insects are collected and categorized at eight natural areas along dry prairies and the Mississippi blufflands.

more than 2,000 acres in the blufflands of the Mississippi River. Shrubs and small trees have taken over these former grassy landscapes because the natural fires that once burned back the woody growth were extinguished, for fear they would harm human life and damage property.

To give a boost to native prairie plants and wildlife, Martin and his team have begun removing woody and exotic species from the sites. Crews are cutting down or girdling buckthorn, elm, red cedar, ash, ironwood and aspen trees, and eliminating patches of sweet clover and leafy spurge. Prescribed burning will then be conducted to maintain the open grasslands.

"We're focusing on ecosystem management, not single species management," says Martin of the ongoing project. Increasing the size and quality of the prairies, savannas and oak woodlands will help threatened plants thrive, including the pale purple coneflower and spiked blazing star. Cerulean warblers, the black rat snake, and a very rare prairie snail — the winged snaggletooth — may again breed on the restored sites. Migrating raptors such as peregrine falcons will return to find abundant prey in the grassy bluffland prairies.

People will benefit, too. All of the areas are open to the public, and Martin expects improved opportunities for viewing wildlife as the land is restored to its pre-European settlement state.

Martin is guiding a similar Partnership effort in the Southern Unit of the Kettle Moraine State Forest in southeastern Wisconsin. There, the once-common "oak opening" ecosystem has dwindled to less than 1,000 acres scattered across the region.

The forest's Kettle Moraine Oak Opening State Natural Area contains more than 600 acres of degraded oak openings surrounding 30 small remnant prairies. Despite the land's current condition, a diversity of native prairie and oak opening species can still be found, including a large population of the state-threatened Kittentails. Clearing non-native woody species like buckthorn and black locust from the degraded lands will allow the spread of species from the intact openings. Again, fire will be used as the primary maintenance tool after the initial clearing has been done.

It's expected that wild turkeys, Eastern kingbirds, bluebirds and a host of prairie invertebrates will thrive in the restored oak opening habitat. Money for these project comes from a Partnership grant, turkey stamp funds, the Paul Stry Foundation and the Endangered Resources Fund.

"Prairie and savannas once covered millions of acres in Wisconsin, and now less than one percent remain," says Martin. "It's satisfying to know the financial support was available to keep these two restoration projects going."

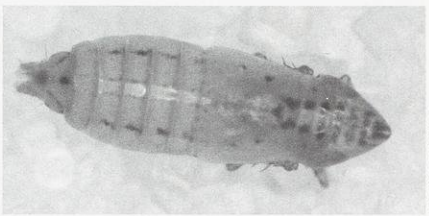
Prairie insect inventory

The biological wealth squandered when a vast ecosystem shrinks to the size of our remaining prairies makes DNR terrestrial ecologist Rich Henderson wince. "If we are going to retain or restore the natural heritage of our endangered prairie ecosystems," he says, "we have to address the greatest source of biotic diversity in prairies — the insects and other invertebrates."

Unfortunately we don't know much about these very small, very numerous, and very important parts of the prairie ecosystem. For three years, Partnerships for Wildlife, The Nature Conservancy, the Mellon Foundation , the Johnson Foundation Trust and others have provided funds to help researchers in six Midwestern states get out in the field and *count.*

It's a big, big job. "We have a very

(below) The red-tailed leaf hopper *(Aflexia rubranura)* is a rare find. Researchers believe it only feeds on prairie dropseed grass.
(bottom) Prairie insects are attracted to the yellow pans filled with water and a bit of detergent. Traps are tended twice daily by ecology student volunteers and DNR staff.



RICHARD BAUTZ

RICHARD BAUTZ

RICHARD BAUTZ

This 13-lined ground squirrel at the Westport Drumlin State Natural Area was weighed, aged, and ear-tagged during the small mammal studies. Capture/recapture studies will show how species respond to land management practices.

poor understanding of what insect species inhabit prairie, let alone which ones are the prairie specialists," says Henderson. Although researchers are attempting to focus on species most likely to be prairie specialists, the sheer number of insect species found in prairies — from moths, leafhoppers, beetles and true bugs to flies, wasp and grasshoppers — complicates the task. "We are finding species as yet undescribed by science, and hundreds of species are turning up for the first time in a given state," he says. "It's overwhelming."

The field work to date has revealed many rare and specialized prairie insects still present on prairie remnants, even on sites as small as half an acre.

Career counselors take note: The work of identifying specimens and revising taxonomic groups could take decades. "There are just not enough taxonomists out there to go around," says Henderson.

Researchers are also discovering that careful use of fire does not, for the most part, harm prairie insect populations (though there are some rare exceptions). Because our prairies are now so small and fragmented, some entomologists have concerns about prescribed burning, fearing fire might force prairie-restricted insects to flee to nonprairie lands where they could not survive or reproduce. As the insect inventory progresses, research will also continue into the best strategies for managing invertebrate communities along with the rest of the prairie ecosystem.

Small mammal monitoring

Our ignorance regarding the diversity and distribution of prairie insects is almost matched by our thin knowledge about shrews, voles, mice and other small grassland mammals. Besides feeding hawks and foxes, small mammals play an important role in seed dispersal and influence insect populations, just to mention a few of the reasons to study these little balls of fur. No comprehensive inventory of small mammal species has been done since H. H. T. Jackson's book *Mammals of Wisconsin* was published in 1961. Members of the Wisconsin Small Mammal Survey Team include Nicola Anthony, Richard Bautz, Paul Matthiae, Steve Richter and Elizabeth Spencer. These researchers from the Department of Natural Resources, The Nature Conservancy and the University of Wisconsin received a Partnership grant to take a closer look.

They lined up 50 additional pairs of eyes to help. Volunteers contributed about 2,000 hours of their time in 1996 to study six southern Wisconsin State Natural Areas and The Nature Conservancy preserves.

"This was a cooperative effort right from the start, everyone has worked hard to make this a successful project. We are about to start our third monitoring season and we rely on volunteer help in the field. For many students and mammal enthusiasts, this is their first hands-on experience with wildlife," says Richard Bautz, DNR researcher. "Volunteer participation was outstanding last year," says Nicola Anthony, graduate student in the UW-Madison conservation biology program. "There was an overwhelming level of volunteer commitment to the program."

Using live traps, researchers and volunteers tracked nine target species, including two species of special concern — the western harvest mouse and the prairie vole. The traps were checked twice a day, morning and evening, during survey periods of four consecutive nights, with intervals of six weeks between each survey.

Each captured animal was identified, aged, weighed, sexed and marked with small ear tags or a dab of nontoxic paint behind the ear. By using the mark-release-recapture method, the researchers hope to derive good estimates of the relative abundance of each species, and to monitor the responses of small mammals to grassland management methods. They also intend to refine the survey methods, creating a common protocol so inventories can be conducted in larger geographic areas across different types of landscapes.

The data is now under analysis, but there were a few glaring absences the researchers couldn't help but notice. Only one prairie vole was trapped in 1996, even though traps were located on sites with suitable prairie vole habitat. The least shrew, the pine vole, and Franklin's ground squirrel — grassland species that historically occurred within the geographical area of the study — also failed to appear.

Landscape management for prairie chickens

Talk about one lucky cluck! Nearly 15,000 acres of grassland are maintained in central Wisconsin for the greater prairie chicken. And with good reason: The prairie chicken is an indicator of a healthy ecosystem. Where there's good prairie chicken habitat, the prairie chicken isn't the only species to benefit — other grassland species are likely to be doing well, too.

Private land accounts for nearly 75 percent of the landscape in the prairie chicken's range. Major parcels under public management include the Buena Vista Marsh, Leola Grasslands and the Paul J. Olson Wildlife Area in central Wisconsin. Grassland habitat is also maintained on the George W. Mead Wildlife Area. The heart of prairie chicken range is just west of Highway 51 from Plainfield to Stevens Point to Wisconsin Rapids. Private lands protect scattered populations of prairie

JOHN LYONS

To protect, water quality, streambanks , and farmers' incomes, research will find out how effectively buffer strips and grazing techniques change habitat and prevent runoff.

chickens north of Wisconsin Rapids toward Mosinee, west to Marshfield and north toward Medford. In recent years center-pivot irrigation and other intensive crop management methods have changed the landscape. Researchers are concerned that prairie chicken populations may be declining in response.

To get an accurate population estimate, the Department of Natural Resources, the Society of *Tympanuchus Cupido Pinnatus* and the University of Wisconsin-Stevens Point received a Partnerships for Wildlife grant to continue the annual booming ground survey for the entire Wisconsin prairie chicken range. The range has been surveyed each spring since 1989; Wisconsin prairie chickens have been monitored annually since 1951.

Grant funds were also used to build a GIS (Geographic Information System) database incorporating spring booming ground locations, private land uses, land ownership, habitat types, home ranges for individual chickens, and other elements. The layers of GIS data create maps showing, for instance, which parcels offer the best prairie chicken habitat. Managers use the maps as guides for future land acquisitions. GIS gives managers the "big picture" so necessary for the landscape-scale management of many individual land parcels.

Offering opportunities for the public to view prairie chickens on their booming grounds each spring has been crucial to generating and maintaining public support for prairie chicken habitat. Grant money made it possible for nearly 1,000 people to visit the booming grounds in April, 1996.

"The public/private partnership has made prairie chicken management work right from the start," says DNR Wildlife Manager Jim Keir. "That sustained partnership has enabled us to evaluate successes and failures from four decades of management. The bird is colorful and vocal. It's a lot of fun to watch and it's a symbol of the native prairies that are now largely gone from the state," Keir says. "Prairie chicken populations remain a barometer of the health of the remaining grassland environment."

Riparian rotational grazing

The goal: Find farming techniques for streamside agricultural land that will protect water quality, provide habitat for fish and wildlife — and produce income for the farmer.

Due to a thin soil layer and high erosion rates, much farmland in the rugged Driftless Area of southwestern Wisconsin is unsuitable for row crops. The land can support grass and grazing cattle, so more and more farmers in the region are turning their fields to pasture. But cows and cattle wandering down to a stream for a drink erode the banks, and their manure pollutes the water, destroying habitat for fish, frogs, insects, grassland birds and other wildlife.

"Buffer strips along streams provide environmental benefits, but take the land out of production," says Jerry Bartelt, a DNR researcher guiding a long-term Partnerships for Wildlife project. "Plus, buffer strips have to be fenced to keep cattle out, and the fences often get washed out in floods. That's a lot of maintenance and repair work for the farmer."

Farmers' concerns are utmost on Bartelt's mind. Integrating the needs of wildlife into agriculture requires close attention to the realities of farming — profit, loss, time. That's why farmers and ag interests work side-by-side with wildlife researchers, government representatives and others on a committee in search of practical, achievable solutions to an assortment of farming issues.

In the Driftless Area, Bartelt's team is comparing ungrazed stream buffer strips, rotationally grazed pastures, and continuously grazed streamside land to see if rotational grazing can be as effective as ungrazed buffer strips in preventing runoff and habitat deterioration. In rotational grazing, the animals are placed in a small, moveable paddock for one to three days. Then, paddock and animals are rotated to another portion of the pasture. This allows the land in each previously grazed paddock to "rest" for three or four weeks.

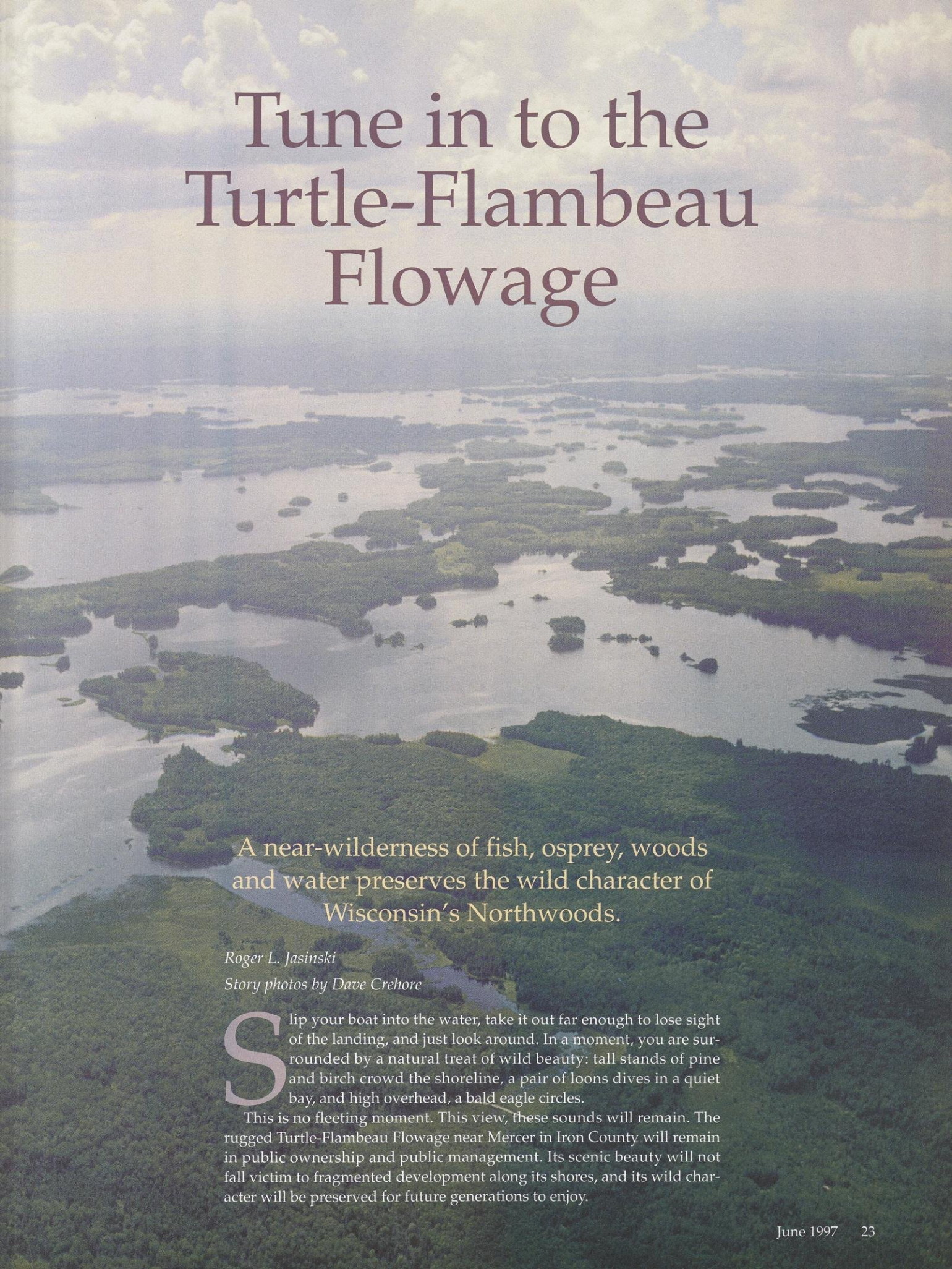
The group is also learning about the streamside habitat that results from rotational grazing. Over time, trees and shrubs may grow into ungrazed buffer strips, while rotationally grazed areas typically remain as grass. The different maintenance techniques produce different habitat, which has implications for the wildlife species the land can ultimately support.

To date, researchers have collected one year of data, including census counts on grassland birds, fish, frogs, toads, small mammals and aquatic insects, and measures of pasture productivity. They'll gather more data this summer; analysis and recommendations will follow.

The search for environmentally sound and financially workable, low-maintenance streamside management methods for farmers intrigues Bartelt. "It's really enjoyable to look for these potential win-win solutions, and then test them to see if they'll work," he says. "It never fails to amaze me — when you begin discussions with people from different backgrounds who have a common interest in a problem, the seemingly insurmountable situations often turn out to have several potential solutions that can meet the needs of most people involved." □

Maureen Mecozzi is associate editor of Wisconsin Natural Resources.

Tune in to the Turtle-Flambeau Flowage



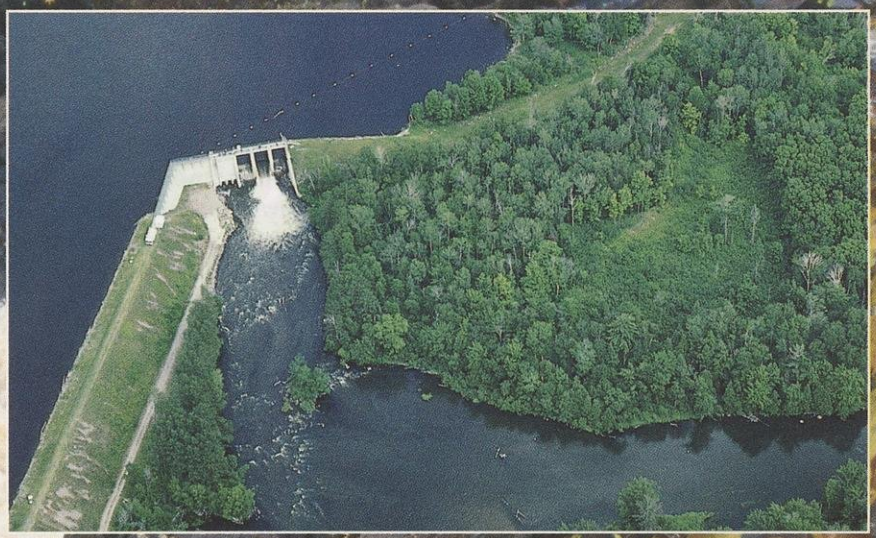
A near-wilderness of fish, osprey, woods and water preserves the wild character of Wisconsin's Northwoods.

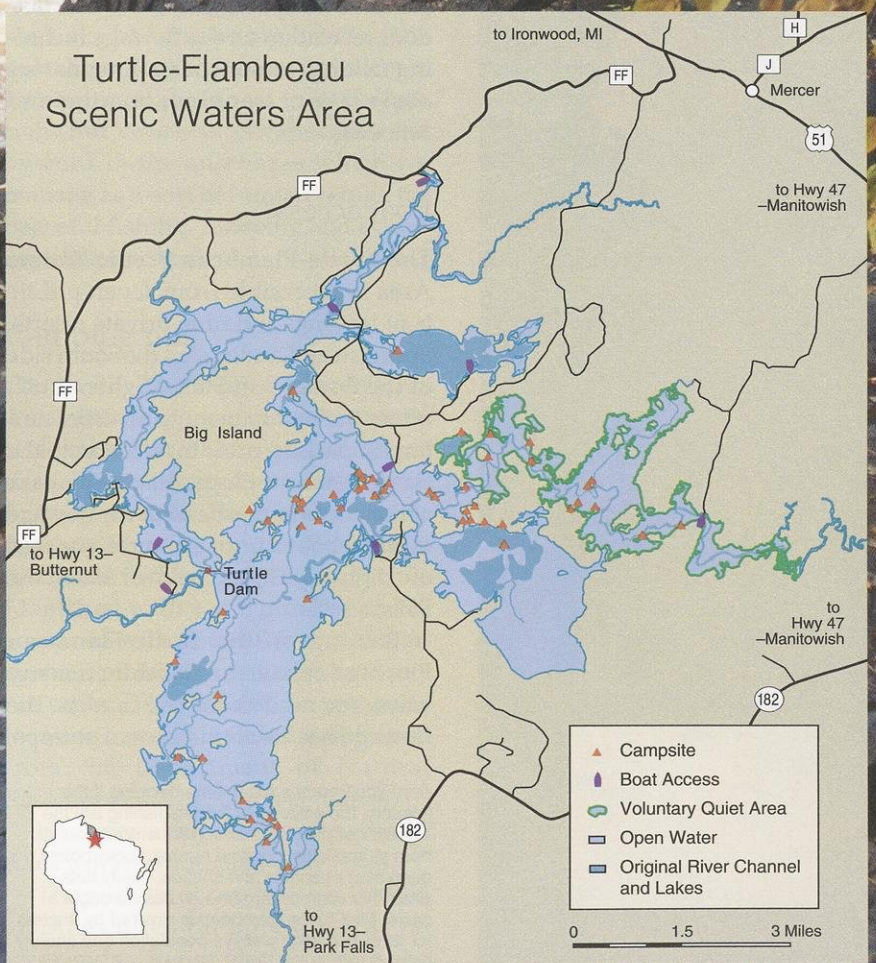
Roger L. Jasinski

Story photos by Dave Crehore

Slip your boat into the water, take it out far enough to lose sight of the landing, and just look around. In a moment, you are surrounded by a natural treat of wild beauty: tall stands of pine and birch crowd the shoreline, a pair of loons dives in a quiet bay, and high overhead, a bald eagle circles.

This is no fleeting moment. This view, these sounds will remain. The rugged Turtle-Flambeau Flowage near Mercer in Iron County will remain in public ownership and public management. Its scenic beauty will not fall victim to fragmented development along its shores, and its wild character will be preserved for future generations to enjoy.





The Turtle-Flambeau Flowage was created in 1926 when the Chippewa and Flambeau Improvement Company built a dam on the Flambeau River downstream from its confluence with the Turtle River. The dam flooded 16 natural lakes and formed an impoundment of approximately 14,000 acres.

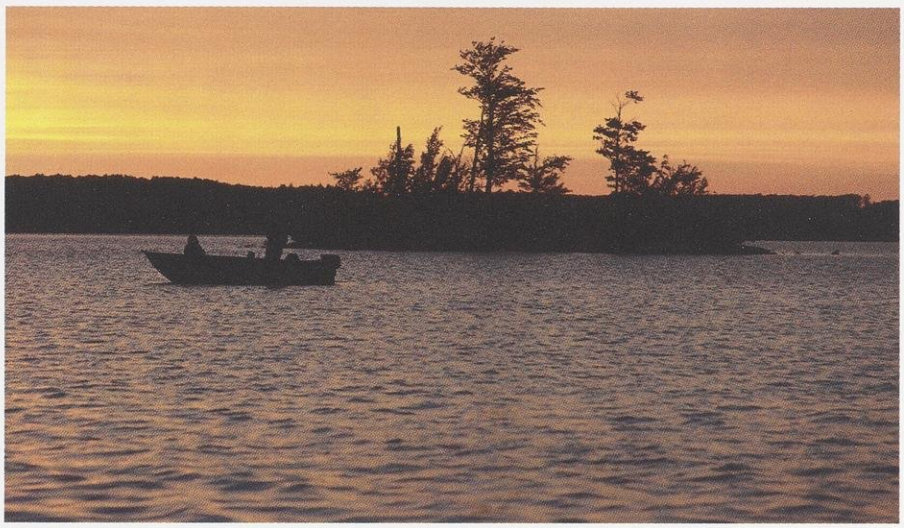
The flowage was constructed as a reservoir to augment river flows and sustain hydroelectric plants operated downstream by electric utilities and paper mills. The dam also provided flood protection and created a unique recreational resource.

Many early resorts located around the 16 lakes were flooded and forced to move — some chose higher ground, others left the area. As compensation for property lost when the flowage was built, property owners were offered money or adjacent land. Most chose a cash settlement and the shoreline today remains sparsely developed.

The flowage, in turn, attracted more tourists. What had been good fishing before became even better, and more people came to test the waters. New resorts opened to service the reinvigorated tourist trade. Over the years these resorts have had many visitors, some of them notorious. John Dillinger frequented the area. Al Capone, the Chicago gangster, fished the flowage many times, especially in the years after his

(p.23) The Turtle-Flambeau Scenic Waters Area has scads of quiet bays, open waters, islands, woods and wildlife.
(above) The dam holds back a 14,000-acre impoundment to provide more steady water flow and hydro power on the Flambeau River.
(background) A fall day at the Lake of the Falls on the north end of the flowage.

(MAP) JULEE BARNETT



release from prison. Charlie Comiskey, founder of the White Sox baseball team, used Jerome's Hunting and Fishing Club on Trude Lake as a place for rest and relaxation for himself and his team.

In 1990, the Stewardship Fund and gubernatorial support allowed the state to acquire 22,343 acres from Chippewa and Flambeau Improvement Company, including lands submerged by the flowage, about 95 percent of the shoreline and adjacent lands. With additional acquisitions, state ownership now comprises approximately 27,000 acres including over 300 miles of shoreline and 195 islands.

The flowage is managed by the Department of Natural Resources using a master plan developed with citizen advice. Management practices aim to perpetuate the natural character of the shoreline, preserve its scenic qualities and protect its plant and animal communities. Managers strive to preserve the quality and wealth of outdoor recreation on the flowage including fishing, hunting, camping, nature observation, trapping, boating and canoeing.

Boat access

The Turtle-Flambeau Scenic Waters Area is accessible from seven public boat landings and from private resorts. Springstead Landing, on the south side of the flowage off State Highway 182, offers the best launching facilities and largest parking area. In addition to the six state-run landings, the county park at the northernmost end of the flowage offers a boat ramp and public access on Highway FF, just below Lake of the Falls.

Boating on the Turtle-Flambeau Flowage can be memorable in many ways. You need to exercise caution. The flowage has an abundance of stumps,

(top) You'll have a tough time deciding if the scenery, the solitude or the fine fishing are the highlight of your trip. Fishing structure abounds from stumpfields to island humps, rocky points, deep river channels and shallow, reedy flats. *(left)* This scrappy largemouth bass brought a smile. The Turtle-Flambeau is revered by anglers for its outstanding walleye population and chunky panfish too.

logs, floating driftwood, and rock bars. This variety makes good fish and wildlife habitat, but it can damage boats, particularly the lower units and props of motors. Water levels continue to be raised or lowered to benefit downstream hydroelectric plants. Even if you think you know your way around, these changing conditions and fluctuating water levels mean you must slow way down to navigate the waters. Activities like water skiing and "jet skiing" are definitely not advisable here.

A voluntary quiet area has also been set aside on approximately the eastern fifth of the flowage from the narrows near Blair Lake upstream to the property boundary near the confluence of the Bear and Manitowish rivers. This promotes an atmosphere of quiet solitude for those seeking a wilderness-type experience. Many anglers, canoers, and campers, come to the flowage seeking those reflective moments. We want to preserve that atmosphere.

Flowage managers ask that slow-no-wake boating be observed in the quiet area. Boat wakes are unwelcome by anglers and canoers in any situation, but courtesy is especially the byword in the quiet area which we manage as a sort of human refuge for peaceful fishing, canoeing and camping experiences.

Camping tips

The Turtle-Flambeau Scenic Waters Area offers 60 remote campsites accessible by water only. These sites are available year-round on a first-come, first-served basis. There is no camping fee, but camping on the flowage is restricted to designated sites. Each is identified with a site number and is equipped with a steel fire ring and an open air pit toilet. A few sites have picnic tables. Information on campsite locations and rules can be obtained from the Department of Natural Resources Ranger Station at Mercer.

Understanding a few of the ground rules will help you plan your visit.

The number of campsites is limited and they often fill up, especially on weekends. Do not plan to arrive at 6 p.m. on a Friday night and expect to find a nearby vacant campsite. You may want to plan a mid-week or off-season vacation if you are thinking of camping on the flowage. It is best to arrive by midday so you have time to scout out several sites.

Make an alternative plan in case all sites are full when you arrive. Additional camping opportunities are provided at an Iron County Park located off County Highway FF where the Turtle River enters the flowage. Some resorts also provide campsites that range from rustic to "full hook-up" facilities. These can be reserved ahead of time.

There is a 10-day limit on camping at all state campsites within the Turtle-Flambeau Scenic Waters Area. When you set up camp, you must occupy the site the first night of your visit and you may not leave it unoccupied for more than one night thereafter. The DNR regularly checks campsites and visitors may not leave unattended camping equipment to "save" a site.

Fires may only be built in fire rings. Visitors are allowed to gather wood that is "dead and down" for cooking and warming fires, however, standing trees may not be cut. Standing dead "snag" trees provide valuable wildlife habitat and they are protected. Power saws may not be used to chunk up wood that has been gathered. Many of the campsites receive heavy use and firewood is becoming scarce. If you are planning a camping trip, consider bringing firewood with you. Several local businesses sell bundled wood for that purpose. We also ask that campers not try to burn driftwood. Generally driftwood is water-logged and does not burn well, even if it appears dry on the outside. Moreover, driftwood provides valuable fish and wildlife habitat, and adds to the unique character of the flowage; it is rapidly disappearing through natural processes and from illegal harvest. Removal of driftwood from the property is prohibited by law.

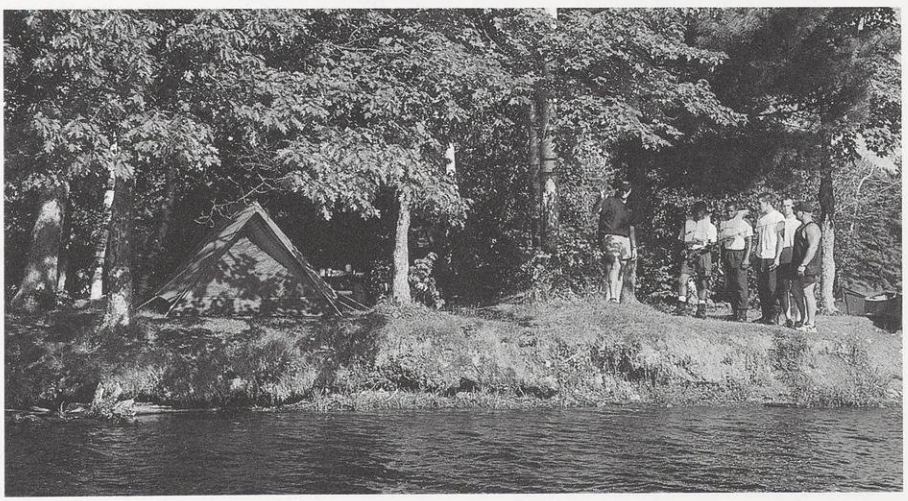
Garbage service is not provided at the campsites. All refuse must be carried out with you. Also plan on packing in all your drinking water. The lake water is not considered potable and campsites are not equipped with wells or drinking water taps.

Open, quiet spaces

The Turtle-Flambeau Scenic Waters Area offers the opportunity to camp, fish and enjoy the outdoors in a scenic, wilderness setting. The undisturbed wooded shorelines and islands make the flowage unique. If you visit the property, please help us protect that setting by leaving no trace of your visit.

Land bordering the flowage varies from level terrain to steeply rolling hills. The woodlands consist primarily of aspen, northern hardwoods and white birch. Scattered old-growth hem-

The flowage offers some of the most remote, rustic camping on state lands in Wisconsin. Sixty campsites are maintained to preserve the area's wild character. Plan on packing in your firewood and packing out all your garbage.



The flowage provides outstanding opportunities for quiet bird watching. Great blue herons stalk the shallows. Loons nest near the wooded shores. Eagles and osprey are common in snag trees and towering conifers.

lock and pine provide top-quality nesting habitat for eagles and osprey. Grass openings scattered throughout the forest add habitat diversity and increase the variety and total numbers of wildlife.

The forest surrounding the Turtle-Flambeau Scenic Waters Area is managed to protect fish, wildlife and the flowage's scenic qualities. A 300-foot aesthetic zone buffers the entire shoreline in which no timber harvesting will occur. A number of other areas receive special management to protect unique natural communities. Lands more than 300 feet from the shore which are still visible from the water will be selectively harvested to protect the view within a well-managed forest.

Timber harvests in certain areas of the property which are not visible from the flowage may be more extensive to provide wood and create more diverse habitat. For instance, clearcutting aspen promotes regeneration from sprouts. Young, brushy aspen stands benefit grouse, deer and many other wildlife species. Such cuts will only be considered in areas not visible from the water, and will be carefully laid out to provide a "natural" appearing forest.

The Turtle-Flambeau Flowage has the highest density of bald eagle, osprey and common loon breeding pairs in Wisconsin. The flowage is also home to herons, black terns, merlins and an occasional cormorant. Shorebirds and migratory waterfowl use the flowage as a breeding and staging area as they pass through the state. Nesting waterfowl include mallards, wood ducks, hooded mergansers, ring-necked ducks, and Canada geese.

In addition to the many birds, the flowage is also home to deer, bear, raccoon, fisher, beaver, otter, and other furbearers as well as many species of reptiles and amphibians. On rare occasions, timber wolves and moose are sighted here.

The flowage has many quiet bays and islands to explore. There are ample opportunities to observe and enjoy wildlife in this remote and wild setting. Visitors are asked to approach wildlife slowly and quietly. Be particularly careful not to disturb nesting birds or animals with small young. For the shoreline visitor, a self-guided auto tour booklet provides interpretive information on habitats and management of lands surrounding the flowage.

The Dead Horse Lake Ruffed Grouse Demonstration Area near the northern edge of the property showcases management techniques and principles to promote grouse habitat. The area includes a number of trails where both hunters and hikers are welcome.

The Turtle-Flambeau has earned a reputation for providing the best of Northwoods fishing experiences. The flowage supports a diverse mix of native warmwater fish species including walleye, muskellunge, northern pike, smallmouth bass, largemouth bass, lake sturgeon, black crappie, bluegill and rock bass.

The flowage is best known for its superb walleye fishery; by far the most abundant game fish caught and kept. The prized fish reproduces naturally here and the waters produce many keepers.

Black crappie provide exceptional panfishing during the early summer months and through the ice. Like all crappie populations, they are cyclical, but when numbers are up, the fishing is tremendous.

Muskies provide outstanding trophy angling. Anglers have caught muskies in excess of 50 pounds. Annual stocking supplements the limited natural reproduction.

Smallmouth bass provide quality fishing when action is slow for other species. "Smallies" in the flowage are exceptionally heavy fish for their length.

Special regulations aim to further improve the average size of walleye, smallmouth bass and crappie in the flowage. Because of its unique character and outstanding qualities, special size and bag limits will help to assure the flowage's continued status as one of the best fisheries in the state. Consult the Wisconsin fishing regulation pamphlet for complete regulations and watch for special regulations posted at the landings.

For brochures and other information to plan your outing to the Turtle-Flambeau Scenic Waters Area, contact the DNR Ranger Station, 3291 State House Circle, Mercer, WI 54547; (715) 476-2240. Information on area resorts is available from the Mercer Area Chamber of Commerce, Highway 51, Mercer, WI 54547; (715) 476-2389. □

Roger L. Jasinski is property manager for the Turtle-Flambeau Scenic Waters Area in Mercer.

continued from page 2

But on that occasion when I hooked my quarry, it would rocket from the water, swinging pendulum-like toward me on the heavy line. I would grab the line left-handed, holding the pole upright with my right. Sometimes I missed, and the flopping fish would make an unceremonious swing or two before I made the grab.

Then I would admire my catch. Often, it was an orange-breasted seven- or eight-inch mature male with purple sides and a dark-spotted gill cover. He would seem more colorful than a fish should. Most of my catch were females or immature males, less colorful, but full of fight. The small ones were set free; those over five inches were added to a rope stringer.

For an hour or two, I was immersed in the world of the bluegill. Homework was forgotten, the neighbor girl who always wanted to tag along had to take music lessons, and I had convinced Dad that I wasn't big enough to mow the lawn. Of course, that would soon change.

JOHN BETH

That was long ago. Lots has changed. Except the bluegills. They're still plentiful and available. When they are on their beds, they can be fished from shore, boat or by wading. Cane poles will still do the job, but the ultralight gear is more fun. The 'gills attack variously tipped jigs as well as small poppers and colorful flies. Bluegills still aren't finicky.

I still like getting lost in that world of dancing bobbers, pungent algal fragrance and red-winged blackbird territorial song. The action is often constant and even the misses are exciting. Each bluegill added to the basket is a thing of beauty and a source of delight. My concentration is total.

And still, the world seems a faraway thing. There are no jobs, no pressures, no deadlines. My boss is a nice guy. I love the lady ahead of me at the checkout counter who writes a personal check for a 65-cent item. I feel only mildly guilty about my wife at home mowing the lawn. That goes away.

And for an hour or two, I'm 10 years old again. Bluegills on the beds will do that to a person. □

Dick Hall is an outdoor writer from Oshkosh, Wis.

Readers Write

MORE ON CATS

I purchased the December issue because of the story "Cats on the prowl." I have four domestic cats that were rescued and they spend the winter inside watching birds at my feeder. I also raise and train 22 sled dogs. The cats are territorial, but they know the limits of where they can go safely near the dogs. Both are more curious than anything else.

These cats are mousers, and **instinct** is what animals will follow, if humans let them. I don't dispute the facts in the article. I believe that we need to use good human judgment, but I think it is wrong to view domestic cats as separate from wild creatures. Cats are "fellow travelers," and we should not mentally divide them as separate the way we have done with human racial groups. Earth is for **all** of us — wild and domestic.

Julie Verrette
Florence, Wis.

During the mid-1940s people who had unwanted cats in our area would drop them off in a small valley just west of Galesville. Some of the cats went wild. My uncle had a small farm in that valley and he had trouble with these wild cats. In fact, he couldn't keep a domestic cat on his farm; those feral cats killed every one of them. My uncle knew I liked to hunt and would invite me down to reduce the number of wild cats. It was best when there was a fresh snowfall. Over the period of three or four years, I guess I eliminated 25–30 of these pests. After that, he could keep a cat around the farm.

I live near Trempealeau now and domestic cats bother the birds around my little farm. I used to have a covey of quail that I fed by a brush pile. There was a cat that made a trip of about half a mile for two days in a row and after that, there were no more quail. I backtracked that cat's trail and found that it did no hunting until it reached those quail. I was very sad to see all those quail gone.

At what distance from a cat's supposed home does it become fair game? I know all the cats in my area that belong to people, but there are some I don't recognize. The small wooded area of my farm is reserved for wildlife, and I'm sure cats are disturbing that area.

Howard Hare
Trempealeau, Wis.

Cats are never considered fair game. Local ordinances may allow removal of nuisance animals, but you need to check with the local sheriff's office and the county. Some regions will try to live trap and remove problem animals first. We sympathize with your situation, but seek a remedy with local law enforcement and the local humane society.

We thought your December piece on cats was terrible. The entire article was based on estimates — things that may be happening. It is equally likely that they may not be happening. We don't believe the estimates of up to nine cats per acre and 114 per square mile in rural areas. By our experience, this figure is grossly overestimated. We've had cats on our rural home for more than 45 years. In all that time and with all those cats, we have only seen two dead birds. They've gotten a lot of mice, moles, shrews and even three snakes, but only two birds that we've seen.

I think either the authors are trying to spread their venom or this is another trick by government to add another form of tax through cat licensing. I don't think licensing will change cat behavior and I think you have been taken in by research "guesstimates."

Dorothy Dodge
New Lisbon, Wis.

We stand by the cat predation research and its results, which clearly stated birds constitute less than 30 percent of the feral rural cat's diet. As we see it, the value of licensing pets is not the money it raises but the sense of responsibility it builds in the owner. For some people, the license is a reminder that humans remain responsible for controlling the habits and whereabouts of animals they chose to

keep as pets. Along with vaccinations and the other steps we recommended, licensing provides a means of returning lost animals and providing an avenue of recourse for others who are affected by our cats' actions.

MS. BIG BIRD

Christian Cold's "Talon Show" was a well-written and thoughtfully organized piece on Wisconsin hawks. As a retired, but still vigilant copy editor, however, I question one point. Cold's statement that accipiter females "may be as much as 30 percent larger than her mate" seems to be at odds with the cutline for the photo of him holding a pair of Cooper's hawks, in which the bird that appears much larger is identified as the male.

Did the caption writer cross up Mr. Cold, is the size of the birds in the photo an illusion because one was held closer to the camera or is this pair of hawks an exception to the rule? Perhaps, judging from the position of the fly on Mr. Cold's trousers, the photo was printed as a reverse image while the caption went unchanged. I can sympathize all too well with this type of error, having seen way to many left-handed guitar players and folks with wedding rings on their right hand show up in print.

Don Lewis
Birnamwood, Wis.

And may we say blessed are those who have been there, done that. Chris Cold knows his stuff and the larger bird was, indeed, the female. Female raptors of the species we see in Wisconsin are normally up to 30 percent bigger than the males. This is an example of sexual dimorphism where nature produces two distinct forms in the same species that differ in secondary characteristics as well as primary sexual differences.

REDISCOVERING MEL ELLIS

Thank goodness a friend loaned me your great February issue. Otherwise I would never have read "The long view from Little Lakes" by Mel Ellis. Now that we live in Arizona, I had nearly forgotten the many joys of winter back home. Mr. Ellis' columns brought it back in vivid detail. Thank you so much.

Jacque Mills
Sun City, Ariz.

SMART BIRD

In the last few winters, we've noticed an increase in the number of house finches in our back yard. They seem to spend a lot of time with other bird species. We also have a pair of bluebirds that nest in a birdhouse nearly every year and the house finches follow the bluebird parents as they fly back and forth feeding their young. We also have tube feeders for goldfinches. Sometimes house finches will perch on the feeder and try to figure out how to get out the thistle seed. After watching a goldfinch, the house finch eventually learns to reach under the perch and retrieve the seed. They are good learners and I'd rate the house finch A+ in intelligence.

Don Wachlin
Edgerton, Wis.

PAYING FOR CONSERVATION

You make the point very well that hunters, fishermen and trappers are paying for the things that they would never use — amenities like new parking lots and watchable wildlife signs. ABSURD! Outdoorsmen know what wildlife they are shooting at without the signs. Let the animal rights groups and the bird watchers pay their share. We gunmen are tired of paying the entire bill. In fact, let's have a fish and game department.

Daniel A. Ness
Holman, Wis.

One would believe from your article "On the table" that license fees go for funding hunting, fishing and conservation purposes. The fact is, the license fees go into the general fund where they are distributed by a bunch of politicians and bureaucrats to wherever they deem fit. Why don't you tell it like it is?

William Flood
Cumberland, Wis.

In "On the table," I read about all the things that must be done and the limited funds available. I was raised in Wisconsin, but spent my professional years out of state. Since retirement, I have returned to Wisconsin for summers and this year will purchase my non-resident fishing license, as usual. Wisconsin, I believe, issues a lifetime license to seniors. Why not mount an appeal asking seniors who have had a free ride for five, 10 or more years to contribute a hundred dollars or more.

Joe Fulton
Fayetteville, Ark.

Discussions about fees still garner a wide range of opinions and ideas. License buyers remain our strongest supporters, but other taxpayers also support purchases of public lands through such programs as the Stewardship Fund. No doubt about it, license fees allow us to hire the professional staff and equipment to maintain properties and add amenities. Many people, including hunters enjoy better parking lots and interpretive signs on state property and we continue to encourage wider use by more of the public — anglers, hunters and nonhunters alike. Our properties are managed for a mix of game, nongame animals, habitats, and plant communities.

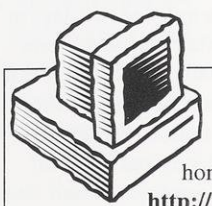
License fees and permits are not merely mixed in with tax revenues. License fees are kept in a separate fund and the Legislature approves appropriations from that fund for natural resource programs. Those license fees cannot be diverted for other projects.

We offer seniors reduced rate licenses, but we stopped offering lifetime licenses for a one-time fee in 1991. It was too costly and seniors told us they were willing to pay their share for the natural resource activities they have more time to enjoy in their retirement years.

Thanks to support for natural resources, the Legislature did approve very modest increases in license fees which took effect in April.

SECOND-STORY FLIERS

Butterfly fans will want to plan a visit to the Milwaukee Public Museum before September 1st to see the new Butterflies Alive! exhibit. A greenhouse with artificial lighting on the second floor contains hundreds of butterflies flitting about as you wander a path. Twenty-five species including swallowtails, sulphurs, fritillaries and monarch butterflies glide overhead and alight on flowers, plants and your head! There's even a butterfly checkpoint at each end of the enclosure to ensure that hitchhikers don't make the great escape into the woodland Indian exhibit across the hall. Surrounding exhibits explain how butterflies use taste, smell, hearing and vision to sort out their world. Other areas discuss butterfly gardening, butterfly diversity, butterfly-inspired postage stamps and butterfly history. The museum at 800 W. Wells Street in Milwaukee, is open every day this summer except on the Fourth of July from 9 a.m. until 5 p.m.. General admission charges include access to the Butterflies Alive! exhibit.



Connect with *Wisconsin Natural Resources* magazine on the Web. Reach our home page on the World Wide Web at **http://www.wnrmag.com** Drop us a note — and remember to sign our guest page.

(PHOTOS THIS PAGE) COURTESY OF JEAN MURPHY

Shop & Learn

It's a sultry June afternoon, and you have made yourself a solemn promise: Hurtful as it may be, you will not, WILL NOT watch (for the 168th time)

the videotape of the Green Bay Packer Superbowl victory. No. You're going to hang that cheesehead on the closet hook and *get out of the house.* Where are you going? To the *country,* where you can savor life without commentary by John Madden. Where the great bounty born of hard work and good earth is everywhere to be seen. Ah, the *country!* Down southwestern Wisconsin way.

Be sure to carry a copy of **Farm Trails 1997 Road Tours** as a guide. This handy brochure and map lists more than 20 small farms open to visitors. Each farm operates a cottage industry and sells the products made at the farm. Here are a few:

Hankering after a buffalo burger? Then go where the buffalo roam — **Buffalo Falls Ranch** near Potosi, where you can view pasture-raised buffalo and talk to owners David Sullivan and Jeanne King about purchasing various cuts of meat. Need a little mustard with that buffalo? It's a short trip to *Martha's Hot Mustard,* home of Martha McLean's famous yellow scorcher.

Angora goats and rabbits, and border Leicester sheep make the wool go 'round at *Wefarmasmidgen* near Bloomington. Shepherds Sally Bridgham and Mary O'Leary teach spinning, weaving and knitting, and sell hand-spun yarn.

Plants and textiles have a natural affinity at two farms: Rediscover the lost art of tatting with Marian Horner, then select daisies and delphiniums at *Potosi's Plenteous Perennials,* her shop located just across from the St. John Mine. *Alpine Gardens* near Stitzer sells rare alpine plants, native wildflowers, prairie plants — and quilts.

At the *Life O' Riley Farm* near Boscobel, you'll find birdhouse gourds plain and painted, flowers fresh and dried, and one-of-a-kind natural gifts in a restored schoolhouse. In the same area, the Russian Orthodox monks at the monastery of *St. Isaac of Syria Skete* manufacture icons.

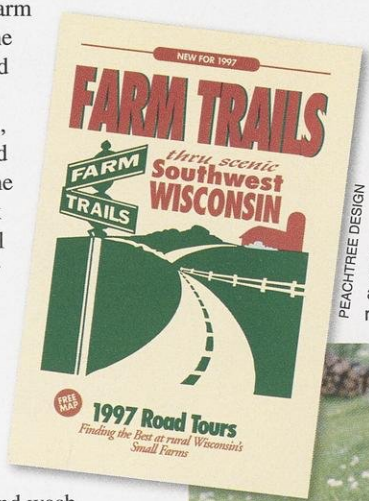
Jean Murphy, coordinator of Farm Trails, says all the participants listed on the map are owner/producers, living on the land they work. "Some of our stops look like regular retail places, but many are based right inside the home, meaning you'll follow a driveway into a farmyard that might have dogs, chickens and wash on the line," she notes. "If you really want to get off the beaten track and meet the real folks that live and work in rural places, Farm Trails is for you."

You can call ahead to the farms you want to visit — phone numbers and hours for all farms are in the brochure. Or, if you prefer, you can take your chances and drop in unannounced; someone may or may not be home to greet you.

Murphy offers this additional lure to curious travelers: "Because our members are so familiar with the areas in which they live, they can direct visitors to other places nearby — for instance, we can recommend cafes, shops and natural settings that you might not otherwise know or hear about."

(One thing — when you find that roadside cafe with the bottomless cup of French Roast, would you *please* let the TRAVELER know? Thank you.)

The 1997 Farm Trails Road Tours brochure is available at all Wisconsin Information Centers. Or, you can write Farm Trails, 4478 Riley Rd., Boscobel WI 53805, or e-mail: mmjmkmem@mwt.net □



PEACHTREE DESIGN

Down on the farm you might take a fancy to dried flowers, colorful gourds, hand-spun wool, homemade goodies, popcorn or just a little relaxation.