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WISCONSIN

NATURAL RESOURCES

August 1995 \$3.00



Kestrel on the hunt

Two photo contests

A cool secret of summer

POWER STRUGGLE



Why a woodpecker made a high-wire act out of nesting.

John J. Mutter, Jr.

It was quite accidental that my friend and I came upon wood chips scattered in one area of a field near where I live. There were no trees within 75 feet, so the discovery was puzzling. I picked up a few pieces. It looked like the wood had dry rot. The only wooden things nearby were wooden poles supporting power lines that carry 115,000 volts between Green Bay and Wausau.

Within minutes we put two and two together and stood in awe, staring at a three- to four-inch rectangular hole excavated about 20 feet up the pole. I recalled seeing a large woodpecker flying from the pole several days earlier, but thought nothing of it. The chiseler of this cavity nest goes by “black woodpecker,” “log-cock,” “black cock of the woods,” and several other names. Today we call *Dryocopus pileatus* the “pileated” (PILL-e-ated) woodpecker. It’s crow-sized. The body ranges from 16-19½ inches in length with a 28- to 30-inch wingspan. It is largely black with a white neck stripe, white linings on the wing and a large head topped with a red crest.

Pileated woodpecker at its power pole nest site.

I felt caught between a majestic pair of birds and a billion-dollar corporation. Should I call Wisconsin Public Service Corporation (WPSC) and report the pole damage or take a chance that everything would be all right until the young woodpeckers fledged?

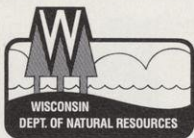
Thoughts of snail darters, Mount Graham red squirrels and northern spotted owls complicated my dilemma. On the other hand, if the pole broke off during an electrical storm in the dead of night injuring the line repairer and causing extensive power losses, I would surely bear some guilt.



GREGORY K. SCOTT

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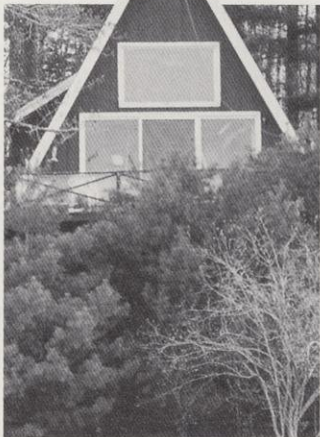
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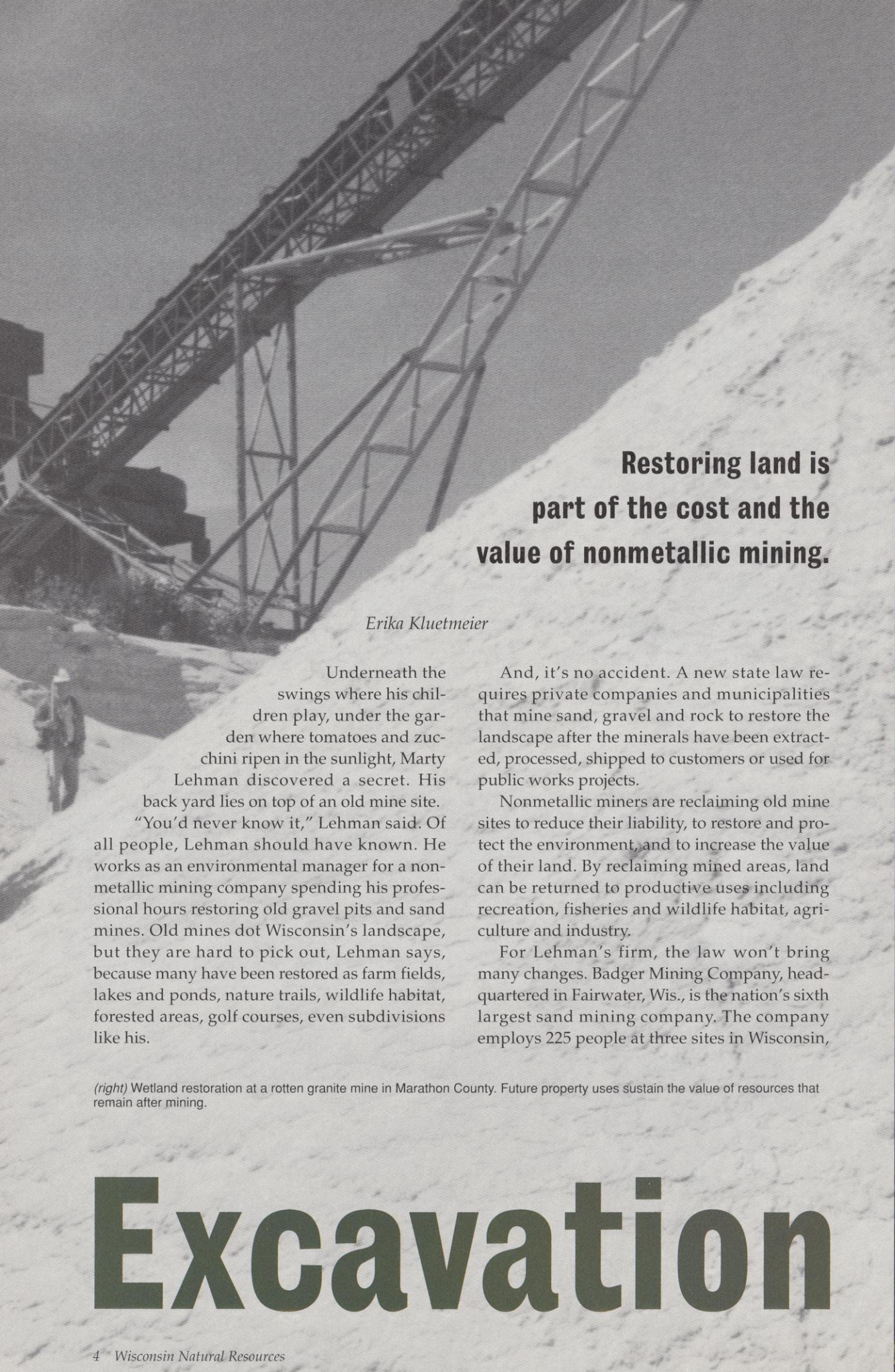
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GREGORY K. SCOTT, Gilman, Wis.



**Restoring land is
part of the cost and the
value of nonmetallic mining.**

Erika Kluetmeier

Underneath the swings where his children play, under the garden where tomatoes and zucchini ripen in the sunlight, Marty Lehman discovered a secret. His back yard lies on top of an old mine site. "You'd never know it," Lehman said. Of all people, Lehman should have known. He works as an environmental manager for a non-metallic mining company spending his professional hours restoring old gravel pits and sand mines. Old mines dot Wisconsin's landscape, but they are hard to pick out, Lehman says, because many have been restored as farm fields, lakes and ponds, nature trails, wildlife habitat, forested areas, golf courses, even subdivisions like his.

And, it's no accident. A new state law requires private companies and municipalities that mine sand, gravel and rock to restore the landscape after the minerals have been extracted, processed, shipped to customers or used for public works projects.

Nonmetallic miners are reclaiming old mine sites to reduce their liability, to restore and protect the environment, and to increase the value of their land. By reclaiming mined areas, land can be returned to productive uses including recreation, fisheries and wildlife habitat, agriculture and industry.

For Lehman's firm, the law won't bring many changes. Badger Mining Company, headquartered in Fairwater, Wis., is the nation's sixth largest sand mining company. The company employs 225 people at three sites in Wisconsin.

(right) Wetland restoration at a rotten granite mine in Marathon County. Future property uses sustain the value of resources that remain after mining.

Excavation reclamation

owns about 3,000 acres, but currently mines only several hundred acres at two sites near Fairwater and a pit near Black River Falls.

"The environment is our number one customer," Lehman says. "We have total support across the corporation for environmental restoration."

Nonmetallic mining companies like Badger are flourishing in Wisconsin because the state has diverse and ample deposits of peat and minerals, says Tom Portle, a DNR mine reclamation specialist. Both private businesses and communities extract sand, gravel, crushed stone, clay, building stone, rotten granite, topsoil and peat all over the state to build roads, manufacture dry wall and roof shingles, or landscape businesses and homes. These nonmetallic minerals are far more abundant in Wisconsin than metallic deposits containing copper, lead or zinc, Portle says.

How nonmetallic miners strike gold

State officials estimate there are 2,000 to 10,000 active nonmetallic mines in Wisconsin, including quarries. "It's difficult to get an exact figure because mine sites usually have several smaller satellite pits associated with the major deposits," Portle says. He estimates that the high annual demand for materials makes nonmetallic mining a \$200 million industry in Wisconsin. Nationwide, each person in the United States uses between 10 and 20 tons of nonmetallic materials in various products every year, according to industry records.

Two kinds of sand and gravel mines operate in Wisconsin: open pits and dredging operations. Most mining companies blast and crush rock in dry pits to extract sand and gravel; a few dredge sand from river bottoms.

Badger Mining is exclusively an open pit mining operation and extracts only silica sands. These rare sands are renown worldwide for their purity, hardness and grain shape. The hard, round grains don't compact well, which is especially useful to the petroleum industry, Lehman says.

Oil and natural gas explorers force silica sands under pressure to "bullet" or fracture rock formations surrounding a well to increase the flow of oil or natural gas. Silica sand is also used for core and molding sand in the foundry and metal-casting industry. Other customers use these hard sands in grout, abrasives, for water filtration and in constructing monitoring wells. The company sizes and sells 97 distinct grades of sand products.

Badger Mining predicts it has a 40- to 80-year reserve at its present sites. The firm ships about a million tons of sands each year by truck, rail or barges to its customers around the world.

Exploration and drilling activities locate the sandstone deposits. Before mining begins, the company develops a mining plan which also includes a strategy for restoration. After plans are in place and all the local, state and federal permits have been secured, operators at each of the small mine sites remove the top layer of soil that only a miner would call "overburden." The soil is either stored nearby for later use or it is hauled to stabilize and recover other mine sites. Holes are then drilled for placing explosives. Blasting frees sand from the sandstone formations.

A series of pumps, conveyors and elevators transport the sand to a processing plant where it is washed, dried, cooled, screened, separated and graded by sieve or grain size. Water used in the washing process is recirculated and reused.

Sand and gravel mining largely a local matter

Statewide regulations of nonmetallic mining are limited. Historically, counties or towns, which mine sands for road building and maintenance, were given authority to regulate nonmetallic mining operations including reclamation, says Mitchell Zmuda, a DNR water management specialist in Antigo. Subsequently, local government administered many of the required permits for land use activities such as creating a pond, enlarging or connecting navigable waters, grading banks, dredging, changing channels,

creating a bridge or culvert that covers a stream, and other activities that affect shorelines.

Nonmetallic mine operators often need to secure state DNR permits to contain sand and "fugitive" dust that blows off-site, drilling and blasting permits, stormwater permits, discharge permits if any wastewater is released to lakes or streams, and permits from the U.S. Army Corps of Engineers for certain mining activities that affect wetlands. The state is also consulted if the miner needs to monitor groundwater and drinking water wells.

"In the past, local governments had authority to pass ordinances requiring nonmetallic miners to prepare and finance mine reclamation, but few did outside of southeastern Wisconsin," Portle said.

The new state law sets guidelines for reclaiming nonmetallic mines more consistently across the state. The law directs the Department of Natural Resources to prepare model ordinances that local governments can adapt and adopt. Eventually, all mining operators will need a local permit that outlines a reclamation plan before the site is disturbed.

Watching out for local waters and neighbors

Nonmetallic mines located close to waterways can degrade water quality and fish habitat. Dan Koich, a DNR water management specialist in Eau Claire, has monitored two gravel pit ponds totalling five acres that changed the channel of the Rush River in Pierce County. During flooding, the aptly-name river jumped its banks and flowed into the gravel pits, forever changing the river channel. The mine operator attempted to realign the river, but it is still flowing through the pits today, Koich says.

"It took about 50 percent of the flow of the river, which means that a half-mile of river currently flows at half its natural flow rate," Koich said. People who live nearby are not finding any fish on that stretch of the Rush River, which normally supports a healthy

trout population, he said.

Koich says that an area sportsmen's club with the Natural Resources Conservation Service and DNR fisheries staff are currently working together to fix the problems. They are also gauging the effects on endangered species such as paddlefish.

Nonmetallic mining does change Wisconsin's terrain. Deep pits and quarries often create safety concerns for homeowners living nearby. Neighbors are also concerned about dust, noise, traffic, decreasing property values and private well water quality, according to Alice Newton, a member of the Fond du Lac Area Congregations United and Strong (FOCUS), a church-based group that has been vocal on mining and other issues.

"Mining companies are abusing lot lines, burning wood pallets and over-

blasting," Newton says. "Quarries are being used as dumps and we're concerned about our wells."

Still, Newton acknowledges that there are responsible miners who are reclaiming their mines and making an effort to work with neighbors to improve mine conditions.

Planning the mine's "afterlife"

"You should be thinking about reclamation when you identify a site that you want to mine and before you move the first shovelful of dirt," Lehman said. "Most important, consider the surrounding land use. We don't want to develop an industrial park next to a county park. We want to make the former mining site blend with county land use planning."

Reclaimed mining pits can support a variety of land uses, including snowmobile routes; cross country ski trails;

and nature walks; parks; farmland and cropland; wildlife and fisheries habitat; wildlife food plots; golf courses; ponds and lakes; subdivisions with lakefront property and industrial uses. Some reclaimed mines are in the Major Leagues: County Stadium in Milwaukee, home of the Milwaukee Brewers, sits atop an old quarry.

In addition to land use, reclamation planners like Lehman need to consider the volume of overburden, groundwater levels, potential for runoff, the size of the pit, and surrounding wetland and upland habitat when developing reclamation plans. Usually, the reclaimed land is graded, groomed, sloped or contoured, and seeded to minimize runoff and "stabilize" the mine site. Badger relies on a team of trained staff to reclaim old mines, but the company also consults with resource professionals from the Natural Resource Conservation Service, county land conservation departments, seed producers, DNR foresters and wildlife managers and, most importantly, adjacent landowners to incorporate native species of grasses and other vegetation that complement the surrounding landscape.

The firm currently plants 4,000 to 15,000 trees and shrubs every year. They also create structures in lakes, ponds and wetlands for fish habitat. Lehman says "reclaiming as you go" prevents the need to store overburden and saves money. Badger is also reusing foundry by-products such as used sand and bentonite, a natural clay, to fill in some old pits. These "landfills" are then capped and wildlife food plots are planted on top.

"We try to be a good neighbor — that's really important to us," Lehman said. Several conservation groups working with Badger include: Izaak Walton League, National Wild Turkey Federation, Wings Over Wisconsin, Walleyes For Tomorrow, Whitetails Unlimited and Ducks Unlimited. "Whenever possible we try to create partnerships with business, industry, and resource professionals," Lehman said.

The company also provides community scholarships for students pur-



MITCHELL ZMUDA

(left) A good job reclaiming a mined site includes forming contours that blend with the natural landscape and drainage patterns. Restoring the "overburden" soil and vegetation can make the property more useful and more valuable for wildlife, plant communities and human recreation.

(below) Ponds are often created as excavated mining sites drop below the water table. Here mining company volunteers and a local conservation group combined their expertise to build fish cribs which provide artificial cover and fish habitat.



MARTIN T. LEHMAN

suing careers in such mining-related careers as engineering and environmental studies as well as supporting mining-related research at universities.

Here's a snapshot of a few reclamation projects at Badger Mining Company:

- **Taylor Property.** One site was recovered to form a 10-acre pond dubbed "Taylor Lake." Another three-acre pond, called Wood Duck Pond because it is now a spring staging area for woodies, settles out clays from wastewater. Employees set up a Resource Conservation

Organization to restore pheasant and deer habitat at the site. Eighth-grade students and Boy Scouts from nearby Alma Center planted trees on the property. The property is now open for hunting for employees, families and friends.

Another manmade pond on the site, Nerby Pond, catches sediment to trap erosion. It's adjacent to a wetland that provides a food plot and nesting cover for wildlife.

- **Resource Center Site.** This property, nestled between the Fox River and Highway 49 on the south side of Berlin, Wis. will be developed as

company headquarters on land that was filled with used foundry sands. The remaining land will remain as wetland. The conservation group Walleyes For Tomorrow helped restore the area for public fishing.

- **Fairwater Facility.** One five-acre site near Fairwater will become a recreation and fishing area. Upland and fisheries biologists are already planning habitat restoration and fish stocking in the area.

Reclaiming value

"The industry now understands that reclamation is part and parcel of mining," said Thomas Hunt, administrator of land resources and stewardship for Wisconsin Power and Light and a representative of the American Society for Surface Mining and Reclamation. "In the old days they were dragged kicking and screaming; now it's an integrated part of mining...and the economics and obligations are there."

For instance, in Marathon County (the only county currently requiring reclamation permits for nonmetallic mining) reclamation adds 5-7½ cents per cubic yard to the cost of the non-metallic minerals. But that figure doesn't include the increased land value after reclamation is completed — an estimated 400 percent when an abandoned mine is restored to marginal tillable land, said Jim Burgener, Marathon County Zoning Administrator.

"There is going to be a cost for reclamation," he said. "It's going to cost everyone a little bit more for mined materials. But there's benefit too in producing usable, taxable land — some place that isn't a magnet for a dumping ground," he said. Many people don't favor mining, Burgener noted, but they ought to view "every reclaimed site as a success story, whether it's reclaimed into a farm field, wild area, tree plantation or subdivision." □

Erika Kluetmeier writes about environmental issues for DNR's Bureau of Information and Education in Madison, Wis.

Mined sites can recover, given time and tending. (top) A reclaimed mine site along Artus Creek, Marathon County, 1979.

(bottom)The same site seven years later.



MITCHELL ZMUDA



MITCHELL ZMUDA

A level field for miners

For the first time, communities and businesses that mine sand, gravel, peat and soil will have to put their money where their minerals were. Act 464 of the Laws of 1994 requires nonmetallic miners to submit acceptable plans for recovering open pits before mining operations can start. Moreover, firms and communities must guarantee they will maintain the funds to carry out those reclamation plans if the mine goes out of business.

The law directed DNR staff to develop rules (that will be codified as Natural Resources Code 135) to ensure that thousands of nonmetallic mines are reclaimed consistently across the state.

"The rule is going to put the state's nonmetallic miners on a level playing field," said Marty Lehman, an environmental manager with Badger Mining Company in Fairwater, Wis. "Presently, it's harder for mining companies that reclaim their sites to compete with those who don't. These rules will ensure everyone will reclaim their sites, and that will help the reputation of the industry in the long run."

Currently a patchwork of regulations from county to county make it confusing to operate mines in different parts of the state, says Tom Portle, DNR mine reclamation specialist. The rule sets more uniform guidelines for counties and local government to interpret. The rule provides less stringent standards for established mines.

Mining companies will still have to follow state water regulations, other environmental laws, and will have to work within local land use and zoning laws. But, sites in or near navigable waters will be exempted from duplicate state and local regulations.

The proposed rule favors using creative solutions to reclaim old mine sites. "The end result is what's important, not necessarily how you get there," Portle said. "It's up to the mine operators to reclaim the sites as they see fit. But, they should keep in mind subsequent land uses."

Other aspects of the proposed rule include:

- **Permitting.** To obtain a local mining permit, the mine operator will have to prepare a reclamation plan that defines how the land will be used when the mine closes. The public will have an opportunity to comment on each permit application. The rule allows local governments to charge permit fees on active mines to cover



MARTIN T. LEHMAN

All nonmetallic miners now provide up-front money and plans to recover sites before new mines can open. Sand and gravel mining is a \$200 million industry in Wisconsin.

government costs to develop ordinances and run a permitting program.

- **Financial assurance.** Money must be set aside up-front to reclaim a site in case a company goes out of business. Operators must provide guarantees that they can pay to reclaim the site as outlined in the reclamation plan.
- **Model ordinance.** Each county must adopt a reclamation ordinance based on the state's model ordinance. Local governments can develop more stringent ordinances if they choose.
- **Registration of mineral deposits.** To meet increasing and conflicting demand for land and nonmetallic minerals in urbanizing areas, the DNR has proposed a system to register mineral deposits in the state to ensure that nonmetallic mineral supplies will be available in the future.

Portle says the rule encourages miners to work with community planners to consider creating more recreational space, parks, housing (including lakefront property), fish and wildlife habitat, forestry, and land for agricultural or industrial uses. It will also help protect water quality and prevent injuries.

The DNR received comments on the proposed rule at public hearings last May. The rule is expected to be final later this year.



DONNA MCKAY

Dinner for two

Watching a kestrel consume its prey whets the appetite of a keen nature observer.

Robert J. Zimmer

Laced with crackling white sparks and streaks of lightning, the ominous black clouds rose and fell, twisted and turned, as the distant rumbles of thunder grew sharper and louder. The entire sky from north to south had turned an eerie greenish-black with the approach of an oncoming storm. Despite the obvious power and lure of

this awesome natural spectacle near my rural Wisconsin home, I could not quite keep focused upon it. Something else equally stunning had captured my eyes, something small and white against the blackening sky, hovering there, unmoving: a bird.

Suddenly and swiftly, the tiny bird plummeted to the clover meadow

below and, in an instant, rose with something firmly clutched in its claws. It was a snake, easily a yard long, still writhing and twisting as it was lifted to the bird's perch on a nearby fencepost. Surrounded by a vociferous group of red-winged blackbirds, the hunter meticulously picked apart its freshly caught meal.

The American Kestrel (formerly known as the sparrow hawk) is a small, sleek bird with long pointed wings and a narrow tail. The kestrel is a member of the falcon family, a group of birds of prey which are swift of flight and keen of vision. With their sharp curved talons, falcons are able to grasp their prey securely; powerful wings and rigid tails allow the birds to maneuver through the air with quickness and certainty.

The smallest of the falcons, as well as the most common, the American Kestrel (*Falco sparverius*) is the only one exhibiting a russet brown back. The face is strikingly marked by two distinct black lines against a white background. The male, measuring 11 inches in length, has blue-gray wings and a reddish tail ending in a thick black band. The somewhat larger female is brown overall with a less distinct head pattern. Both are spotted with black.

The male kestrel I was observing devoured most of the snake, the remains of which were snatched away by a herring gull that had flown over from a freshly plowed adjacent field. After a few moments, the kestrel took to the sky again, an ivory jewel against the ever-darkening clouds. I sat down against an old fencerow and watched as the kestrel resumed feeding, unaffected by the turbulent clouds.

The kestrel's strategy is to select a promising location within its territory from which it can see clearly in all directions. Perched on this vantage point, typically a dead limb, telephone pole or wires, the kestrel scans the entire panorama for prey. To get a closer look, a kestrel can hover for long periods in midair. Prey animals, startled by the passing shadow of the kestrel overhead, often make the mistake of bolting, which creates motion and alerts the kestrel to their whereabouts. When the kestrel is certain of its target, its wings cease their rapid motion and the bird drops like a weight, grasping the prey in its powerful talons and carrying it back to a perch to be consumed.

The diet of the American Kestrel varies according to the season and geo-

graphic location. Kestrels in summer feed mainly upon larger insects such as grasshoppers and crickets, as well as snakes, frogs, toads and small rodents. During the winter, more mice and small birds are eaten. Kestrels will frequent popular bird feeders, waiting for sparrows, juncoes, chickadees and titmice, upon which they will swoop down like lightning.

As the bird I watched continued to feed, he finally must have sensed the threat of the oncoming storm. After one final plunge to earth, he sped away, prey in tow, toward the woodlot on the far side of the meadow. The kestrel disappeared among the trees with a squealing cry as the clouds opened up and the rain began pouring down.



DARRYL R. BEERS

Kestrels capture their prey on the ground, unlike most falcons. They take insects, reptiles and rodents in the country; house sparrows and small rodents nearer cities.

An adaptable raptor

During the breeding season, American Kestrel pairs have a summer territory which they occupy and protect from approximately early March through June or July. Prior to pair formation and courtship, the female kestrel will freely move in and out of various male territories early in the season to choose her mate. After the birds are paired, it is the male who usually chooses the nest site, typically in an older tree overlooking a field or orchard. The male persuades his mate

to follow him from tree to tree; he will perch nearby while she explores and inspects each abandoned woodpecker hole or rotted branch base as a possible nest cavity. Nest sights are chosen early in the season, from February on.

Unlike other birds of prey that build huge, bulky nests of sticks and branches, the kestrel expends no energy whatsoever in organizing a structure. No lining material is used in the nest and eggs are laid in the bare tree cavity or hole. Undaunted by human presence, kestrels will also nest in bird houses, next boxes, and the cornices and niches of buildings in urban areas, where flocks of starlings and sparrows provide abundant food.

After pairing, males and females restrict themselves to their own specific territories, the size of which varies with the habitat and availability of food. For a time, the female may hunt alongside the male, but soon she will stop hunting and stay only in the immediate area of the nest, preening, readying herself to lay eggs, and feeding on food brought by the male.

Four to six spotted, creamy white eggs are laid one to three days apart and incubation begins after the last egg has been laid. They are incubated, mostly by the female, for about 30 days. The male will normally relieve the female on the nest twice daily — once in the morning and again late in the afternoon.

Immediately after the eggs hatch, the male provides both his mate and their young with food. As he approaches the nest, he will utter a call to the female, who never strays far from the young. The female will fly out and follow him to a specially chosen perch where the food is transferred as the birds dance and bob heads up and down, side to side. The female then carries the food to her own special perch where she will eat some and store some for the young. The hatchlings get immediate practice ripping up their food with talons and hooked beaks as the female simply drops food into the nest and the young vie for a share.

As the young fledge, they may leave the nest during the day and practice



flying close to home. They remain in nearby trees and return nightly to the nest cavity. After about two weeks, the young are able to hunt for themselves and, in certain areas where they are abundant, large groups of juveniles may be seen hunting together when they have become independent of their parents. These groups break up with the beginning of the autumn migration.

The migration patterns of the American Kestrel differ in each region of the continent. In the north, the birds are primarily migratory, drifting south in late summer. In the middle part of their range, some of the males may stay and hunt on their chosen territories, while others will move south. In the southernmost regions of their range, kestrels may not move at all from the breeding grounds, or may simply drift to more favorable habitats.

Throughout the entire winter season males and females occupy different types of habitats. The females remain in the more favorable hunting areas, such as open land and meadows, while the males will converge on the more dense growth of forests and the outskirts of urban areas. Competition for food increases when migrants from the north or from higher altitudes enter these areas for the winter.

As the storm wound down, I looked out the car window and spotted the kestrel only a few yards away on the tallest fencepost along the overgrown row. Oblivious to the fierce downpour, the bird had waited out the fast-moving storm. Clapping his long, pointed wings together, the kestrel slowly turned his keen eyes from side to side, pausing for a moment to fix his gaze on the blackbirds which had resumed their noisy chatter. Though I doubt he could have tackled one of the large red-wings, the kestrel's interrupted hunt was about to begin again over the meadow. But I didn't stay to watch. I had my own supper waiting down the road. □

Robert J. Zimmer helps rehabilitate injured wildlife at the AERIES Wildlife Rehabilitation Center near Appleton. He lives in rural Winnebago County.

HERBERT LANGE



DNR FILE PHOTO

Shack shots and matters of state

Cock your cameras.

Send us photos of your secret getaway and favorite state symbols.

David L. Sperling

The shack was a foreign concept to me. In the metropolitan suburb where I was raised, no one we knew had one. Our fall weekends were spent at home, raking leaves, picking a few apples, biking with friends, and burning the leaf piles during half time of the televised football game. We didn't hunt or spend much time afield looking at wildlife. Even if we walked in the woods, we didn't notice buck scrapes, rubs or many other natural signs of the season.

The few second homes we had seen were not lakeside cottages or woodland cabins, they were full-fledged houses, country weekend retreats for people who spent the rest of the week in suits, in town and in tune with the fast pulse of business.

So when I moved to Wisconsin, made friends and got my first invitation to "the hunting shack," I was surprised by what I found. After a five-hour trip from Madison, we bounced a good half-mile off a rutted country road that cut through nondescript

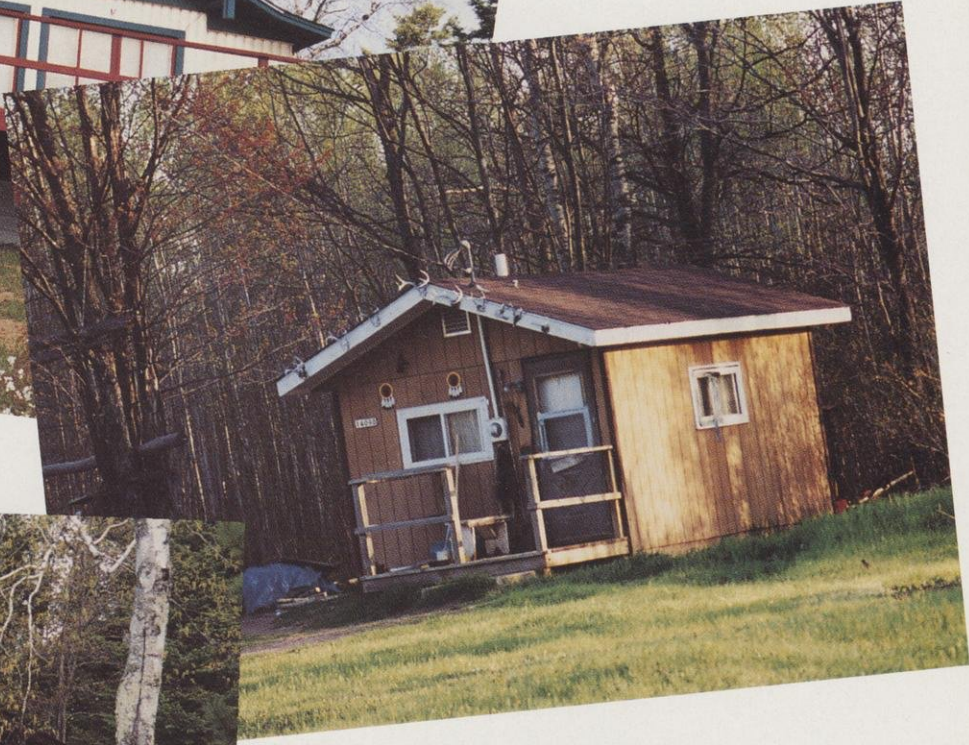
stands of jack pine and popple. Here was a simple, cinder block structure way off the beaten track. "We're here," my friend said.

We can't be, I thought, it must get better inside.

Wrong! The inside was as simple as the outside. It was furnished in "early American attic" — a few naked bulbs strung from wires; a beat-up, lumpy couch; a pot-bellied wood stove in one corner; a bunk area that was cobbled together with two by fours, plywood and old mattresses; and an old formica



Cabins plain and fancy serve as almost sacred getaways we go to.



PAGE 14 PHOTOS GARY HOMLUTH

table with plenty of chairs, a few decks of worn cards and a dice cup. The "kitchen" consisted of an old porcelain sink (no faucets or running water) with a bucket under the drain to catch wash water. The chipped counter held a two-burner electric hot plate. An old Kelvinator refrigerator hummed nearby. It contained copious quantities of beer, an open jar of pickled eggs, half a jar of horseradish and a squeeze bottle of mustard.

The walls had plenty of hooks laden with bulky, coarse hunting clothes and some raingear. Underneath were jumbles of worn work boots, galoshes and waders. One shelf near the door was stacked with green and yellow boxes of gun shells. The other shelf near the sink had a few boxes of crackers, some sugar, flour and an open can of shortening.

The decorations were a perfect complement. An insurance company calen-

dar and an old hand mirror hung from a nail on the wall. Dog-eared sporting goods catalogs, dusty hunting magazines and a few paperbacks were piled about. A coat hanger served as antenna for an old black-and-white TV.

"Isn't it great!" said my friend. I was speechless. I couldn't believe that he and his buddies spent occasional weekends and the last seven hunting seasons living here.

Clearly, I didn't get it. The hunting shack was more important for what it wasn't than what it was. It wasn't work. It wasn't obligations. It clearly wasn't a heavy dose of creature comforts. It was comfortable, but it wasn't easy. The hand pump and the outhouse built an instant appreciation for indoor plumbing.

Still, it had its charm. The roof didn't leak. The wood stove was warm and inviting. The company was good and the conversation flowed freely. I

learned a few dice games.

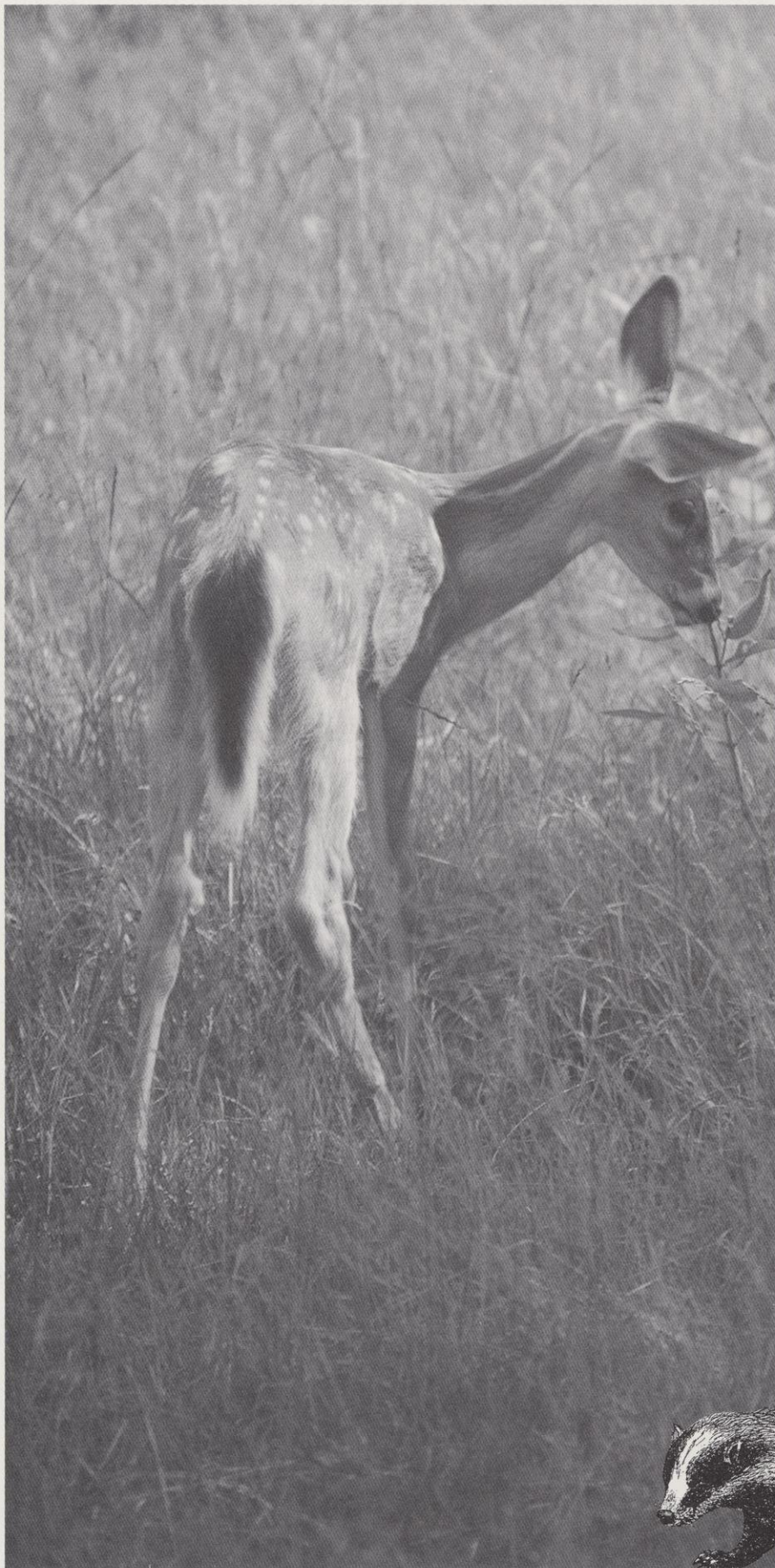
In the ensuing 20 years, I've had the good fortune to visit several more "shacks" ranging from comfortable cabins to elegant homes. One family "cabin" of many decades defines my vision of close quarters. Another was so steeped with mounts, decoys and historical artifacts that I yearned for those little museum cards to explain the history and stories captured in each piece. All of the shacks shared a few attributes — they were places for simple pleasures, hospitality, tradition, relaxing.

We bet that's what you appreciate about a special retreat that you own or just visit. We invite you to share photos, slides and short descriptions of your hunting shack or weekend getaway. Don't just send us a picture of the outside. Consider focusing on an unusual feature or artifact that captures a good story or the feel of the place.

We'll collect your prints, slides and descriptions between now and May 1, 1996. If we get enough interesting tales, we'll select photos and descriptions for use in our October 1996 issue.

Just follow these simple guidelines:

1. Only send slides or photos that are in crisp focus and well lit without being overexposed. As you take your photos, try varying the exposure to capture the scene.
2. Don't write on the back of the photos. Enclose a note describing each photo. Please do not tape or paper clip notes to the photos as these can damage your pictures. Forward prints or slides but not negatives, please.
3. If you would like your photo returned, enclose a self-addressed stamped envelope. All photos will be returned in September 1996.
4. Please limit your descriptions to 100 words or so. We will want to print a number of photos and descriptions.
5. Photograph your hunting shack or special place at the time of year when it is most inviting to you. Consider taking us inside your "shack" to capture its special charm. You can send us several shots, but only one photo of each place will appear with the story.
6. We understand why some people don't want to reveal the exact location of cabins that are only occupied part-time, but please identify in which area of the state the cabin is located.
7. Readers who have visited "shacks" they'd like to describe are welcome to take part. Please do not forward photographs of commercial establishments.
8. Mail photos, narratives and return envelopes to Cabin Photos, *Wisconsin Natural Resources* magazine, P.O. Box 7921, Madison, WI 53707.



Symbolic Wisconsin

We thought it would be equally fun to share your photos of Wisconsin's official wild symbols. Snap to attention as we sound off the roll call of the swimming, flying, crawling and well-rooted residents that have received your state seal of approval:

State Animal — badger

State Wildlife Animal — white-tailed deer

State Bird — robin

State Fish — muskellunge

State Tree — sugar maple

State Flower — wood violet

State Insect — honey bee

State Fossil — trilobite



State Symbol of Peace — mourning dove

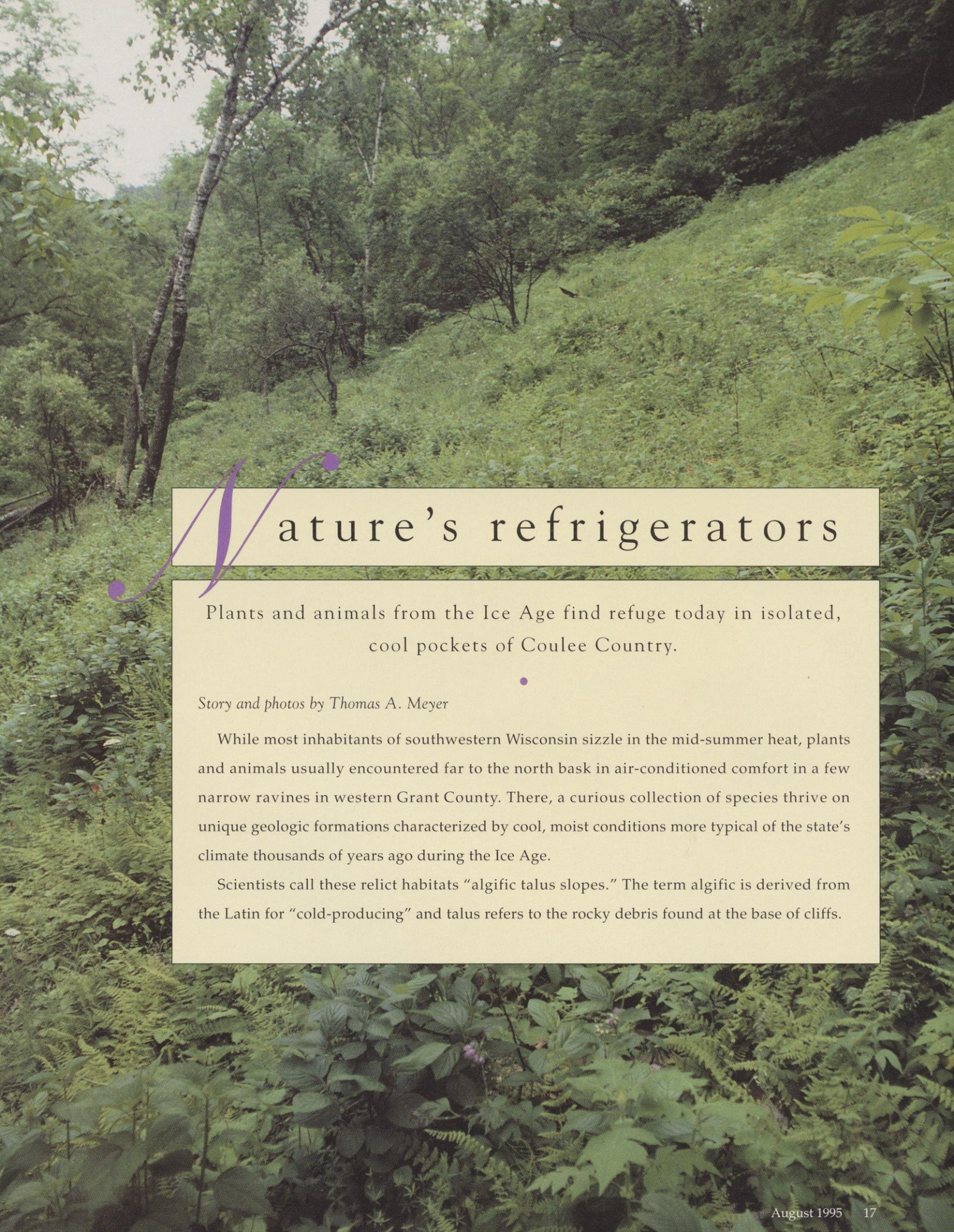
What about the American water spaniel, dairy cows, Antigo silt loam soil or galena? Well folks, they're state symbols too, but we'd rather stick to the wild ones.

Follow the same general directions as above. Tell us where and when you took your photos. We'll accept photos and slides of these official state emblems until August 1, 1996. Send these to State Symbol Photos, *Wisconsin Natural Resources* magazine. P.O. Box 7921, Madison, WI 53707. Have fun and keep those photos coming. □

DON BLEGEN

White-tailed deer fawn in August.





Nature's refrigerators

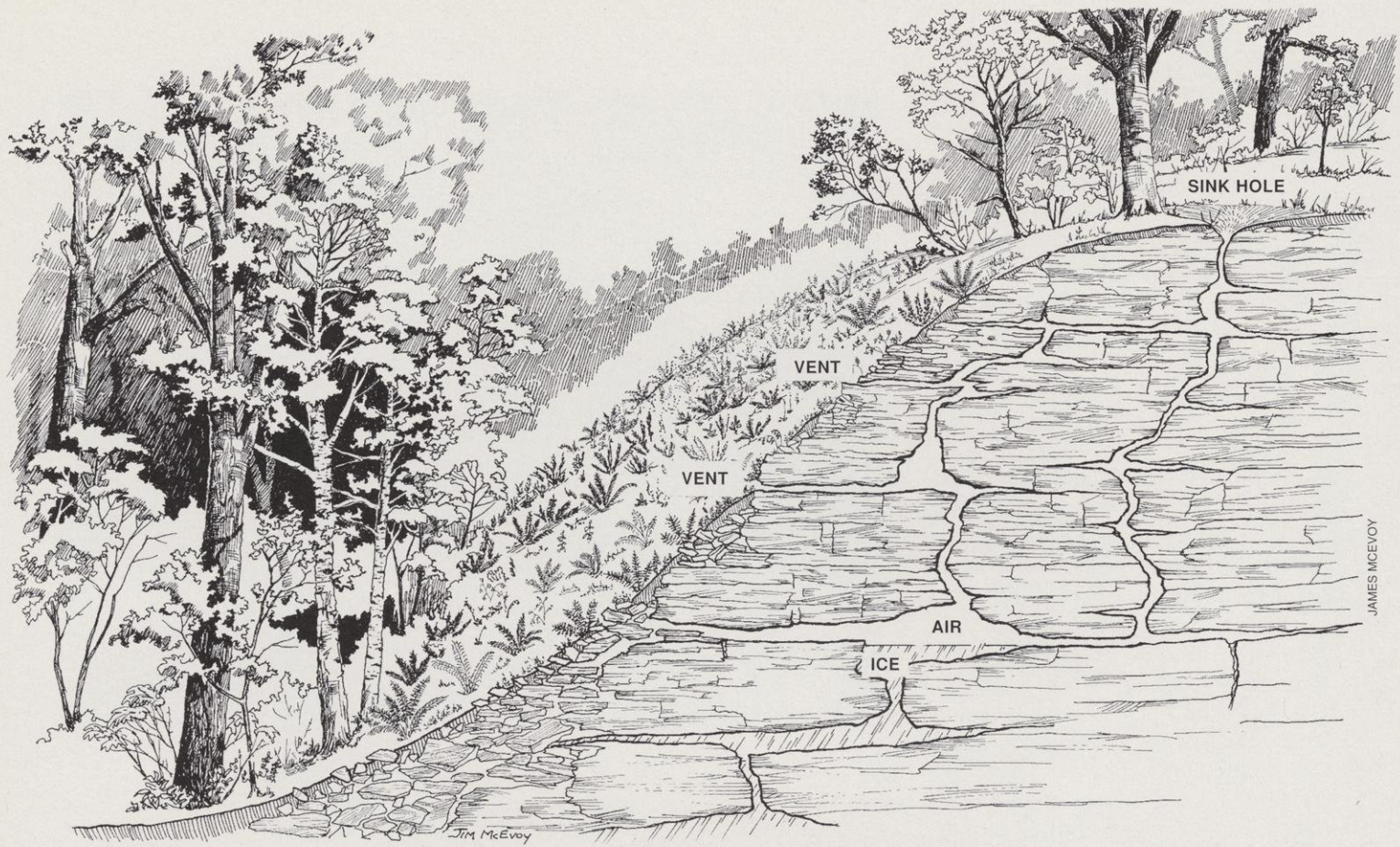
Plants and animals from the Ice Age find refuge today in isolated, cool pockets of Coulee Country.

Story and photos by Thomas A. Meyer

While most inhabitants of southwestern Wisconsin sizzle in the mid-summer heat, plants and animals usually encountered far to the north bask in air-conditioned comfort in a few narrow ravines in western Grant County. There, a curious collection of species thrive on unique geologic formations characterized by cool, moist conditions more typical of the state's climate thousands of years ago during the Ice Age.

Scientists call these relict habitats "algific talus slopes." The term algific is derived from the Latin for "cold-producing" and talus refers to the rocky debris found at the base of cliffs.





(above) Warm air in summer cools as it drops from the sink hole at the top of the algific slope through fissures and crevices. The air passes over icy masses in chambers and flows out vents farther down the slope. Certain species thrive near these perpetually cool, moist vents.

(left) Dr. James Theler, UW-La Crosse collects leaf litter near a talus vent. He will later search through the debris for small snails.

(opposite page) Algific slopes support a variety of species that are commonly found, uncommon in the region and extremely rare statewide. (background) A more common species, bulblet fern. (inset) Tall lungwort is more typical in northern Wisconsin.

A historical slant on slopes

Geologists discovered algific talus slopes in Wisconsin in 1982, but the history of the formations dates back to the late Pleistocene period and the last glacial advance. The slopes formed in certain rock formations found only in the Driftless Area — the portion of southwestern Wisconsin, Iowa, Minnesota, and Illinois not covered by the last glaciers. (The deposits of sand,

gravel, and boulders left by the ice sheet are called “glacial drift,” hence the name “Driftless Area.”) The region is also known in Wisconsin by a more picturesque name: “Coulee Country.” This 18-county area is distinguished by its high ridges, deeply-cut valleys, and craggy rock outcrops, the result of eons of wind and water erosion. Spared the crush of the mile-thick blanket of ice, the Driftless Area landscape appears more rugged than the glacially-smoothed remainder of the state.

About 18,000 years ago, as the edge of the glacier was poised not far away in central Wisconsin, tundra-like conditions existed in the Driftless Area. Scientists hypothesize that algific slopes formed at this time on north-facing cliffs underlain by shale and composed of thick and thin layers of Galena dolomite, a limestone common in the region. Rainwater seeped

into cracks in the thinner layers of rock. When it froze, it expanded and split off small chunks of limestone that toppled to the base of the cliff, eventually accumulating in a jumble of talus. This ice-wedging action also formed sink-holes and larger fissures in the thicker layers of rock on top, where water trickled along fractures in the large blocks of limestone and froze. The result was a system of connected, subterranean channels that allowed water and air to move from the top of the cliff to the talus slope at its base.

Here’s how these “natural refrigerators” probably work: Rainwater trapped in the fissures and chambers freezes during winter. In spring, colder, denser air in the rock’s channels passes over the ice, picks up moisture, and spills out of the base of the slope through numerous small openings, or vents, in the talus. This in turn draws

warm air in through the sinkholes at the top of the slope, creating a constant flow of cold, moist air.

In winter, the system reverses itself. The air in the chambers, now warmer and lighter than the outside air, rises and escapes through the sinkholes at the surface. Cold air, drawn in through the talus vents, refreezes water in the chambers and fissures. The north-facing exposure of the slopes protects them from the summer sun and desiccating winds.

As the glaciers withdrew and the climate slowly warmed, the plants and animals that had found refuge from the cold in regions south of the ice sheet migrated north, to colonize the newly available habitat. Much of Wisconsin, still under the cooling influence of the melting ice sheet, afforded perfect conditions for boreal, or cool-weather, species to thrive. But as the ice continued its northern retreat and temperatures continued to rise, many cold-loving species could no longer tolerate the higher temperatures. Most were replaced by species adapted to the warmer, drier climate typical of southern Wisconsin today. Other species tagged along in the wake of the glacier as it retreated into Canada.

Some plants and animals, however, had found in the algific slopes tiny islands of habitat with cool, moist conditions where they could weather the warming climate. These species have captured the attention of botanists and zoologists.

Where ferns, cresses and currants flourish

In summer, the verdant talus slopes appear as lush, treeless openings on forested hillsides. The "refrigerated" substrate of limestone blocks covered by thin soil is too cold for most tree roots to survive. The soil temperatures remain fairly constant, varying between 24–50°F. The adjacent woods are composed of trees typical of southern Wisconsin — sugar maple, oaks, walnut — but the trees and shrubs on the periphery of the algific slopes are usually found much further north. Paper birch, black ash, mountain



Super tiny and super rare, these Hubricht's vertigo snails are "living fossils" of species that thrived during the Ice Age that ended 10,000-15,000 years ago.

(right) Small bishop's cap, another uncommon plant in southern Wisconsin that thrive in these rare cool coulees. (inset) The Cherrystone drop is a threatened snail found near the moist outvents. The one on the left is alive.

maple and red-berried elder rim the slopes, forming a striking botanical contrast to the surrounding forest.

The ground layer supports a rich growth of bulblet fern and mosses, as well as a variety of plants typically found in boreal regions and northern Wisconsin. They include Hudson Bay currant (*Ribes hudsonianum*), Kamchatka rock cress (*Arabis lyrata* ssp. *kamchatica*), tall lungwort (*Mertensia paniculata*), and small bishop's cap (*Mitella nuda*). Bryophytes (mosses and liverworts) typical of wet areas form dense clusters near the slope's outflow vents. Moist air condensing as it emanates from the vents apparently creates a wet microhabitat suitable for those plants to flourish.

Not surprisingly, rare species also call the slopes home. The state-endangered intermediate sedge (*Carex media*) is found only on algific slopes and nowhere else in the state. The nearest known populations of these grass-like plants occur along Lake Superior in Minnesota. A companion of the sedge is northern monkshood (*Aconitum noveboracense*), named for the hood-like shape of its deep blue flowers. This

striking member of the buttercup family apparently requires "cold feet," and although the plant is not restricted to algific talus slopes, one Grant County site shelters a population among the largest on earth. Northern monkshood grows only in a couple of dozen locations in North America and is on both the state and federal list of threatened species.

Where time moves at a snail's pace

Probably the most notable denizens of Wisconsin's algific talus slopes are the terrestrial snails, or gastropods. Some, like the reddish, pea-sized cherrystone drop (*Hendersonia occulta*) are found also on other cool, moist, north-facing hillsides in the Driftless Area. The cherrystone drop is sufficiently rare to be listed as threatened in Wisconsin.

Two species of vertigo snails survive exclusively on the algific slopes. The Hubricht's vertigo (*Vertigo hubrichti*) and the occult vertigo (*Vertigo occulta*) are truly remarkable considering they were previously known only from fos-



sils, found in deposits as far south as Kentucky. They were thought to be extinct, casualties of the warming, post-glacial climate. To the astonishment of gastropodists, these tiny creatures recently were found alive, crawling on algific slopes in Iowa, Wisconsin and Minnesota.

These “living fossils” were more widespread across the region during the Pleistocene. They were probably unable to keep pace with the receding glaciers and were left behind, confined to their tiny islands of algific habitat and isolated from each other by inhospitable terrain. Today, these vertigos exist nowhere else on earth save a few algific slopes in the Driftless Area. They are among Wisconsin’s rarest creatures — both are on the state-endangered list.

A rare, and rarely found, habitat

Algific talus slopes are one of the state’s scarcest ecosystems. Despite intensive searches by DNR Bureau of Endangered Resources (BER) staff and others, only two functioning algific slope complexes have been discovered in the state. Both are in Grant County. One complex consists of three cold-venting areas, while the other contains five discrete patches. The largest slope is elongated — about 500 feet long by 50 feet wide — and hugs the north-facing wall of a small box canyon. The other slopes are small, on average only a few hundred square feet each. In total, algific talus slopes in Wisconsin cover only about one acre of land!

The Department of Natural Resources, through BER’s Natural Areas Program, has been cooperating with the U.S. Dept. of Agriculture and The Nature Conservancy to protect the sites and preserve the biological and geological wonders they contain.



Northern monkshood is threatened statewide and nationwide. In fact, one of the world’s largest populations is found on an algific talus slope in southern Wisconsin.

Algific slopes are exceptionally sensitive to disturbance. If the air intake sinkholes are disturbed, or the talus outflow vents are trampled and plugged, the current of cold air — the slope’s lifeblood — is shut down and the system no longer functions. Deprived of cool temperatures and moisture, the unique species that populated the slope habitat for thousands of years die out.

All known algific talus slopes in the state are on private land. To date, the department has been unable to secure permanent protection for these rare

sites. Some of the landowners have agreed to voluntarily protect their slopes. Unfortunately, a few of the best sites are currently threatened by logging and grazing livestock.

These magical places contain our Ice Age legacy. They are worth preserving for the generations to come, who can then thrill to the sight of living fossils, and marvel at nature’s progress across the passage of time. □

Thomas A. Meyer works as a Natural Area Specialist in the Bureau of Endangered Resources.

A future for a proud heritage

A national conference on hunting and contemporary outdoor issues comes to Wisconsin this month. Join us.

How will we secure a future for wild places and wild animals? What role will hunters play in that future? What partnerships can we forge so hunter and nonhunter feel good about their mutual support for a wild world — weighty questions that are worth stopping the daily demands of job, home life and play time to answer.

For the past three years, professional wildlife resource managers, hunters, outdoor educators and conservationists have convened for a few days each summer to understand hunting's past, measure conservation achievements from the hunting public and discuss contemporary issues that influence hunting's future. This year, the meeting will be held in Wisconsin at the end of August. You may never have a better opportunity to hear and discuss outdoor issues with a diverse spectrum of national leaders.

The hunting public and a much larger group of outdoor enthusiasts who would rather camp, hike, bike study nature or just walk, share a deep interest in maintaining open spaces, but they don't equitably share the costs to maintain it. The shooting sports still pay the lion's share — 90 percent — of the costs for habitat recovery and wildlife conservation in this country. Less than 10 percent of the federal budget for the nation's fish and game agencies are paid by general tax dollars. Moreover, all lands purchased with excise taxes on hunting equipment are open to the public, yet 70–90



ROBERT QUEEN

percent of the people who use those lands are not hunters.

That's not to slam the nonhunter. The fact is, we largely have not asked the nonhunters what they would be willing to pay for. Given the trends toward fewer hunters, we need to better explore the common ground that all outdoor users share, and share the costs for the activities we enjoy. It's the sort of discussion you could join in August.

As society changes, fewer people own rural property, and lifestyles keep people in town more, all outdoor users would benefit from outdoor mentors and training. Outdoor skills centers can teach everybody ethical behavior in the outdoors, wildlife management practices, field identification, reading the landscape, tracking, stalking and interpretive skills, orienteering, outdoor survival skills and the enjoyment of wild foods. Whether one hunts or not, there is great value in finding mentors who have skills you want to gain, practice outdoor ethics you admire and are willing to guide your learning.

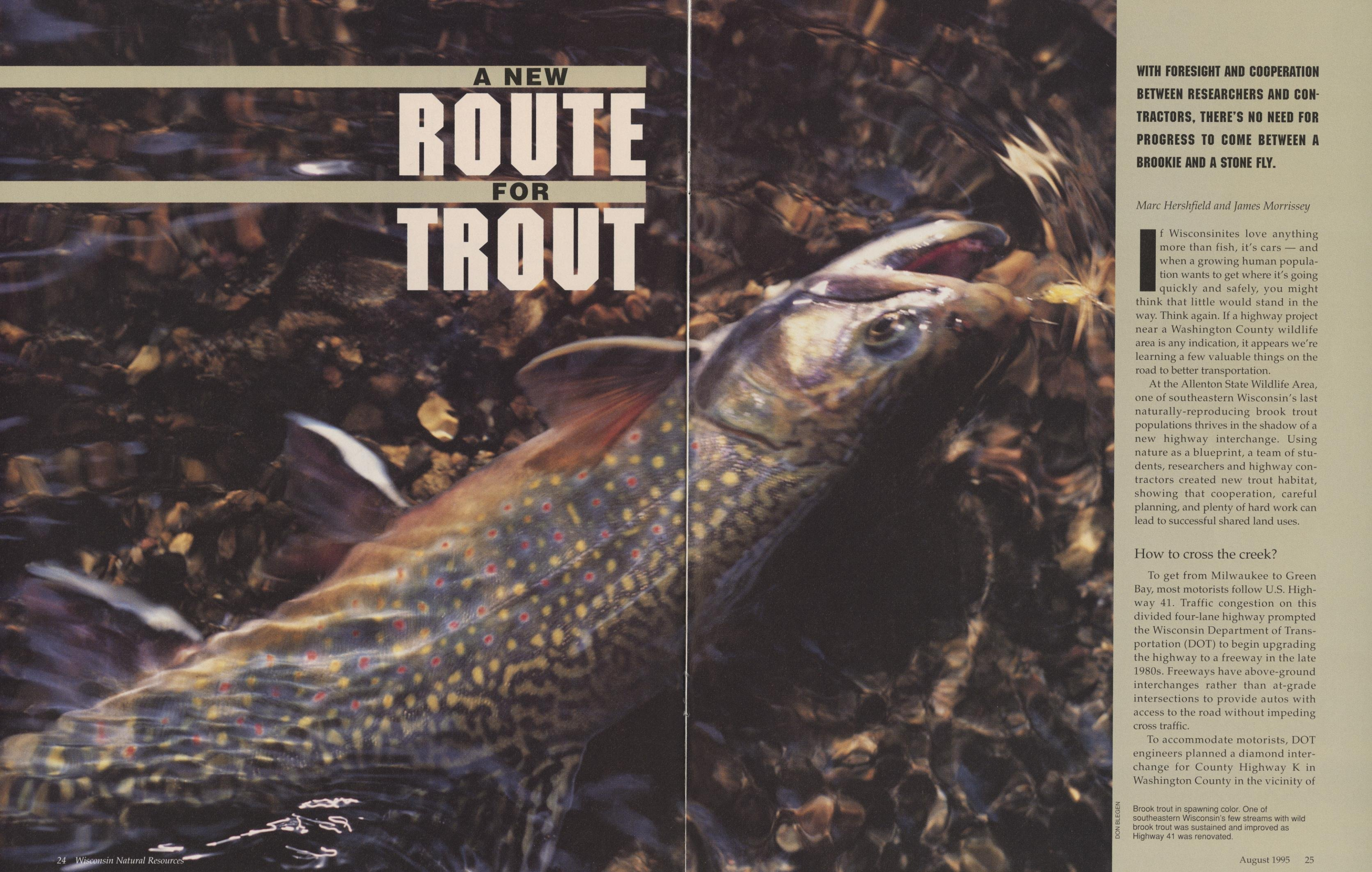
The experienced hunters know that as well as anyone. Their numbers are

dropping (only eight percent of the U.S. populace hunts, 16 percent of Wisconsinites hunt, but most people have neutral views about the activity), hunting is still largely a white, male activity, younger children have less exposure to a relative or friend who hunts and fewer places are open for public hunting. If the sport and the sporting nature of hunting are to thrive, today's hunters need to find new ways to reach out to urban

children to discover who would like to learn to hunt given the opportunity. You'll learn how different communities are doing that at the summer symposium too.

For those who choose to attend, the August 28–31 conclave will include lively discussions and hands-on activities. The diverse group of speakers will include Governor Tommy Thompson, DNR Secretary George Meyer, Aldo Leopold's daughter Nina L. Bradley, the chief of the Fish and Wildlife Service Mollie Beattie, the head of Gander Mountain (a major outdoor retailer), hunting ethicists, outdoor writers, educators, an animal rights activist, and even rock star/hunting activist Ted Nugent. The Tuesday, August 29 session features a hands-on field day at an outdoor center.

Your perspectives are welcome at the table. As an outdoor enthusiast who follows environmental issues and cares how resources are managed, you are an important partner. Whether you hunt or not, your views and experiences would enliven the discussion. □



A NEW
ROUTE
FOR
TROUT

WITH FORESIGHT AND COOPERATION BETWEEN RESEARCHERS AND CONTRACTORS, THERE'S NO NEED FOR PROGRESS TO COME BETWEEN A BROOKIE AND A STONE FLY.

Marc Hershfield and James Morrissey

If Wisconsinites love anything more than fish, it's cars — and when a growing human population wants to get where it's going quickly and safely, you might think that little would stand in the way. Think again. If a highway project near a Washington County wildlife area is any indication, it appears we're learning a few valuable things on the road to better transportation.

At the Allenton State Wildlife Area, one of southeastern Wisconsin's last naturally-reproducing brook trout populations thrives in the shadow of a new highway interchange. Using nature as a blueprint, a team of students, researchers and highway contractors created new trout habitat, showing that cooperation, careful planning, and plenty of hard work can lead to successful shared land uses.

How to cross the creek?

To get from Milwaukee to Green Bay, most motorists follow U.S. Highway 41. Traffic congestion on this divided four-lane highway prompted the Wisconsin Department of Transportation (DOT) to begin upgrading the highway to a freeway in the late 1980s. Freeways have above-ground interchanges rather than at-grade intersections to provide autos with access to the road without impeding cross traffic.

To accommodate motorists, DOT engineers planned a diamond interchange for County Highway K in Washington County in the vicinity of

Brook trout in spawning color. One of southeastern Wisconsin's few streams with wild brook trout was sustained and improved as Highway 41 was renovated.

DON BLEGEN

Slinger. The construction would have affected the nearby Allenton State Marsh Wildlife Area and Allenton Creek, a trout stream that forms the northeastern headwaters of the Rock River. DOT and DNR consulted with University of Wisconsin-Milwaukee ichthyologist Timothy Ehlinger and botanist James Reinhertz to inventory the natural attributes of the wetland complex and trout stream before any work began on the new roadway.

With the help of graduate students and entire classes of undergraduates enrolled in introductory fish courses, the two researchers compiled valuable data on water chemistry and stream biology. The teams found eight-foot high peat domes associated with upwelling springs, a 24-acre calcareous fen, and a healthy population of the Swamp Metalmark, a threatened butterfly in the state. Seventeen fish species were found in the creek, including brook trout.

Few cold-water streams in southeastern Wisconsin support brook trout, and only three streams sustain naturally-reproducing brook trout populations. DNA testing of the fish showed that of the three streams, only Allenton Creek had a native strain of brook trout — a population that did not originate from hatchery stocking.

The researchers discovered two factors that accounted for the native brookies. Although it's located 25

miles west of Lake Michigan, this section of the Rock River marks the northeastern extreme of the Mississippi River drainage basin. The Mississippi drainage provided refuge for brook trout and other fish species during the Ice Age. Today, there are still fish species in the Rock River drainage that are not found in the Great Lakes basin. In addition, around the turn of the century, the wetland area in question had been bisected by both a railroad and a road, which made it difficult for anglers to access the upstream areas. Limited fishing pressure over the decades allowed the brook trout population to flourish.

To protect this unique wetland complex and its inhabitants during and after construction of the interchange, DOT, DNR and the UWM teams agreed on three goals: 1) relocate 1,500 feet of the trout stream farther east in the wetlands, well to the east of the roadway; 2) preserve as much of the existing wetlands as possible during this relocation; 3) create or enhance more wetlands to offset those damaged by construction. Making room for nature while providing for the needs of motorists would be no small task.

Building according to nature's plan

Nature provided the blueprints, and the researchers, highway contractors and students followed them to the letter whenever possible to restore degraded wetlands, preserve existing fragile vegetation, provide an upland buffer, and establish streambanks that would retard runoff while resisting the erosive forces of the new stream channel.

The stream was reconstructed in three distinct 500-foot sections to maintain the drop in elevation and allow crews to pay close attention to different topographic and soil conditions. Stones and gravel similar to the substrate, or material on the original stream bottom, were used to create the new stream-

bed. Sometimes the teams went nature one better; for instance, more deep pools and shallow riffles were added to the new stream to provide maximum trout spawning and feeding areas.

The initial stream relocation work began in the winter of 1993, 18 months in advance of the highway construction. Using small backhoes and Bobcats, Washington County highway crews began carving the streambed, taking care to tread lightly to minimize damage to the frozen wetland. The excavated wetland soils were stockpiled to be used later in wetland reconstruction.

Crews tackled the southernmost portion of the stream first, using the "chain saw method" to saw into the peat and widen an existing tributary to create the new stream channel. The natural vegetation was kept on one side of the stream; on the opposite side, willow, ninebark, dogwood and alder shoots were later planted along the newly cut bank. The shrub roots would spread into the bank, anchoring soil and creating the shady undercuts favored by trout.

Shortly after this effort and into the spring of 1994, the crews began relocating the mid-section of the stream in a dense alder thicket with many springs. A narrow, meandering swath of vegetation was cleared to save less-common species like tamarack. Crews used a Ditchwitch trencher to cut the frozen peat into 4'x4' cubes. These "peatsicles" were placed in a storage area while the new stream banks were shaped. Once the channel was formed, the UWM students positioned habitat structures (like half logs, current deflectors and wing dams) on the streambed. The peatsicles were placed on top of the structures and adjacent to the stream channel. The peatsicles served two purposes: They provided a viable, natural seed source for native vegetation, and they allowed crews to make narrow, steep-sided banks, which create shade for habitat and help keep water velocity strong.

Through the summer and fall of 1994, both sections of the reconstructed stream channel grew lush vegeta-

Ironically a railroad bisecting this wetland kept reaches of Allenton Creek inaccessible to anglers for years. Before Highway 41 was renovated a DNR, DOT and university team planned improvements for the unique trout stream adjoining the highway project.



DNR PHOTO



(above) Excavations work was done during winter of 1993 to minimize damage to the wetland. Three stream reaches were relocated to provide spawning, growing and resting habitat for each phase of the brook trout's life cycle.

(below) The "pillow" section built up streambanks with peat-stuffed burlap tubes. Cuttings of woody shrubs were planted in the tubes to create give the streambank vegetation time to fill in.



Crews used chain saws to cut through peat and widen the tributary channels on the southern reaches of Allenton Creek.

tion and stabilized the banks. Road construction was about to begin. As a precautionary measure, Dr. Ehlinger placed several male and female brook trout in the safety of the UWM laboratory, in case of any unforeseen consequences of construction.

Timing is everything

Road building proceeded mindful of natural cycles. To accommodate the trout spawning period, no construction activity was scheduled in the existing stream from early October to late November. Roadwork in the wetland was done in the winter to minimize damage to plant roots and the peat layer. Erosion and siltation were carefully monitored upstream, within the construction zone, and downstream to protect developing brook trout eggs and larvae.

Before a foot of concrete was poured, the highway contractor excavated a 1.5-acre, 15-foot deep sediment pond to collect the initial flush of water that would occur when the existing stream was routed into the new channel. The pond also served to capture agricultural runoff later on. The highway design incorporated several other environmentally sound elements, including additional settling ponds and deep cattail marshes to hold stormwater runoff and snow melt, and box culverts constructed in a fish-friendly manner — easy to navigate, even during low flow, sunlit, and containing resting areas behind the rock baffles.

DNR PHOTO

DNR PHOTO

DNR PHOTO



The vegetation that has already grown in this "pillow" section is providing lush habitat and cover for adult fish. Aquatic insect life in the new creek sections is abundant.

The final, northernmost portion of the stream was relocated through an upland area during interchange construction. It proved to be the most challenging for restoration and highway construction crews alike since water would have to be shunted into this new channel before the banks could naturally revegetate. To build the new streambanks, crews used "pillows" of peat-stuffed burlap tubes, stacking the tubes in layers to create the proper slope. Several hundred cuttings of woody shrubs were inserted into the peat pillows. The full flow of water

was scheduled for release in the new streambed from fall 1993 through spring 1994, as young-of-year brook trout in the old stream reached sufficient size to survive the move to the new channel.

In the summer of 1994, water flow was slowly and carefully redirected into the new stream channel to cause minimal changes in aquatic life, to better control sedimentation and scouring from the new channels, and to coincide with highway construction. That was the theory, anyway. In fact, weather changed the construction schedule and

the process for naturalizing the stream. As spring moved toward summer, both projects stabilized and were successful.

Improvements for trout and traffic

Today, the interchange at County Highway K is complete and the traffic flows more efficiently and safely along U.S. 41. Whether the trout will find their new thoroughfare as congenial has yet to be determined.

UWM researchers and students will monitor the stream during the next three years to see how relocation has affected the trout population. Brook trout first spawn when they are two years old, so the success of the relocation won't be gauged until the 1995 spring hatch matures in 1997. The outlook is promising: invertebrates and fish species already are more diverse and abundant in the new stream than in the old channel. The stream has five times more spawning redds (gravelly areas where trout reproduce) than the old stream.

The three distinct sections of the new stream will be managed to provide habitat for trout at all stages of their life cycle. The upper chain saw section has large amounts of gravel for spawning, and will offer brushy structure for juveniles. The middle peatsicle section will provide undercut banks, pools, and refuges from the current for yearlings. The lower pillow section has deeper pool areas and will be managed for adult brook trout. If the relocation is successful, the new stream may serve as a genetic reserve, providing well-adapted brood stock to re-establish brook trout populations throughout southeastern Wisconsin.

When a transportation corridor crossed an environmental corridor, the result could have been devastating to the creatures without wheels. With foresight and cooperative effort, the traffic for all parties is flowing well. □

Marc Hershfield is environmental coordinator for the Department of Transportation's Superior office. James Morrissey is environmental coordinator for DNR's eight-county Southeastern District stationed in Milwaukee.

Continued from page 2

Since the woodpeckers were still excavating and cleaning out the cavity, I called the power company. The supervisor questioned where the hole was located. The 60- to 80-foot supports are built like a capital "H," except the cross piece is nearer the top. The very top section is braced by X-shaped cross members. From our conversation, I got the feeling that it was better that the hole was below the cross piece. Still, I felt like a traitor to the downtrodden when I hung up the phone.

I expected to see a utility truck pull into my driveway the next day, but it didn't happen. As each day passed the probability of disturbing eggs and incubation increased. Finally, after three weeks, a utility truck stopped by the house.

"I'm here to look at a hole made by woodpeckers," he said.

I explained that had he come right away, he could have covered the hole or repaired it, but now the birds were sitting on eggs. Sensing my concern, the worker drove down to the pole, looked at the hole, made notes on a clipboard and then drove away.

At the time, I was unaware that birds found utility poles attractive for nest sites. WPSC replaces five-10 poles each year due to woodpecker damage.

I could see the woodpeckers' nest cavity from my house window. I watched through binoculars as the birds incubated and then fed their high-powered, high-towered "charges."

By late June, my occasional walk included a pass by the "nesting pole." For about a week I had observed movement in the cavity from a distance. Suddenly, I heard a loud squawk as I walked by. I whirled around and saw one of the young birds fledge. Debris from the nest plummeted to the ground as the young bird, seemingly in slow motion, beat it to a maple tree about 75 feet from the pole. The noise is not something I will soon forget. A rapid clamor from both parents, the remaining chick and

the fledgling sounded like a chorus of screams at the finish line of a close race.

About a month later when I walked out to the chicken yard I heard the kik-kik-kikkik-kik-kik call of a pileated somewhere amid the thick branches of an old box elder in our yard. Then I heard the rush of wind as the magnificent bird flew directly overhead on its way to some bigger trees. I don't know if the maneuver was intentional, but it gave me a warm feeling that the woodpeckers had won their "power struggle" for a nest site. □

John J. Mutter, Jr. writes from Shawano, Wis. where he and his wife tend to an 80-acre farmstead, a mixed flock of poultry and one small terrier dog.

Readers Write

CAUGHT BY THE NORTHWOODS

While sending in another three-year subscription to this wonderful and most informative magazine, I was thinking about what brought me to this point since I was not born or raised in Wisconsin.

It started with a one-week trip from Indianapolis to Squirrel Lake in 1934. I was 12. Though the family never went back, I never forgot the country. Several years later my grandmother took me by train from Indianapolis to Chicago and then on up to Conover, Wis. on what was later known as "The Fisherman's Special." We stayed at Larson's Resort on Upper Buckatabon Lake.

After World War II, my neighbor, three other service buddies and I went back to Larson's Resort in 1946. In '49, my wife and our 18-month-old daughter went back to Buckatabon. Three years and 45 years later we still vacation at "Buck" without missing a year.

This last year, my neighbor and I both purchased homes on lakes in the Eagle River and Three Lakes area. Pretty unusual that our two families have enjoyed the same area for 70+ years. We certainly hope this part of Wisconsin never will be changed.

*Harold J. Weinmann
Indianapolis, Ind.*

We'll be covering the changing nature of Wisconsin's Northwoods as the DNR's Northern Initiatives Task Force describes its community activities to preserve the region's resources, traditions and character.

FALL FANS

I truly believe Wisconsin is the most beautiful state in our country. There is so much for young and old people to enjoy and nur-

ture, especially in the fall. For instance, my wife took three lady friends from Kansas up to Door County and they absolutely loved it. They are still writing us and making plans to bring their husbands up for a return visit next year.

*Gordon Kjenvet
Mondovi, Wis.*

NATIVE FISH HOBBYISTS

Readers interested in raising, photographing and keeping native fish may like to learn about the North American Native Fish Association. We publish a newsletter, and we're developing a program with professionals to propagate endangered fish species. The group has a diverse mix of professionals, outdoor enthusiasts, aquarists and naturalists. We are all volunteers and are always looking for more interested members.

*Robert Rice, 10010 Grandview,
Overland Park, KS 66212*

Readers can also look through their back issues for our May/June 1987 article, "Try stocking your aquarium with natives."

FAMILIAR FARM POND

Looking at the Table of Contents for your February story about the Conservation Reserve Program, I noticed a farm picture that looked very familiar. Was this taken west of the Goose Pond in Arlington?

It brought back many memories as we lived there 15 years and enjoyed watching the geese, ducks and even swans every spring.

*Arlette Schultz
Windsor, Wis.*

It sure was that same farm.

Readers Write

PELICAN BRIEF

I was fishing by the Prairie du Sac Dam a few years ago in October when I had a brief encounter with a pelican. It came up and took live minnows out of my hand. Are they native? Why would one be so tame that it would take minnows out of my hand?

Jim Carlson
McHenry, Ill.

White Pelicans do follow a flyway from their southern wintering grounds to nesting areas that come as far east as western Ontario. They are not uncommon along the Mississippi River, so your sighting is not unusual. The tameness this bird exhibited is out of the ordinary. Pelicans will let humans approach within a few feet, apparently even closer if you are in a boat.

IDEAS FOR CLEAN AIR

Listen here all you ungrateful people. Have you been riding your bike lately, or have you been riding in cars? If you listen to me you could be living in a nicer place. Here are my ideas to stop air pollution: Ride bikes if you are going a short distance. If you are going a long way, take public transportation. You can also carpool.

If you want a better world, do all these things often. You know, this is the only world you're ever going to get.

Erin Murphy
Age 9
Shepherdstown School
Mechanicsburg, Penn.

A MILKWEED TALE

A few years back a lady who lived across the street from us noticed a milkweed plant growing in the crack between her blacktop driveway and garage. She is 80+ years of age and she

just loved watching that plant. Two years ago someone chopped it off and our neighbor was angry to say the least. Last year it came up bigger than ever. To our surprise three monarch butterflies landed on it, laid some eggs and chewed the leaves to bits. Watching that milkweed was the highlight of our summer. We saw the big yellow and black caterpillars and the little green cocoons (chrysalides) hanging on a thread. We never did see any of the little monarchs emerging. This year I planted a milkweed near my garage too.

Ruth Frauenheim
Antigo, Wis. *

NATURE CHRONICLER

The April issue was, as usual, beautiful and full of interesting articles. In particular I appreciated Gregory Scott's article on phenology.

He and other readers might like to know about Frank Craighead's new book, *FOR EVERYTHING THERE IS A SEASON: The Sequence of Natural Events in the Grand Teton-Yellowstone Area*. It correlates significant happenings in the insect, plant, bird, fish and mammal communities. This book and Scott's article inspired me to get out a notebook and follow their examples. In this period of erratic weather patterns, it may be interesting to have such records in the future.

Ruth Y. Schmitz
Middleton, Wis.

QUADRILLIUM?

As a member of the lily family, Trillium (*Trillium grandiflorum*) typically has floral and plant parts in threes or multiples of three — three leaves, three petals, and so forth. This plant



Four-petaled trillium was likely caused by disease.

clearly has four parts.

In more than 37 years as a forester, I've only seen four such plants, all in Rusk County and all in the last five years. I carefully marked the location of three of these plants, but there were no signs that any had survived the winter when I returned the following year.

David A. Lee
Ladysmith, Wis.

It's unusual to see plants with different number of leaves or petals from the norm, but botanists tell us that trillium with two or four parts are not distinct species. Such "morphological variation" is often caused by fungal infections on a particular stalk. This may explain why all the stalks of a given plant do not show the same variation, why the results vary from year to year, and why some of the plants you saw did not survive through winter. They may have succumbed to disease.

WHERE ARE HOO?

I liked the article about saw-whet owls. It reminded me of an owl in our town. We never see it, but we hear it. I wonder where the hoo-hoo is coming from. It seems so close but when I look in the trees searching for an owl looking down at me, I still fail to find it.

Stacey Harlman
Florence, Wis.

NATURE "USE"

I was furious to read a letter in the April issue asking about "uses" for the bountiful Queen Anne's Lace. Simply because something is abundant does not mean we should try to find a "good use" for it. Not everything was put on this earth to serve people. The plant is so beautiful decorating the roadsides and fields, and it's such a change from litter that you might otherwise see. Leave Queen Anne's Lace alone!

Karen Peeters
Sturgeon Bay, Wis.

Neither we nor our previous writer disagree with you. She just wondered if others had researched potential cultivation and products one might reap from raising wild carrot.

ARTICLE IDEAS

My Mom is a subscriber. Whenever she gets a new issue of your magazine, I always read it because the articles are like a newspaper for nature, some really inform you about what's going on in the natural world. Who comes up with ideas for your articles? Will my letter be in the back with the others?

Thomas F. Church
Land O' Lakes, Wis.

Thomas, we're a lot like you. We're curious. We see both odd events and everyday activities in nature and wonder why they happen. Some of our ideas come by following issues that Wisconsin people are facing. Some come from manuscripts that writers want to share with our readers. Others come from the questions that you and other readers pose, so keep those letters coming.

WISCONSIN TRAVELER

Art for all

Certainly it is less...er, costly to grow your own sunflowers rather than purchase those painted by Van Gogh. Come the gray mornings of November, however, a work of art bursting with the memory of a golden August afternoon will be gratefully cherished, price tag be hanged! That's the beauty of art: It imitates life, right down to the pain of writing a check with more zeros than the national debt.

The good news is that it doesn't take a million-dollar masterwork to satisfy the desire to view, hold and ponder another person's artistic interpretation of the world. Art and craft fairs abound in Wisconsin, especially in late summer and early autumn, and each fair offers original artwork and handcrafted goods for all tastes and budgets.

Some fairs held in conjunction with larger events draw sizeable crowds. Expect to see upwards of 12,000 people converge on Boulder Junction's Main Street for the **39th Annual Musky Jamboree** on Sunday,

August 13; the day-long festival features an antique auto show, carnival games, live music, and a free taste of musky in addition to the work of 150 painters, sculptors, potters, weavers, glassblowers, photographers, calligraphers and jewelers. In contrast, only 25 artists will display their work at Janesville's **4th Annual Art by the Tracks**, also on August 13.



Held at the railroad tracks near the intersection of Highways 51 and 11, this fair promises ample opportunity to chat at length with the artists whose work you find wholly appealing or totally reprehensible.

Raise browsing, ambling, and chin-in-hand contemplation to a fine art yourself at a Wisconsin art fair soon. The following fairs are worthy of your artistic appreciation, and there are many more your TRAVELER could not list for fear of consuming every page in *Wisconsin Natural*

Resources. For your own copy of the *Wisconsin Art & Craft Fairs* Directory, call the Division of Tourism at 1-800-432-TRIP, 24 hours a day, seven days a week.

39th Annual Musky Jamboree, Boulder Junction, Vilas County. Sunday, August 13. 8 a.m.–4 p.m. Free. (715) 385-2400.

4th Annual Art by the Tracks, Janesville, Rock County. Sunday, August 13. 10 a.m.–4:30 p.m. Free. (608) 754-3358.

Oconomowoc Festival of the Arts, Fowler Park, Oconomowoc, Waukesha County. Saturday and Sunday, August 19–20. 10 a.m.–5 p.m. Free. (414) 567-1243. Enjoy live music, dance and theatrical performances on three stages. 125 artists present their work for your consideration.

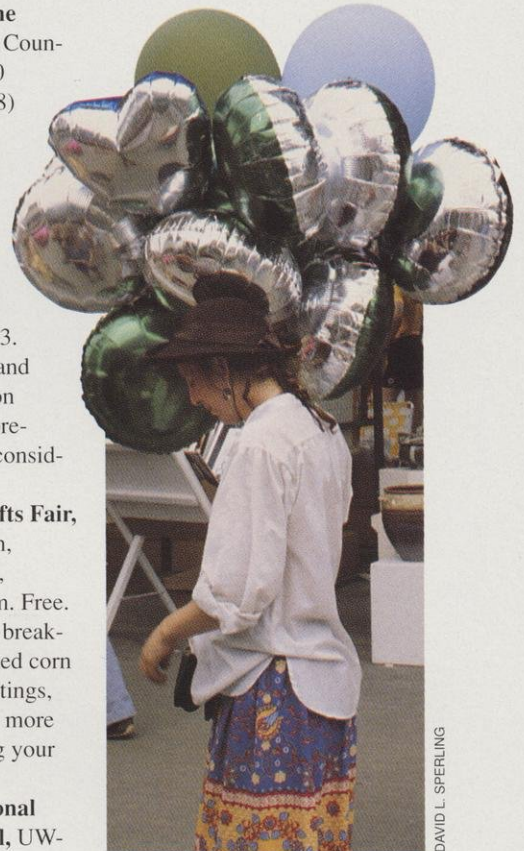
Kiwanis Arts & Crafts Fair, Civic Park, New Holstein, Calumet County. Sunday, August 20. 10 a.m.–4 p.m. Free. (414) 898-4271. Serving breakfast in the morning, roasted corn in the afternoon and paintings, photographs, pottery and more from 40 exhibitors. Bring your appetite!

Great River Traditional Music & Crafts Festival, UW-La Crosse Campus, La Crosse, La Crosse County. Saturday and Sunday, August 26–27. 10 a.m.–6 p.m. \$4. (608) 785-1433. You won't find photography or abstract acrylic paintings here — this festival is devoted strictly to handmade, hand-hewn folk crafts. As you stroll the grounds in search of basketry, textiles, woodcraft and pottery, you'll be serenaded by fiddlers and pickers with the pluck to keep folk music thriving in Wisconsin.

Art World '95, Marathon Park, Wausau, Marathon County. Saturday and Sunday, September 9–10. 9 a.m.–6 p.m. (Sat.); 9 a.m.–5 p.m. (Sun.). Free. (715) 675-6201. Wear sturdy shoes — this absolutely "artrageous" weekend features more than 400

artists and craftspeople from around the U.S. Bigger than the Louvre! Continuous entertainment and plenty of food will be available to fortify weary art stalkers.

Art in the Barn, W5121 County Highway N, Owen, Clark County. Friday – Sunday, September 15–17. 10 a.m.–5 p.m.



DAVID L. SPERLING

Festive and fun!

(715) 229-2245. Thirty artisans demonstrate their craft skills and sell their wares in a restored barn. Take time to talk with the craftspeople about their work — wood carvers in particular will be on hand to discuss techniques and tools. Amish women from the area host a bake sale at the barn on Friday and Saturday.

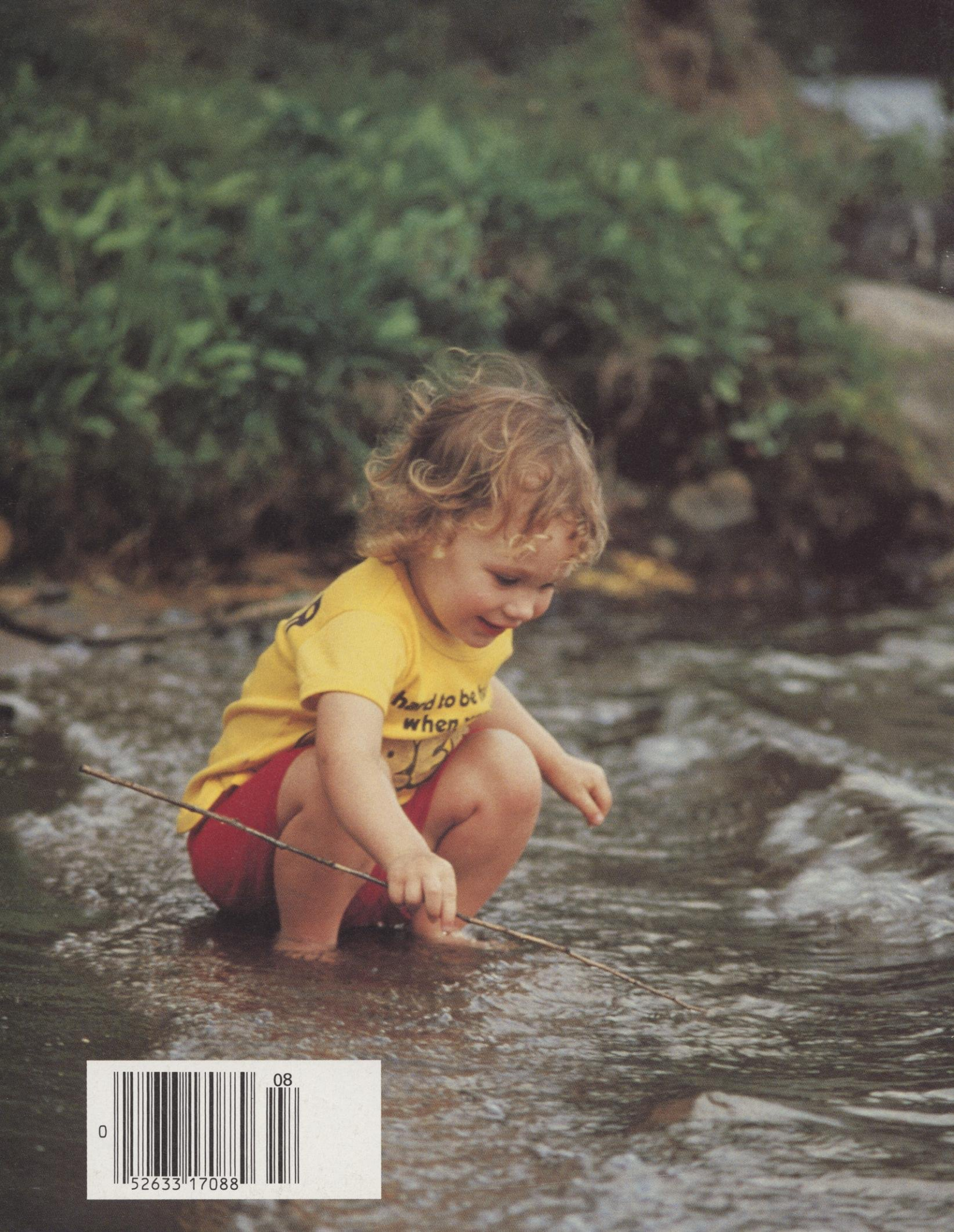
Keep an eye open for art fairs this summer and fall.



DAVID L. SPERLING

Call before you go! Dates and times may change.





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