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WISCONSIN NATURAL RESOURCES

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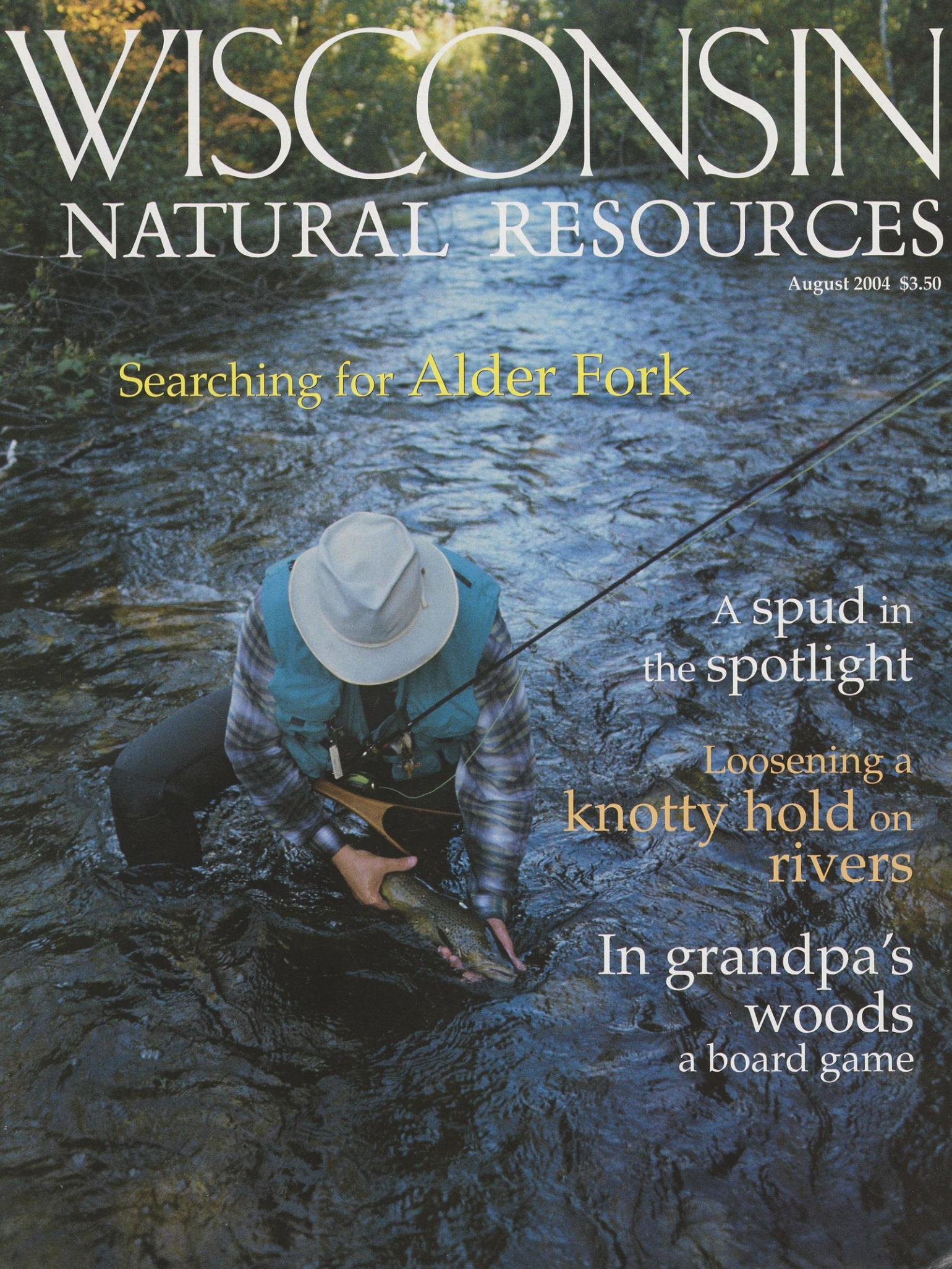

Searching for Alder Fork

A spud in the spotlight

Loosening a knotty hold on rivers

In grandpa's woods a board game

Red in the yellow month

Cardinal flowers flag down hummers in the heat of summer.

Anita Carpenter

August is the yellow month. Meadows are full of flowering goldenrod. Yellow armies of insects are on the move as soldier beetles climb those goldenrod and ambush bugs hide in the blossoms. Lemony yellow sulphur butterflies congregate at moist areas to sip minerals before flitting about to find a mate. Yellow goldfinches, the last birds to nest, are still intent on parenting responsibilities.

Grasses too are turning yellow as their yearly cycle completes. Crops are starting to take on the yellowish hues of maturity. The first yellow leaves on poplars and willow trees signal autumn's approach.

August also brings purples and reds, but I must seek out these bursts of color. New England asters with purple rays and yellow centers compete for attention in the fields. Blue-purple bottle gentian snuggle among the taller plants in wet spots and prairies. Red is less common, but in damp meadows, wet open woods and along streambanks, the glorious red of the cardinal flower clamors for our attention.

Cardinal flower prepares all year for its moment in the August sun. The perennial plant overwinters as a small cluster of rosette leaves growing near the ground. In late spring, a single flower stalk grows from the rosette eventually reaching three to four feet high. The deep red flowers begin to open in July and reach their peak in August. The stalk continues to grow, producing more flowers along its length.

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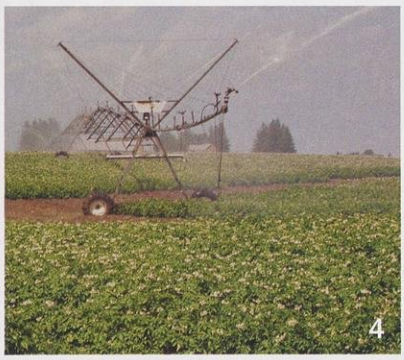

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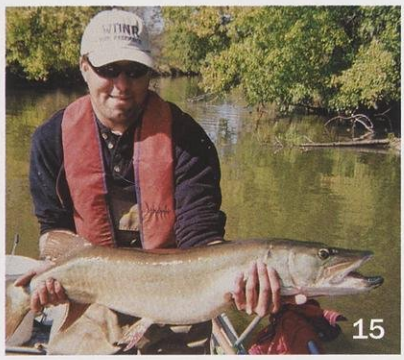
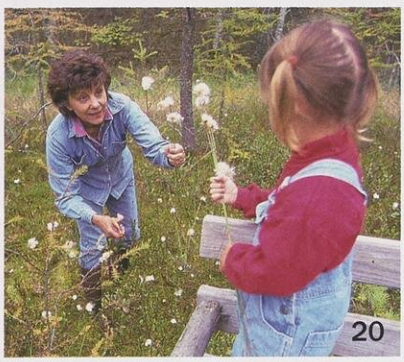


MATT CATALANO



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BACK COVER: The Castle Mounds State Natural Area in the Black River State Forest. *(inset)* The Castle Mounds butte. Celebrate the "Year of Wisconsin Forestry" at www.wisconsinforestry.org

(BOTH PHOTOS) ROBERT QUEEN, Madison, Wis.

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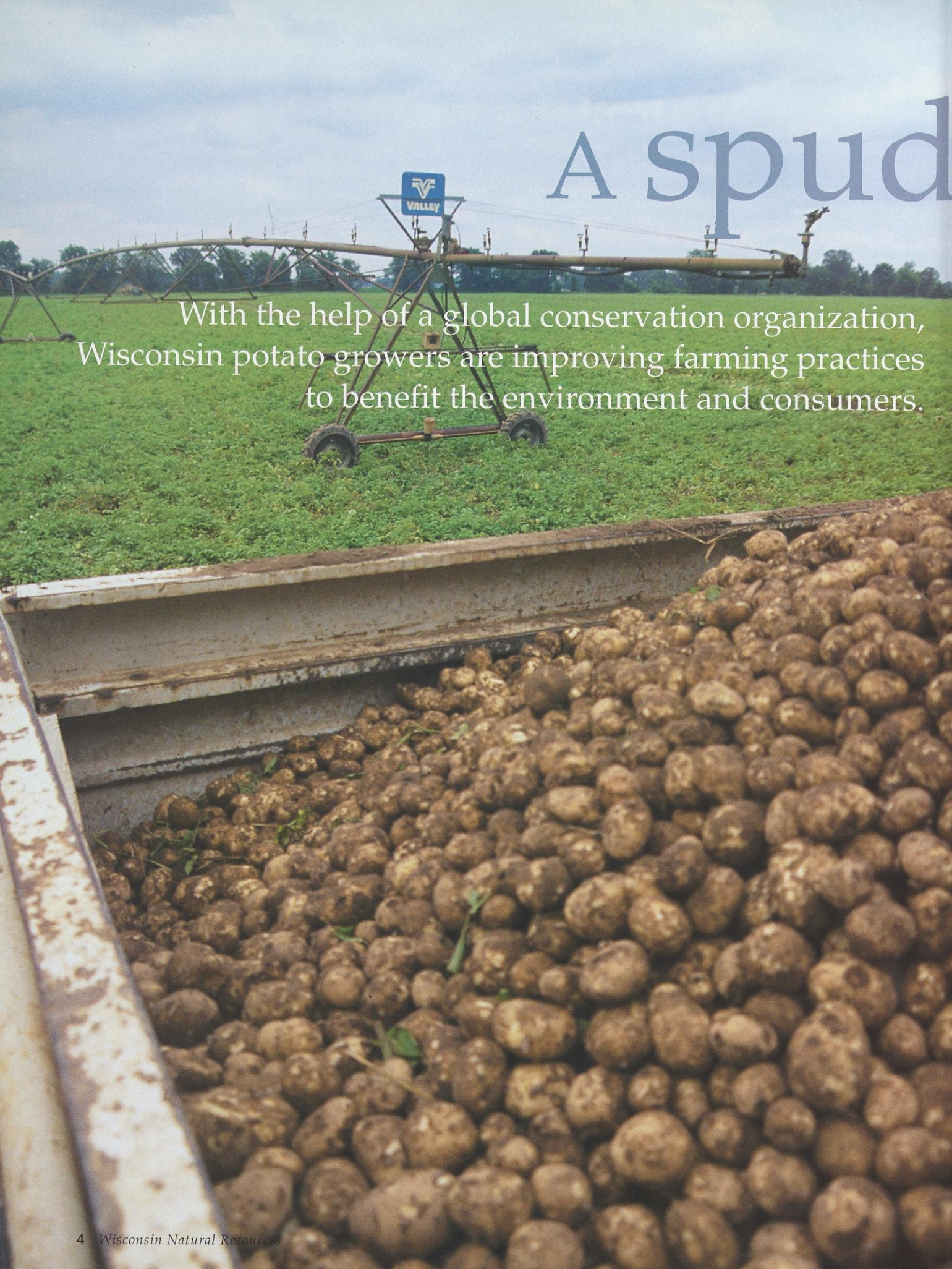


A spud

With the help of a global conservation organization, Wisconsin potato growers are improving farming practices to benefit the environment and consumers.

in the spotlight

Sara Briles

Consider the humble spud. Could there be any way to improve upon this most valued of tubers, America's favorite vegetable and a mainstay of Wisconsin agriculture?

There is, and the method doesn't involve genetic modification. Instead, change for the better is occurring *outside* the potato plant — in the way it is planted, tended and harvested by farmers. The result is the "eco-potato."

The eco-potato project sprouted in 1996, when the World Wildlife Fund and the Wisconsin Potato and Vegetable Growers Association sought to reduce pesticide use and encourage farming practices in harmony with the natural environment. Today the eco-potato partnership also includes the University of Wisconsin-Madison and the International Crane Foundation. Eco-potatoes have been sold since 2001 under a new brand called *Healthy Grown*. For farmers, consumers, wildlife and watersheds, the Healthy Grown brand is one hot potato indeed.

The whole-farm approach

Eco-potato farmers view their farms the way ecologists evaluate ecosystems. Rather than focus only on the productivity of a single field or crop, the eco-farmer aims to improve soil health, biological diversity, water use and quality, and energy flows throughout the entire farm. This "whole-farm" approach also recognizes that an individual farm is part of a larger ecosystem encompassing the surrounding rural community.

"Farmers want to do the right thing on their farms but we lack the capacity to respond fully to this desire," says Jeb Barzen, director of field ecology at the International Crane Foundation. "The eco-potato partnership is a serious effort to provide farmers with the vision and practical tools they need to farm in a way that restores the environment."

For instance, eco-potato partners have learned that nutrient leaching can be reduced if grass buffers, waterways and contour strips are planted with deep-rooted prairie plant species. Growers employing native insects to battle potato pests know they must provide ample and healthy habitat for these beneficial fighters, which further enriches the farm's diversity of plants and animals. By farming with the land rather than against it, and by using nature's tools to help manage their fields, eco-potato growers are acting locally to solve human and environmental problems of long-term and large-scale proportions.

(left) Eco-potato growers use a mix of integrated pest management, soil conservation and water conservation to raise a crop. It's not organic farming, but it's easier on the soil and wildlife than standard practices.
(right) The Colorado potato beetle remains the crop's #1 pest. Nonchemical controls aim to attack the beetle at vulnerable points of its life cycle. Rotating crops to delay infestations and treating crop edges in spring and fall can effectively reduce pest numbers.

A pesticide prompts change

Steve Diercks and his son are fourth- and fifth-generation farmers in Coloma whose ancestors came to the Antigo area from Germany and Ireland to raise potatoes. Their ancestors grew potatoes without using synthetic pesticides or fertilizers; the Diercks strive to use a minimum of chemical inputs to raise 700 to 800 acres of potatoes each year.

The Central Sands region, where Diercks' farm is located, is a six-county area in the middle of Wisconsin comprising about 13,000 square miles. The region's sandy, shallow soils — once the bottom of a large glacial lake — drain rapidly, providing an ideal dry environment for potato growing.

The region is home to most of Wisconsin's other 140 potato growers, and it is where the eco-potato partnership took root. "The impetus for forming the partnership was a groundwater scare in the 1980s," says Deana Sexson, eco-potato partnership coordinator based in the Department of Horticulture at the University of Wisconsin-Madison. "Aldicarb, a chemical pesticide sold under

the trade name Temik, was found in the groundwater of areas where potatoes are produced."

Aldicarb had leached into streams, wetlands and drinking water through the region's sandy soils and shallow water table. Research indicated the pesticide disturbed the hormones of wildlife. Diercks realized that sandhill cranes and other wildlife that frequently visited his fields could be affected by aldicarb and other pesticides found in the wetlands.

Although aldicarb provided the growers with a relatively easy way to control major potato pests, state officials banned its use in 1986 where it had contributed to groundwater contamination. "I did not want to handle these chemicals, nor did I want family members and the crew to be exposed to them if it could be avoided," Diercks recalls.

The Wisconsin potato growers went to the University of Wisconsin for help in developing farming practices to reduce the need for chemical pesticides and, at the same time, be economically feasible for the grower.

About that time the World Wildlife Fund was looking for an agriculture group to work with on reducing pesticide use. Migratory birds like endangered whooping cranes use agricultural lands for nesting and feeding, and the organization hoped to decrease the birds' exposure to toxic chemicals.

The eco-potato partnership developed statewide standards for the Wisconsin potato industry. Wisconsin potato growers reduced pesticide use by 37 percent between 1997 and 1999, by some 500,000 pounds, but the partnership and the growers are aiming for further reductions.

In an effort to determine more precisely the impacts of the pesticide reductions and other field management techniques on the environment, Sexson explains, the eco-potato partnership is conducting research projects to test for changes in water quality, insect populations, including beneficial insects, and other ecological changes on the potato farms. Results of the studies are expected by fall 2004.

The eco-potato partnership understands the need for flexibility in standards. Rather than a one-size-fits-all approach, growers are encouraged to follow guidelines developed by the partnership to design management plans that address the particular circumstances of each farm. Baseline levels for reducing pesticide use are required of all participating growers. Within that framework, growers can select the practices appropriate for the natural environment of the individual farm and the grower's production goals.

Father and son Steve and Andy Diercks of Coloma are among 11 of Wisconsin's 140 potato growers who are early innovators in raising spuds for the fresh market under the Healthy Grown standards.

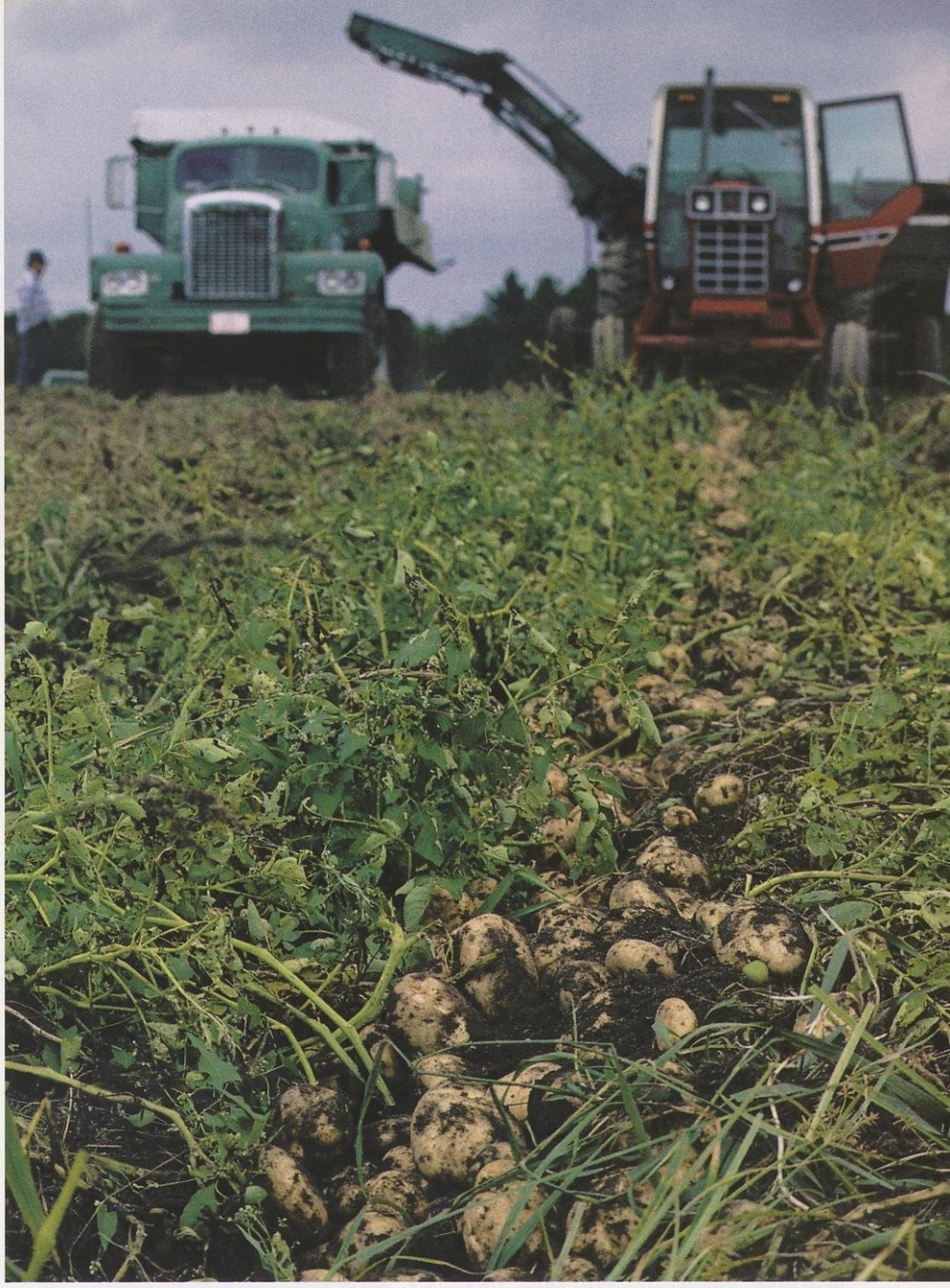
Check the label

The idea of marketing environmentally grown produce identified with the Healthy Grown eco-label came about in 2000. Although the World Wildlife Fund is "not your usual party for an agriculture program," Diercks says the organization gave the whole project credibility by agreeing to put their panda logo on the potato bags. "Credibility and food safety are important to the consumer and to the success of the eco-potato project," he says.

The partnership wrote additional, stricter standards for producing potatoes to be sold under the Healthy Grown brand. Growers must further reduce pesticide use and increase the use of biological pest management practices. Those practices include encouraging beneficial insect predators, rotating crops, maintaining adequate distances between fields, sanitizing equipment, removing infected debris from fields,

(BELOW) WP&VGA *(RIGHT)* INTERNATIONAL CRANE FOUNDATION

The World Wildlife Fund and the International Crane Foundation joined this partnership to reduce chemical pesticide use where migratory birds, like sandhill cranes, nest and feed.



MICHAEL WEIMER

Healthy Grown practices improve soil and wildlife habitat while reducing potato pests by rotating crops, building soil, planting pest-resistant varieties, monitoring for pests, and encouraging beneficial insects that prey on pest species.

intensively monitoring fields for pests, planting pest-resistant cultivars, restoring habitat for beneficial insects, and improving the biological diversity of the soil. Synthetic chemicals are used only as a last resort and, even then, only chemicals low in environmental toxicity are permitted.

In return for their voluntary participation, the growers can sell their potatoes in bags carrying the Healthy Grown brand and the World Wildlife Fund panda logo.

Protected Harvest, an independent nonprofit organization, was established by the partnership to verify that each participating grower meets the strict standards for producing Healthy Grown potatoes. Mike Carter, executive director of the Wisconsin Potato and Vegetable Growers Association, says that although the eco-potato partnership created Protected Harvest, the organization's board is now independent and beyond reproach. "No one with Protected Harvest has a vested interest in Healthy Grown, the partnership or with any of its members," Carter says. "The certification of the potatoes by an independent third party is critical to the integrity of the brand and consumer confidence."

The Protected Harvest board of directors is a mix of environmental organizations, researchers and consumer advocates, including representatives from the World Wildlife Fund, Natural Resources Defense Council and the National Cooperative Defense Council. Protected Harvest is applying the Wisconsin eco-potato model to crops in other states by developing standards for specific crops grown under different regional climates and conditions.

Wisconsin is the third largest potato producing state in the country, with

80,000 acres planted, including potatoes processed into products like French fries and unprocessed spuds for the fresh market. To date, about seven percent of all Wisconsin potato growers participate in the Healthy Grown brand program. According to Carter, it makes sense for Wisconsin's farmers to join the program and capture some of the market for "greener" products.

Today, the Healthy Grown brand applies only to potatoes grown for the fresh market. In 2003, potatoes sold under the brand were grown on 4,000 to 5,000 acres of the 35,000 acres of fresh market potatoes in Wisconsin by 11 growers who met the certification standards. While more growers actually participated in the Healthy Grown program, only potatoes from growers who had met all of the requirements by the end of the season were eligible for certification.

A fair market price?

During 2001 and 2002, growers certified under the Healthy Grown brand used 54 percent less toxic chemicals than the industry norm, according to Sexson. However, production costs increased about 50 cents per 100 pounds of potatoes due to the extra time required to monitor field conditions and the higher costs for newer, less toxic pesticides. Will the growers be able to get a higher price for their potatoes to cover the increased costs of production?

Angela Hemauer, director of promotions and consumer education for the Wisconsin Potato and Vegetable Growers Association, says shelf space in grocery stores is limited, and many retailers feel they do not want to risk replacing a fresh potato brand familiar to consumers with a new product. "At the same time, our consumer research showed us that consumers are looking for and willing to pay more for environmentally grown produce such as Healthy Grown potatoes," says Hemauer. A marketing plan for the 2004 potato harvest will entice consumers with the slogan, "Wisconsin Healthy Grown potatoes: Good for you, better for the environment."

Healthy Grown brand potatoes can be found in supermarket chains, such as Copps Food, Cub Foods and Jubilee Food Stores throughout Wisconsin, as well as at smaller independent grocers. The growers' association is looking for new markets both within and outside the state. Some Cub stores in Illinois and select stores in Minnesota are now selling Healthy Grown potatoes. "The goal is to have Wisconsin Healthy Grown potatoes readily available in the greater Chicago and Minneapolis markets by 2007," Hemauer says.

Growers willing to meet the requirements who receive the Healthy Grown label hope consumers will support their effort. Diercks grows 300 acres of potatoes for the Healthy Grown brand.

"It is a much more management intensive system," he says. "You need more people with more knowledge and it is a more balanced system of field management. It is more expensive from an out-of-pocket perspective to farm this way." But Diercks feels the extra work is worth the effort and cost: "The greatest benefit is that researchers expect less resistance will be developed by insects through the use of biological intensive pest management and the newer 'softer' chemicals than was the case with the harder chemicals like aldicarb."

In the end, what matters to Diercks is that making this change "is the right thing to do," for the environment and for agriculture. Diercks has, over the years, enjoyed watching the sandhill cranes walk the rows of the potato fields. The cranes "play with the potatoes" and "just roll them around with their beaks," Diercks recalls with humor.

Larry Alsum, who grows approximately 1,300 acres of Healthy Grown potatoes in the area between Spring Green and Arena, says farmers are the "ultimate stewards of the land and it is our responsibility to be good stewards." Yet as much as farmers want to be good stewards, they also must make a living off the land.

For Alsum, the Healthy Grown program has been an enjoyable and beneficial learning experience. By adopting the program's standards, Alsum says he has learned how to improve his farming practices to control insects and weeds through the use of less toxic pesticides and an array of biological pest and field management techniques.

Alsum sells his Healthy Grown potatoes directly to Certco, Inc., a wholesale cooperative that supplies 120 independent grocery stores in Wisconsin, Illinois, Iowa and Minnesota.

So far, Alsum has been able to absorb the additional costs without harming his bottom line. However, the Healthy Grown program anticipates adopting additional standards to further improve the environment and Alsum feels these could add significantly to his production costs.

But he recognizes an important

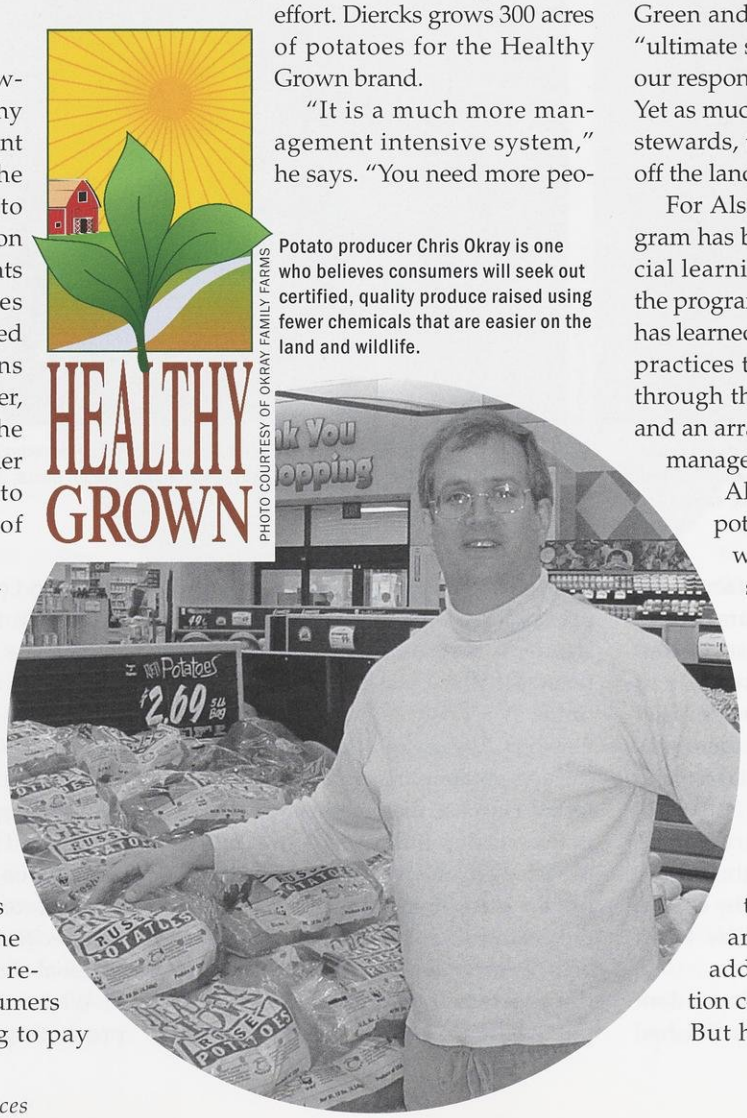


PHOTO COURTESY OF OKRAY FAMILY FARMS

Potato producer Chris Okray is one who believes consumers will seek out certified, quality produce raised using fewer chemicals that are easier on the land and wildlife.

WP&VGA

WP&VGA

(top) **Healthy Grown practices are currently used on about 5,000 acres of the 35,000 acres of potatoes grown for fresh produce markets.**
(above) **Potatoes in bloom. Cultivation practices can reduce the need for chemical pesticides and stymie pest insect populations.**

Learn more

Visit www.healthygrown.com to review certification standards for Wisconsin's Healthy Grown brand, and for crops in other states.

Go to http://ipcm.wisc.edu/bioipm/ for more specifics on the policies established by the eco-potato project and the Healthy Grown program.

goal of the Healthy Grown program is to return an economic benefit to the participating growers. "If the extra costs of producing Healthy Grown potatoes are not met with increased revenues, then growers will not stay with the program," Alsum observes. The long-term goal is for growers to receive enough of a premium for their Healthy Grown brand potatoes to encourage them to stay with the program.

Eyes on the future

Reducing pesticide use is not the only goal of the Healthy Grown program. In 2005 the program plans to embrace strategies for improving soil and water quality, as well as efforts to restore non-agricultural landscapes. "Whole-farm" ecosystem management plans, control of invasive species, and restoration of native plant communities on unproductive land owned by the growers will be part of future Healthy Grown initiatives.

Ted Anchor, a UW restoration ecologist for the eco-potato partnership, manages five demonstration farms to evaluate management practices that are considered for the Healthy Grown standards. All the demonstration farms are owned by growers participating in the Healthy Grown program.

One goal on each farm is restoring parcels of plant communities that existed prior to settlement. Among the five farms, over 80 species of prairie plants are being grown on 33 acres. Prescribed burns are planned for spring and fall on 200 acres within the demonstration sites. A second goal is limiting the spread of invasive plant species like spotted knapweed and reed canary grass as the land is restored. A third aim is developing diverse wildlife habitat on the farms and surrounding lands. Most of the demonstration farms adjoin conservation lands managed by DNR and other conservation organizations. The Healthy Grown program would like to include standards so farmlands are managed to keep land practices compatible with those on surrounding conservation lands. If farmers can restore enough natural habitat for beneficial insects, their fields benefit from smaller pest populations, air and water quality will improve and wildlife habitat will increase.

The potato growers and the members of the partnership believe the Healthy Grown program represents a shift that will eventually occur throughout conventional agriculture. Their effort has been recognized by the U.S. Department of Agriculture, which bestowed its 2003 Secretary's Honor Award for maintaining and enhancing the nation's natural resources and environment on the eco-potato project and the Healthy Grown program. Together, these two initiatives provide a viable model for how farmers can take direct responsibility for the health of the land and its resources.

Sara Briles is a freelance writer from Madison.

How now, Frau Blau?

Before the auctioneer's eyes, a prize gun was going, going, gone.

Dave Crehore
Illustrations by Tom Lowes

"Hey, c'mere. Look at this!" Dad said.

He crooked a finger at me. I followed him around the corner of the old farmhouse to see what was up.

"Look at the privy," Dad said. "Mrs. Blau is in there, Tuba doesn't know it, and he's got her trapped. I hope he isn't going to sell it right out from under her!"

At the age of 13 I didn't have a well-developed sense of drama — that would come later in my teens — but I could sense that the curtain was going up on some sort of farce featuring two classic Manitowoc County characters of the early fifties: Colonel Tuba the auctioneer and Mrs. Blau the antique dealer, in and around an outhouse near Menchalville.

Tuba was the local nickname for an auctioneer who flourished in eastern Wisconsin during the fifties, selling off the old pioneer farms. He was a short, waddling flamboyant man, ringed with rolls of fat like the coils of a sousaphone. And he did in fact play the tuba in a polka band. On Friday nights his oompah riffs could be heard right through the walls of the country taverns and dance halls where his band played. Tuba sat at the rear of the stage with the drummer, his bulk dwarfing the dented old Elkhart horn he played, his chubby little fingers manipulating the valves with lightning speed.

On Saturdays, however, he was all business. He had the essential tools of the successful country auctioneer: he was funny, he knew the secondhand price of everything from a Wedgwood teacup to a silo filler, and he had a voice that could carry across two plowed fields and a woodlot. As did many auctioneers in those days, he called himself "Colonel" and affected a cane, cowboy boots and a huge white Stetson.

I knew a little about Mrs. Blau already, and Dad had told me more that morning while we were driving to the auction. "She's an antique dealer," he said, "strictly small-time, but she's as honest as the day is long, which is rare. She goes to all the auctions, and she really knows her stuff. She's about seventy, skinny as a rail, always wears black and always carries an umbrella."

Dad was furnishing our old house on the edge of Manitowoc with antique chairs, tables, dressers and cabinets that had been brought to Wisconsin by the first settlers. What he couldn't buy at auction, he bought from Mrs. Blau. And from time to time he furnished our gun cabinet as well, bidding cautiously on the classic Ithaca, Fox, Lefever, L.C. Smith and

Parker side-by-side shotguns that occasionally turned up in basements and barns. Dad would take them home, clean them up and then resell them, squirreling the profits away for the day when one of the high-grade Lefevers called an "Uncle Dan" would show up on an auction block. As far as Dad was concerned, the Uncle Dan Lefever was the ultimate shotgun, and he wanted one desperately.

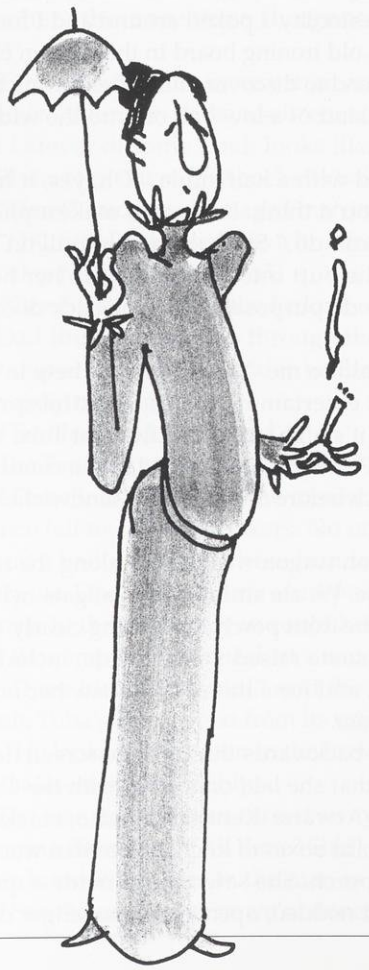
As we watched, Tuba and a small crowd of farmers moved ever closer to the outhouse. It was situated in a clump of overgrown lilacs against the back fence, and was surrounded by old farm machines parked there to be sold. At the moment, Tuba was only 20 feet away, trying to unload a rusty little Farmall Cub tractor on one of three interested bidders among the crowd.

"Come on, boys," Tuba said, impatiently. "I can't let this machine go for three hundred and fifty dollars. They don't make them like this any more!"

"Good thing, too, enso?" said one of the farmers. Tuba ignored this sally. "Three-fifty I got. Who'll give me four hundred, four, four, four?"

"Three seventy-five," said the current high bidder, a rangy Norwegian with a cheek full of Copenhagen. Tuba shook his head. "Thank you, Nils, but we're going fifty dollars a throw today, just like the big city. And besides, you're bidding against yourself. Who'll go four hundred?"

The second of the interested bidders raised his finger and then quickly withdrew the gesture. But Tuba was too fast for him. "I saw that, John," Tuba said. "C'mon, John, he who hesitates is last!"



John slowly withdrew a small spiral notebook, a stub of pencil, and wrote down some figures. Then he began a problem in long division, out loud.

"Thirty-three and change, John," Tuba said. "Thirty-three dollars a month, if that's what you want to know. Beer money for you, John!"

John wrote this down and then began to multiply it by twelve to check Tuba's mental arithmetic.

Tuba rolled his eyes to amuse the crowd. Then he spun around and pointed his cane at the third interested bidder, a man of about eighty in a snap-brim straw hat. "OK, Romy!" he boomed, "don't go playing deaf on me now, I know you can hear me and I know you're interested, so let's get off the pot, here. Now's your chance, Romy. It's four hundred to you."

"But will it start?" Romy asked.

"Will it start? Of course it will start. It started the last time it ran!" shouted Tuba.

A titter of laughter ran through the crowd of onlookers, but Romy couldn't hear it.

"Well..." Romy said, tentatively.

"Sold!" said Tuba. He slammed his cane down on the tractor's worn leather seat, which split open at the blow and sent shreds of horsehair padding drifting away on the May breeze.

"Sold for four hundred dollars to Romy Pankratz, item number 176 the Farmall tractor," Tuba intoned. He tore a sheet of paper off a clipboard and handed it to Romy. "There ya go, Romy," he said. "Signed, sealed and delivered. Just take that around to the cashier on the porch." Convinced that he had a bargain, Romy smiled and tottered off to the front of the farmhouse.

Tuba shook his head and chuckled. He clapped his hands to regain the attention of the audience. "OK," he said, "right over this way, item number 177, the disk harrow, believed to be a John Deere — at least, it's green — so who'll start me out..."

Tuba stopped in mid-sentence. He was standing in front of the outhouse. "What the heck, boys, the lady said sell it all, so by God I will!"

He gave the side of the outhouse a resounding whack with his cane. "What am I offered for this survivor of a simpler time, made of solid red cedar, don't hardly stink at all, she'll come in handy when the septic tank freezes up, just pull out them bolts and you can take her right along, who'll start me out at twenty-five dollars..." Tuba smote the privy a second time and started looking rapidly back and forth at the crowd for signs of interest.

"Judas priest!" Dad said.

He and I had been looking on, open-mouthed, as Tuba sold the Farmall Cub, wondering if Mrs. Blau would summon the courage to exit the outhouse under the eyes of all those men. We never believed Tuba would actually try to sell the outhouse, but now that he was, Dad knew it was time to step in. What if the door didn't latch from the inside? What if an inter-

ested party decided to check out the accommodations before making a bid?

"Hold on a minute!" Dad shouted, and elbowed his way through the audience. He bent down and whispered into Tuba's ear.

Tuba turned and gave the outhouse a close look. Then he turned back to Dad. He snorted incredulously. "Occupied?" he asked, in a low voice. "Old Frau Blau?" Dad nodded. Nothing happened for a few seconds. Then Tuba's multiple bellies began to shake. He began to alternate between fits of laughing and coughing. Finally he caught his breath and shook Dad's hand.

"You, sir, are a real gentleman," Tuba said. "I was about to open the door." He laughed again, helplessly, for about half a minute. "Oh, God, I wouldn't have missed this for the world!" he said. He saluted Dad with his cane and cleared his throat loudly to reassemble the audience, who had begun to scatter.

"Now, then, item 177 the disk harrow. Who'll start me out..."

When the harrow was sold, Tuba led the crowd to the barn to inspect the hay. He kept talking breathlessly as he walked. "OK, boys, I'm told it's all good stuff, first cutting from last year, and no, Nils, I ain't going to sell it a bale at a time!"

Quiet returned to the outhouse and its clump of lilacs. Dad tiptoed up to the door and tapped gently. "It's all right, Mrs. Blau, you can come out — they're all gone," he whispered.

The door eased open about an inch. The metal ferrule of Mrs. Blau's rolled-up umbrella appeared first, followed by her prominent nose. Then she scuttled out, jabbed the umbrella into the soft earth and smoothed down her long black cotton dress.

"Woo!" Mrs. Blau said, exhaling sharply. "That was a close one. I was watching through a knothole and I saw what you did. I owe you one, Mr. Crehore. If I can ever do you a favor..."

"Mrs. Blau, call me Dave," Dad said, smiling. "We haven't got any secrets from each other any more."

"All right," said Mrs. Blau, "then you can call me Mary."

Dad took his pipe from his shirt pocket and filled it with Walnut. As he did, Mrs. Blau instinctively pulled a crumpled pack of Chesterfields from the pocket of her dress. "Need a light, Mrs. — um, Mary?" Dad asked. Mrs. Blau nodded and leaned forward as Dad thumbed his Zippo.

Mrs. Blau dragged deeply on her cigarette as Dad lit and tamped his pipe. They smiled at each other through the smoke.

"You know, Dave, I said I would do you a favor, and I think I can, right now," Mrs. Blau said. "You asked me once to let you know if I ever saw an Uncle Dan Lefever shotgun in my travels. Well, there is one here at this farm and it's a beauty. There's a nice Parker too, and Tuba has got both of them hidden away. And yes, I know what I'm talking about. My father was a gunsmith in Germantown and I used to help him. I grew up with those guns."

Mrs. Blau glanced disapprovingly over at the barn where Tuba was still selling off the hay. "According to the ad for this auction," she said, "there are supposed to be three shotguns here, but there's only one tagged for sale, and it's an old Crescent Arms wall-hanger. So when I was in the farmhouse looking over the furniture yesterday, I poked around and I found the other two behind an old ironing board in the kitchen closet. I'll bet Tuba will pretend to discover them after the auction is over and make some kind of a low-ball offer to the widow that owns this farm."

She looked up at Dad with a half-smile. "Oh, yes, it happens more often than you'd think. I've got to make a phone call, and I'll see what I can do." She took a final pull on her Chesterfield, ground the butt into the grass with her heel, winked at Dad, and strode purposefully to the back door of the farmhouse.

"Good grief," Dad said to me. "You come out here in the country for a little light entertainment on a beautiful spring day and all of a sudden it's high intrigue! I thought Tuba was a jolly fat man like Mr. Pickwick, and instead he's a conniver. C'mon, let's eat our lunch before the egg salad sandwiches go bad."

Our Studebaker station wagon was parked along the road in front of the farmhouse. We ate sitting on its tailgate, where we had a good view of the front porch. Something clearly was going on — there were some raised voices inside, including Mrs. Blau's raspy tenor, and for a moment we saw her nose-to-nose with Tuba's cashier.

Finally she emerged backwards through the screen door, carrying two shotguns that she laid on a table with the Crescent Arms gun, an old Atwater-Kent table radio, stacks of dishes and some cardboard boxes of kitchenware that were to be sold from the front porch. She saw us and made a quick thumbs-up gesture. Dad nodded, opened the passenger door

of the Studie and removed an envelope full of twenty-dollar bills from the glove compartment. It was his Lefever fund.

A little while later the auction started again. Tuba disposed of the dishes for seven dollars, and Nils walked off with the Atwater-Kent for a buck seventy-five. Then Tuba looked down and saw three shotguns where there should have been one. He turned to the cashier and berated him in an agitated whisper. The cashier shrugged and nodded toward Mrs. Blau, who stood in the front row of onlookers with her arms folded. She fixed Tuba with a gimlet-eyed stare.

Tuba recovered his voice. "All right, what's next?" The cashier handed him the Crescent Arms gun and Tuba brandished it over his head. "Nice old American gun with Damascus barrels," he said. "Lotta life left in this old girl. Let's start her out at ten dollars." But there were no takers at ten; in the end Romy Pankratz bought the gun for $4.50. "I got a lampshade at home that will just fit this baby," Romy said, and everyone laughed.

"OK," Tuba said, "back to work." He walked past the remaining two shotguns and picked up one of the cardboard boxes. "Here we got everything you newly-weds need to get started out in life." He rummaged in the box and started pulling things out. "Colander, eggbeater, spatula, lefse roller. Who'll start it out at a quarter."

"Hey, wait a minute!" came a voice from the rear of the crowd. Everyone turned. A mousy little man with a tweed cap was holding up a newspaper clipping. "It says here there are three shotguns for sale, so sell 'em!"

Tuba glared at the mousy man and picked up the Lefever. "All right, he says sell 'em so I will. This here is a Lefever of some kind, looks like a fancy one, so we'll start her out at fifty bucks. Who'll give me fifty?"

"Here!" said a middle-aged man in a brown fedora.

"OK, fifty I got, who'll go a hundred?"

"One hundred," said Dad.

"One-fifty!" snapped the Fedora.

Dad thumbed quickly through the twenties in his envelope. He counted under his breath: two-forty, two-sixty, two-eighty.

"Two hundred," Dad said.

The Fedora jumped back in. "Two-fifty!"

"Three hundred," said the mousy man. A stunned silence fell over the onlookers. No one in Manitowoc County had ever paid three hundred dollars for a shotgun. Dad's shoulders slumped; he was out of money. In the distance you could hear crows cawing and the complaining squeak of a windmill.

"Three hundred is bid!" said the mousy man. Up on the porch, Tuba's face turned from its usual pink to an ugly crimson. He looked at the man in the brown fedora and shook his head almost imperceptibly.

The man in the fedora turned away. "All done?" said Tuba, scanning the crowd. "All done? Sold! The Lefever shotgun for three hundred dollars to the man in the back there with the cap. See the cashier when we're done."

"There it goes," Dad said to me. "That's about as close as I'm ever going to get to an Uncle Dan."

Up on the porch, Tuba picked up the Parker. All his professional bonhomie was gone. "Now here's another nice one," he said in a gritty voice, "a real Parker, the Old Reliable, nice VHE grade, partridge season comin' up before you know it. Gotta start this one out at a hundred."

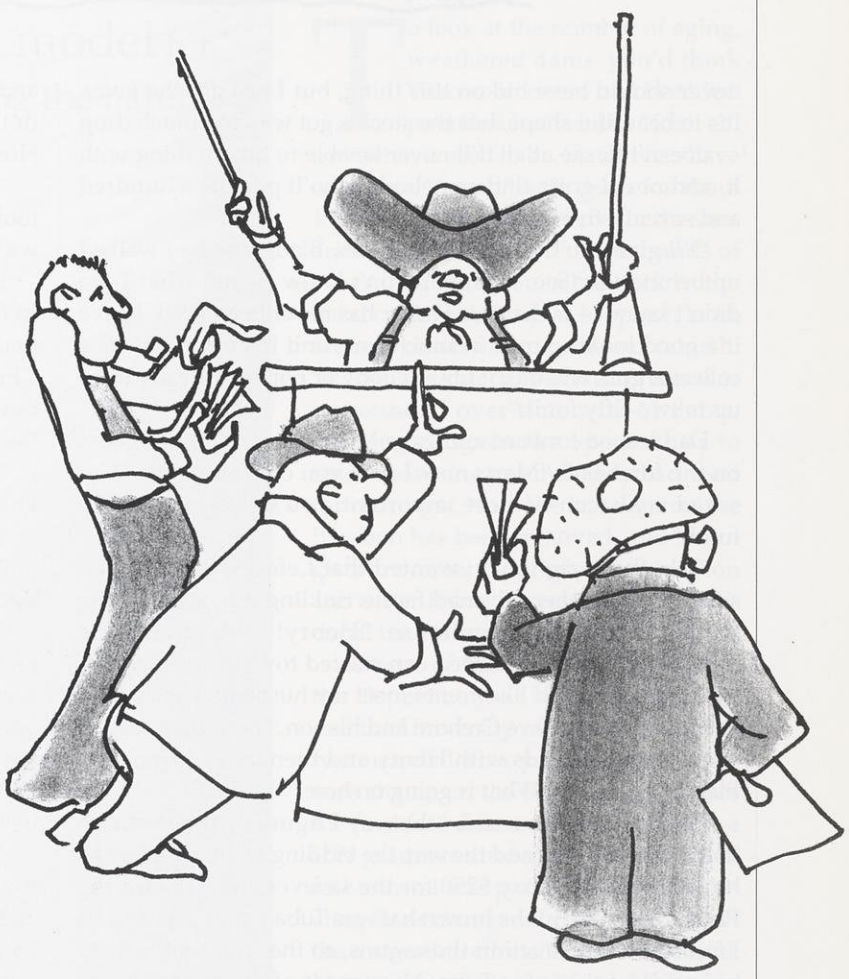
Dad raised his hand. "One hundred," he said.

"One-fifty," countered the Fedora.

"One seventy-five," Dad said.

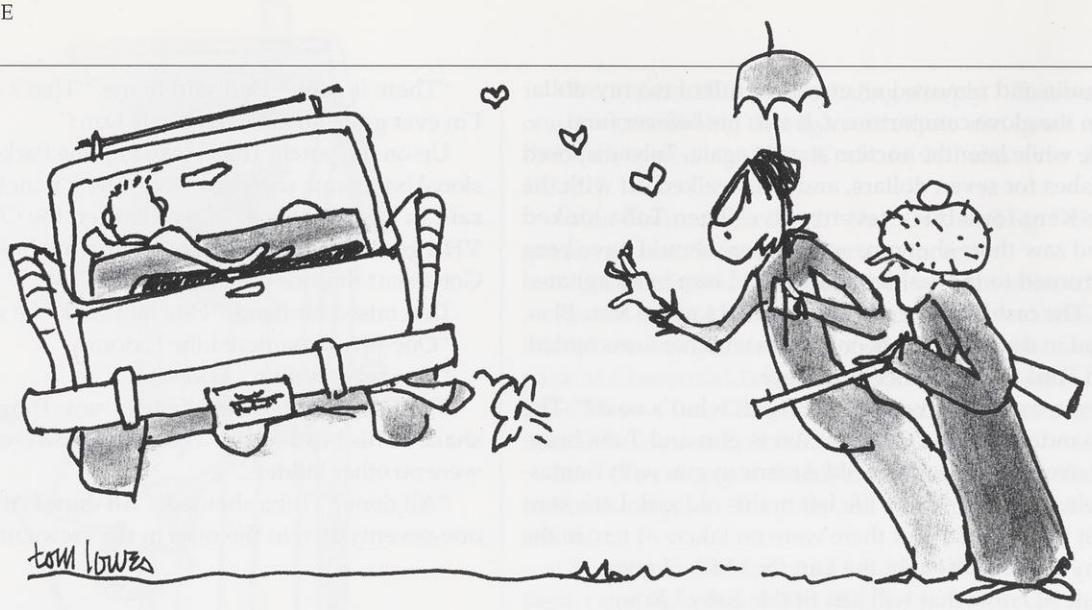
The Fedora raised his hand. I saw Tuba give that quick shake of his head again. The Fedora lowered his arm. There were no other bidders.

"All done?" Tuba shouted. "All done? All right, SOLD for one-seventy-five to the man in the crew cut!" He waved his hand and stalked into the farmhouse, the high heels of his cowboy boots thudding on the worn floorboards.



The auction was over. Everyone started talking at once. Suddenly Mrs. Blau was at Dad's side. "Hurry up, hurry up, pay for it. Right away!" Dad went up to the cashier's table, counted out twenties from his envelope, got his change and a receipt, and grabbed the Parker.

We walked out to the car. Dad raised the shotgun to his shoulder and looked down the barrels. "Shoot!" he said. "I



never should have bid on this thing, but I just got the fever. It's in beautiful shape, but the stock's got way too much drop — doesn't fit me at all. I'll never be able to hit anything with it, and now I gotta find somebody who'll pay me a hundred and seventy-five bucks for it!"

"I'll give you that for it," said Mrs. Blau, who had walked up behind us. "See, what you don't know — and what Tuba didn't know — is that this Parker has never been fired. I gave it a good looking-over at lunchtime, and it's mint. This is a collector gun, whether it fits anybody or not. I was ready to go up to two-fifty for it."

Dad leaned forward and gave Mrs. Blau a resounding kiss on the forehead. "Mary, now I owe you one," he said. "You saved my bacon — more important, you saved my Lefever fund!"

"Oh, that's right, you wanted that Lefever, didn't you," said Mrs. Blau, her wizened face wrinkling into a smile. She turned toward the farmhouse. "Henry!" she called. The mousy man with the tweed cap started toward us, carrying the Uncle Dan. "I'd like you to meet my husband, Henry Blau — Henry, this is Dave Crehore and his son," Mrs. Blau said.

Dad shook hands with Henry and then looked from one Blau to the other. "What is going on here?" he said.

"Well," Mrs. Blau said, "the way I figure it, Tuba wanted both of those guns, and the way the bidding went, it looks like he was willing to pay $250 for the Lefever and $150 for the Parker. The man in the brown hat was Tuba's shill. Henry and I forced Tuba to auction those guns, so the shill's job was to bid and get them for Tuba. Now most of these people are farmers, and they wouldn't dream of paying more than fifty bucks for a shotgun. Tuba knew that, and he figured he'd get both guns for a song. But he didn't figure on us!" Mrs. Blau laughed a hacking cigarette laugh, like the crumpling of tinfoil. She linked arms with her husband. "If Tuba can have a shill, so can I!"

"Dirty work at the crossroads," Dad said.

"Yes, there are wheels within wheels, even in Menchalville," Mrs. Blau replied, with another hack. "So — let's get down to business," she said. "Dave, you've got a hundred and seventy-five in the Parker, and we've got three hundred in the Lefever. That's a hundred and a quarter difference. How much have you got left in your envelope?"

"Hundred and five," Dad said. "OK," said Mrs. Blau, and took the envelope. "You're twenty bucks short. Do you think we can carry Mr. Crehore for twenty bucks, Henry?"

I had a sudden inspiration. "I've got twenty bucks!" I said. In fact, I had twenty-two and some change. It was what remained of my leaf-raking money, my birthday money, my Christmas money and my snow-shoveling money. I pulled out my wallet and counted out twenty singles and handed them to Mrs. Blau.

"Thank you, sonny," she said. "Let's swap over." Dad and Henry Blau exchanged guns. "OK, done and done."

Mr. Blau spoke up for the first time. "I suggest we all get out of here before the wrath of the Tuba descends on us," he said.

Dad shouldered the Uncle Dan, and then lowered it and looked it over. "There's a little wear," he said, "but it fits like a dream." He put the gun in the empty case he always took to auctions — the "just in case case," he called it — and laid it on the back seat of the Studie. Then he turned and took Mrs. Blau's skinny hand in his. "I can't thank you enough, Mary," he said.

"Dave — the pleasure is all mine. I was almost caught with my...well, I was almost caught."

She looked up at Dad and smiled. "Where were you when I was thirty?" she asked.

"I was two years old," Dad said.

"Well, there is that, I suppose...See you next Saturday!"

Dad started up the Studie, but before he drove off he reached back and patted the gun case in the back seat.

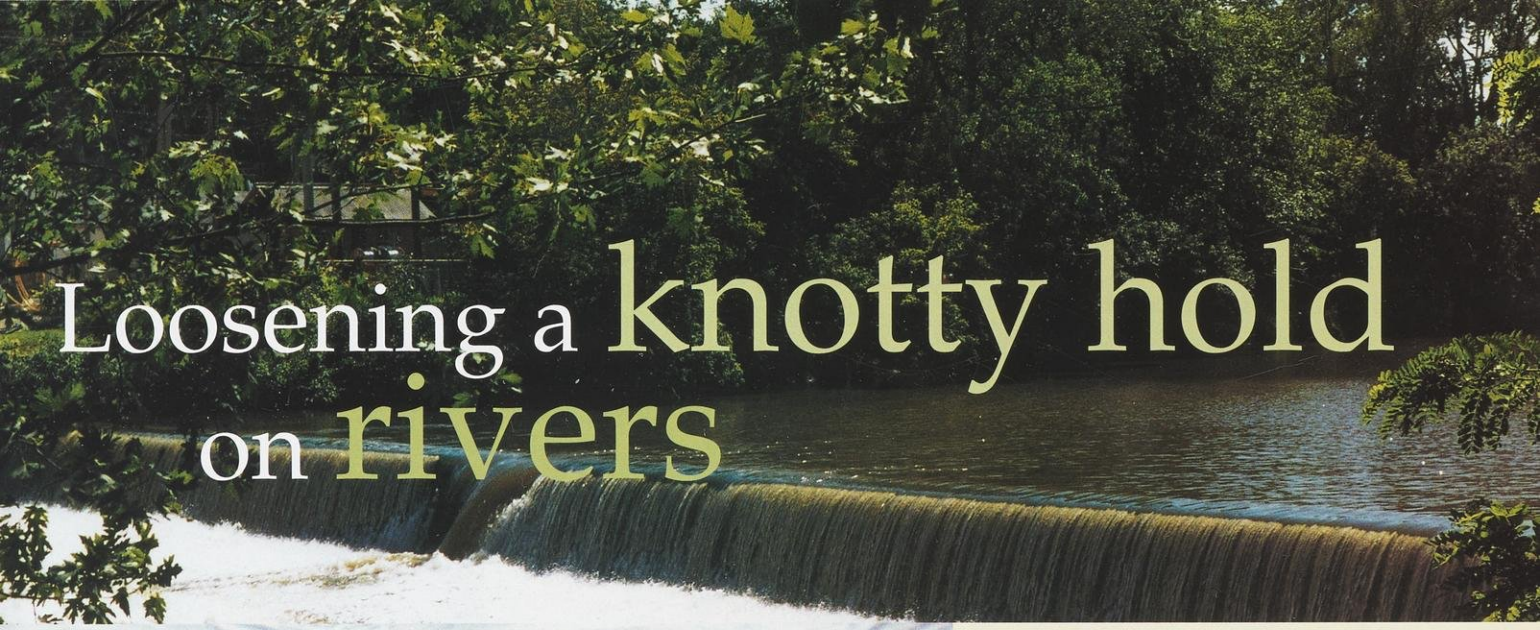
Then he laughed, let in the clutch, and we started for home.

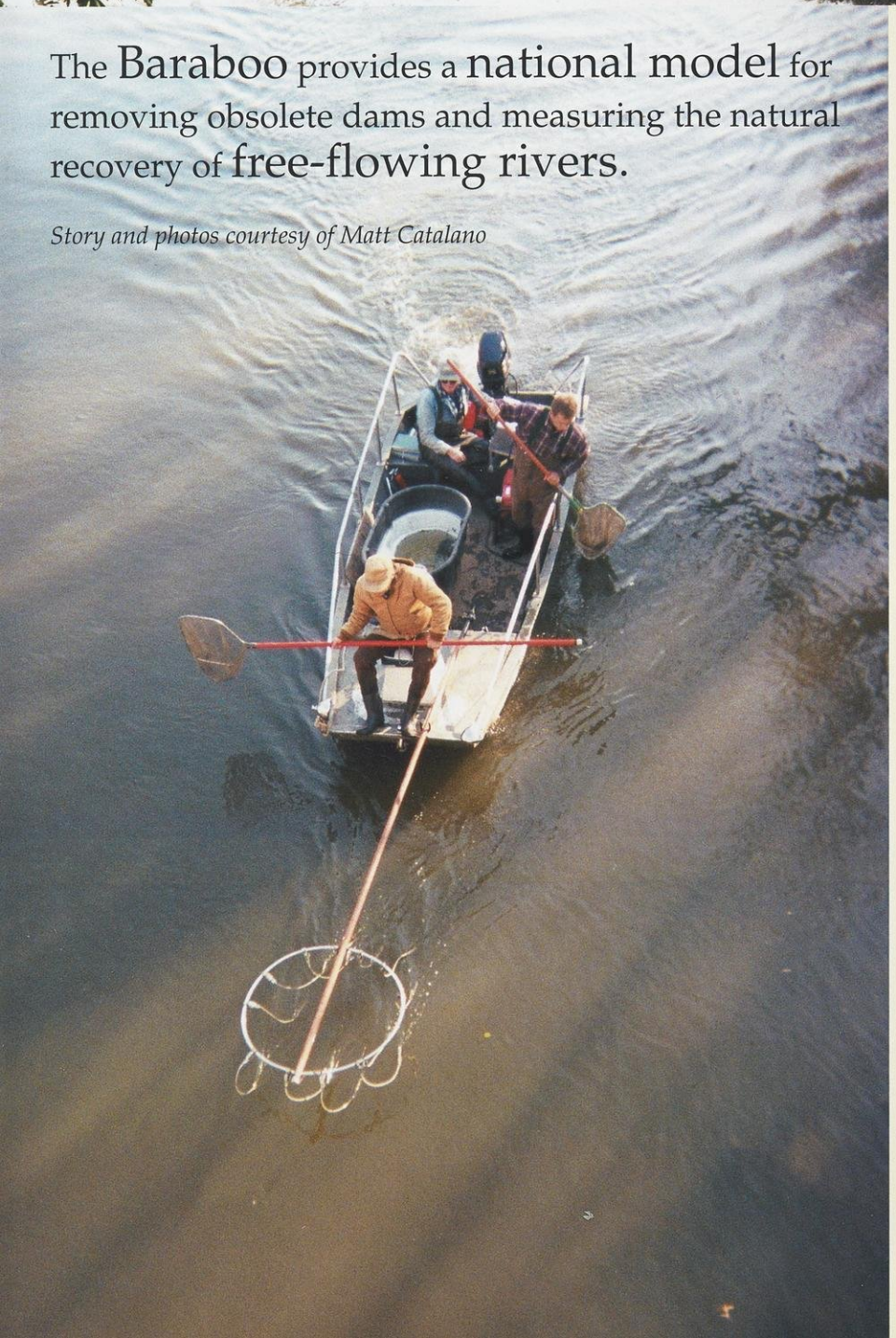
Dave Crehore writes from Green Bay.

Loosening a knotty hold on rivers

The Baraboo provides a national model for removing obsolete dams and measuring the natural recovery of free-flowing rivers.

Story and photos courtesy of Matt Catalano





To look at the number of aging, weathered dams, you'd think Wisconsin rivers had been impounded forever, but "forever" isn't what it used to be. State rivers have only been "tamed" with dams for about 150 years — a single lifetime for the venerated lake sturgeon. For thousands of years lake sturgeon came back to the Baraboo River each year to spawn in an ancient ritual of renewal and rebirth. This southwestern Wisconsin river was impounded over time with 11 dams, denying sturgeon the opportunity to reach spawning grounds they had used for centuries. Now the last dam on the Baraboo has been removed, and biologists are researching whether sturgeon and other fish will reclaim their traditional haunts.

A team of fisheries reseachers from the Department of Natural Resources and the University of Wisconsin recently concluded a six-year project to measure change in the Baraboo River after the final four dams were removed. As a UW graduate student and later a DNR researcher, I was part of the team evaluating those changes. I'm happy to report the restoration efforts have been fruitful: Habitat, aquatic insect life and fish communities dramatically and quickly recovered. As more old dams become obsolete, we believe the financial strategies

(top) A lowhead dam, like the Oak Street Dam on the Baraboo River, looked innocuous, but was high enough to prevent upstream migrations.
(left) Fisheries technicians and biologists survey river reaches above and below each dam on the Baraboo to document aquatic species recovery after the four dams were removed.

and approaches used on the Baraboo River can serve as a model for future dam removals.

Appreciating the lay of the land

From its headwaters near Kendall and Hillsboro to its confluence with the Wisconsin River at Portage, the Baraboo River drains a rich, 650-square-mile basin. For much of its 120-mile length, the Baraboo flows between the majestic ridges of the Baraboo Bluffs, quartzite outcroppings of hard rock thought to be more than 1.5 billion years old.

In more recent times, glaciers shaped the Baraboo River basin. During the last Ice Age, the Wisconsin Ice Sheet, the last glacial lobe that once covered most of Wisconsin, advanced toward the southwest to the present day location of the City of Baraboo, carrying eroded rocks, gravel and sand. About 12,000 years ago, the glacier retreated, leaving a terminal moraine oriented north to south and bisecting the Baraboo River basin. The rock and gravel deposited along the moraine created the Baraboo Rapids — fast-flowing, rocky riffles in the otherwise sluggish, silty river.

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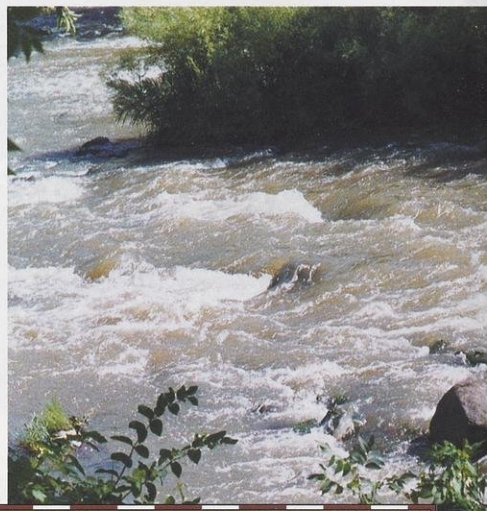
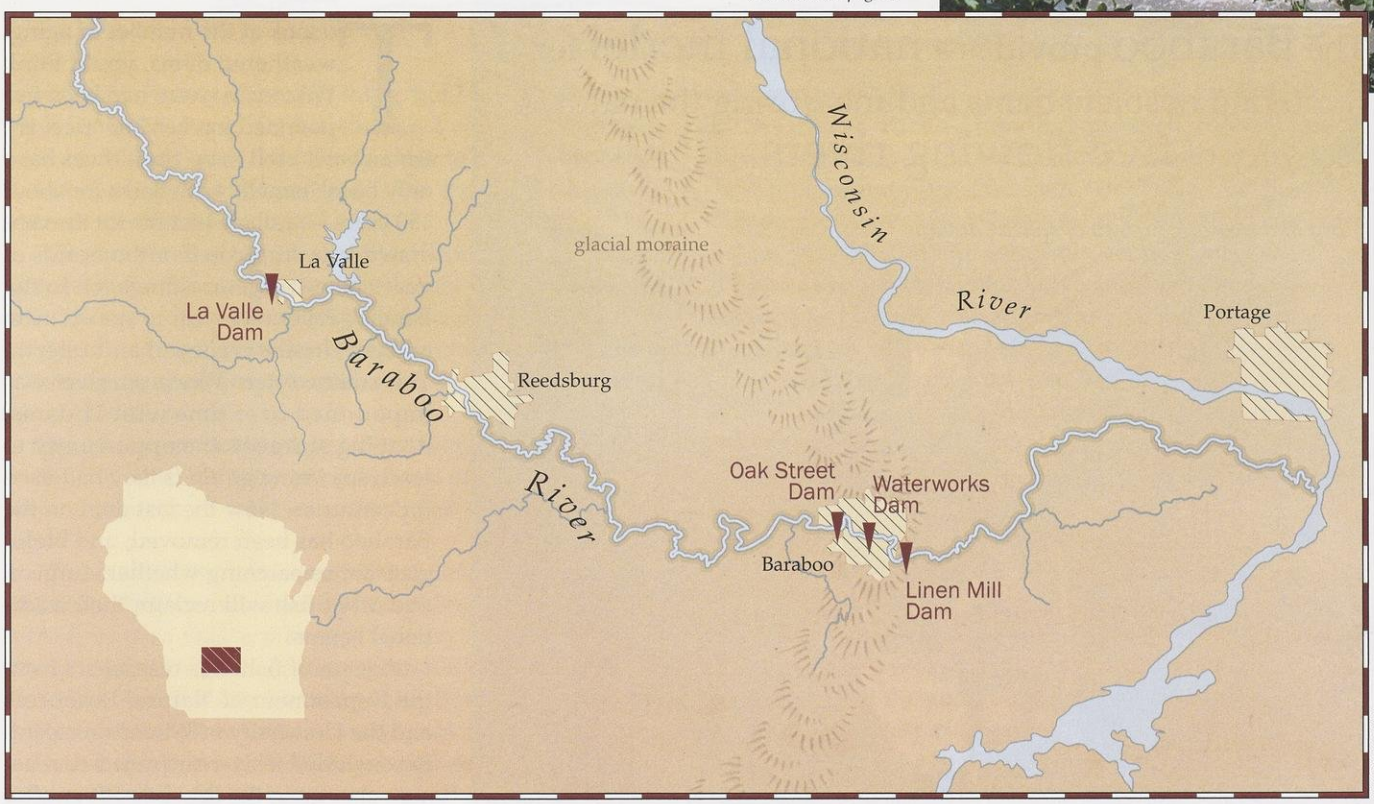
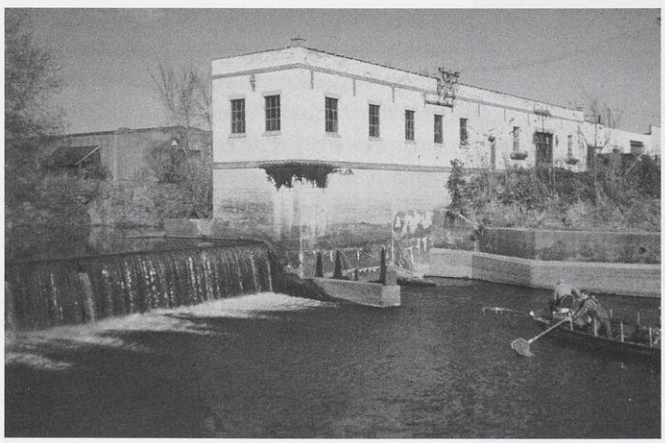
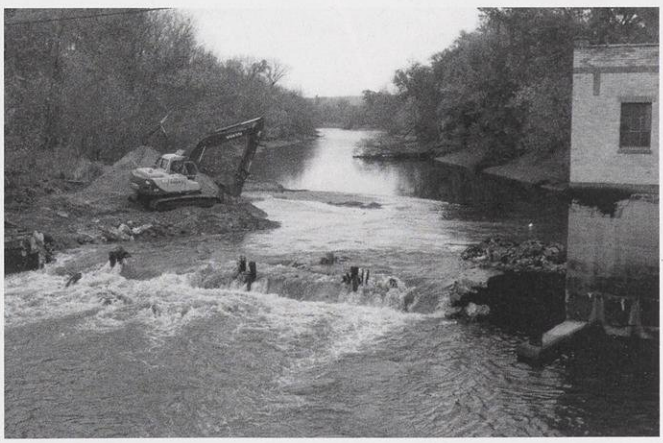




(above) **The 120-mile Baraboo River, mainly in Sauk County, is the longest river in the nation restored to free-flowing conditions by removing dams.**
(below, left to right) **Views of the Linen Mill Dam site before, during and after the dam was removed. Dam removal proved far less costly than dam repairs.**





CLEAN WATER

NATURAL BEAUTY

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OUR HOMES

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In Grandpa's Woods

The forest trail of discovery

For ages 4 to 8. To play this game you need two dice and game pieces (find a seed, pine cone or other forest product). Roll the dice and move your game piece ahead, following the directions on the footprints. To win, be the first person to take 100 steps (representing 100 years of forestry in Wisconsin) "In Grandpa's Woods." Roll the exact number to land on Grandpa's cabin.

For ages 9 and older or students who want a greater challenge, visit **www.wisconsinforestry.org** to print off trivia cards. At each turn, roll the dice and move your game pieces. Answer a question from the card that matches the color of the spot you've landed on (see color key). Answer correctly and you can move on at your next turn. If you are incorrect, try another question at your next turn. Reach Grandpa's cabin to win.

Start Here

[1] Grandpa's forest planted in 1904.

[2] Listen to the forest sounds.

[3] You're well prepared for the walk in the woods.

[4] Skip a turn while you watch chipmunks playing on a tree trunk.

[5] You helped Grandpa plant some trees last spring. Roll again.

[6] Fallen leaves are fun to play in and also make the soil better.

[7] You left your daypack sitting beside the trail. Move back 5.

[8] Stop for a snack. Skip a turn.

[9] Sale of trees from Grandpa's forest will someday pay your college tuition.

[10] You write in your journal about your adventure in the forest. Move ahead 1.

[11] Happy Arbor Day (celebrated in Wisconsin on the last Friday in April since 1883).

[12] Enjoy the beauty of Wisconsin woodlands.

[13] Squirrel plants tree seeds.

[14] Seed sprouts.

[15] You stepped in poison ivy. Go back to step #2.

[16] Deer eats tree seedlings. Move back 5.

[17] Campers gather wood.

[18] Hikers hear birds singing.

[19] Trees help clean the air.

[20] You pick blueberries. Move ahead 2.

[21] Wait while Grandma makes blueberry jam. Skip a turn.

[22] Everyday you use things made from trees and wood.

[23] Turkeys and squirrels eat acorns.

[24] You help Grandpa tap sugar maple sap to make syrup.

[25] Move ahead three steps if you know Wisconsin's state tree.

sugar maple

[26] A windstorm destroys part of Grandpa's woods. Go back to step #19.

[27] Turkeys start roosting in the oak trees. Roll again.

[28] You find a lake in Grandpa's woods. Forests help keep our water clean.

[29] Explore Grandpa's old tree house.

[30] Forests cover nearly half of Wisconsin.

[31] Move ahead three more steps if you can name one fun thing made of wood.

[32] Some trees are used to make paper.

[33] Listen to the woodpecker "Rat-ta-tat-tat."

[34] Have you seen red or orange leaves on trees in the autumn?

[35] You make sure the campfire is cold before leaving your campsite. Move ahead four steps.

[36] Toilet paper is made from trees.

[37] Some of Grandpa's trees die from insect damage. Go back 3.

[38] Skip a turn while you rest in the cool shade of the trees.

[39] You find a good tree to climb.

[40] Your new compass is working well. Move to step #45.

[41] What is your favorite thing to do in a forest?

[42] You find a beautiful bird feather. Roll again.

[43] Some clothing is made from rayon fabric, a forest product.

[44] The white birch trees are dying of old age. Skip a turn.

[45] White pine can live to 250 years.

[46] You find a very large pine cone. Roll again.

[47] Paper towels are made from wood.

[48] The young trees aren't getting enough sunlight or moisture to grow well.

[49] Stand quietly and watch a wild turkey.

[50] The trees are growing quickly in the good soil. Move ahead 7 steps.

[51] You follow a deer path. Move to space #53.

[52] You follow the main trail. Go directly to space #58.

[53] Wisconsin has 16 million acres of forest. Move ahead 3.

[54] You find a black bear den. Move ahead 3.

[55] The trees you helped Grandpa plant are growing well. Roll again.

[56] Can you name something good to eat that we get from trees or forests?

[57] Every creature — great and small — is important in the "Web of Life."

[58] Much of the forest land in Wisconsin is owned by people like Grandpa.

[59] Nearly every part of a tree can be used to make things we need. Move ahead 6.

[60] A beaver has cut down several trees. Go back 2.

[61] Dead trees make good wildlife homes. Move ahead 4.

[62] Wolves like large forest areas.

[63] Trees give oxygen for us to breathe.

[64] Move ahead 2 steps if you know the state animal.

badger

[65] Watch a rabbit hop down the trail ahead of you.

[66] You're enjoying the beautiful wildflowers on the forest floor.

[67] Trees help hold the soil in place. Stay rooted while you skip a turn.

[68] Grandpa did not sell his woodlands to someone who wanted to cut it all down and put buildings on it. Move ahead 3.

[69] Grandpa talks with a forester about caring for his woodlands. Move ahead 2.

[70] Help Grandpa record what is growing in his woodlands.

[71] Forester selects some trees ready for harvest.

[72] Grandpa signed the logging agreement without understanding the terms. Go back 2.

[73] Move ahead 5 steps if you know whose favorite saying is "Only YOU Can Prevent Wildfires."

[74] A fire truck doesn't have enough space to reach Grandpa and Grandma's house. Go back 4.

[75] You give Grandpa the pack of matches you find. Move ahead 3.

[76] Grandpa forgot to get a burning permit. Go back 5.

[77] Oil and minerals are examples of "nonrenewable resources" — once we use them up, they're gone.

[78] Wood and drinking water are examples of "renewable resources." They can be used again and again.

[79] Every year each American uses the equivalent of one tree (100' tall and 18" diameter).

[80] Grandpa is able to keep a disease from killing trees in his forest. Move ahead 2.

[81] Grandpa protects a rare plant. Move ahead 1.

[82] You spend the weekend helping pull invasive plants from Grandpa's woods.

[83] Deer like the area where Grandpa harvested aspen. Roll again.

[84] You helped Grandpa plant some shrubs to provide food for wildlife. Move ahead 4.

[85] Great horned owls are nesting.

[86] Have fun on the trip to the lumberyard with Grandpa to buy lumber for a playhouse. Move ahead 2.

[87] Skip a turn and stand quietly while a butterfly lands on your arm.

[88] You help collect acorns to sell to the tree nursery.

[89] Trees help lower the temperature and add beauty to our communities.

[90] Move ahead 1 if you know the name of the state bird.

robin

[91] You and Grandpa take a hunters' safety class together.

[92] A hawk circles in the sky above the trees.

[93] Grandpa allows other people to enjoy his woodlands.

[94] Move ahead 2 if you can name Wisconsin's state flower.

wood violet

[95] Grandpa enrolls his woodlands in the Managed Forest Law. Move ahead 1.

[96] You and Grandma have fun collecting mushrooms from the forest.

[97] Timber theft! Three of Grandpa's prize walnut trees are stolen. Go back 4.

[98] Did you know that Wisconsin has been the top paper making state for 50 years?

[99] Tree frogs are singing. It's getting late. Skip a turn.

[100] Grandpa's cabin. You win!

You Win!

TRIVIA CARD COLOR CODES

- Forest Animals, Insects & Plants
- Forest Management
- Forest Facts
- Forest History
- Forest Benefits
- People, Places, & Organizations

See game instructions below.

A copy of Sharon Hart Addy's children's book "In Grandpa's Woods" may be found at your local library.

For more information visit **www.wisconsinforestry.org**

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Poster (front) by Heather Knox - Image by Scott Nielsen

Art Direction (gameboard) by Jeanne Gomoll

Written by Natasha Kassulke

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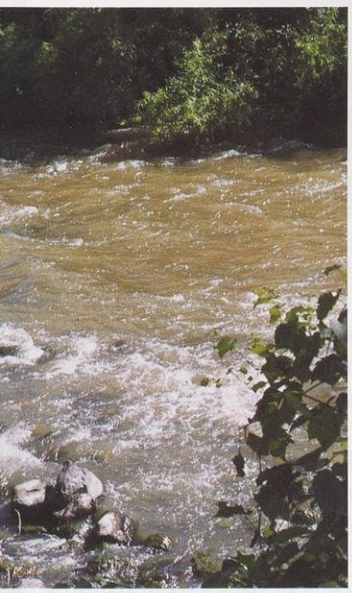


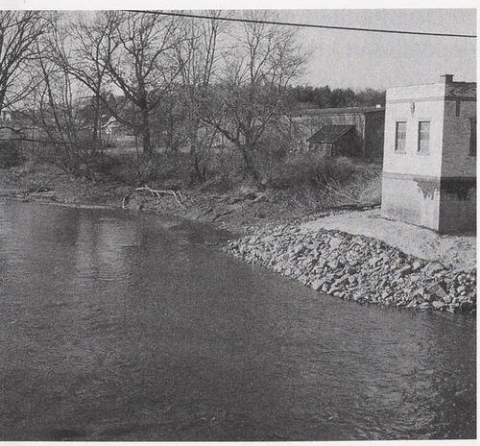
Glacial moraine at the Baraboo Rapids created riffles and fast, tumbling waters on an otherwise sluggish river.

Marty Wessels measures, tags and weighs a sturgeon on the Baraboo. Biologists want to know if sturgeon that reproduced on this river for millennia will rediscover spawning routes that were blocked by 11 former dams for 150 years.

continued from page 16

The rapids tumbled and oxygenated the water, and provided vital fish spawning habitat by preventing the build-up of silt. Many fish species must lay their eggs in clean gravel or cobble, where eggs can fall into crevices and spaces in a gravel bottom to develop for several days to a couple of weeks. Clean gravel bottoms protect the eggs and allow water to flow through, carrying vital oxygen to developing embryos. Eggs covered with silt can suffocate.

Before European settlement, the Baraboo landscape was dominated by open grassy areas and scattered oaks with little or no underbrush. Historians believe the region was kept in open grasslands by the Winnebago people, who set fires to drive game and maintain grazing lands for wildlife.



Harnessing power

The rich Baraboo landscape and the river's clear rapids attracted European settlers in the early 1800s. The dams they built provided inexpensive mechanical power, deepened river channels for navigation, provided flood control and created backwater pools for recreation.

Up to 11 dams were constructed on the Baraboo, the first in 1840. Settlers Eban Peck and James Alban seized on an ideal location that took advantage of a natural steep gradient to turn a water wheel just below the dam. Peck and Alban's handiwork, later known as the Waterworks Dam, was a rock and timber structure fitted with a sawmill. A local entrepreneur, George McArthur, built two other dams along the Baraboo Rapids in 1844 and 1898 later called the Oak Street and Linen Mill dams. The dams powered sawmills, grist mills, textile factories, and, later, electrical generators. A fourth dam, constructed about 50 miles upstream of the lower three, was known as the La Valle Dam. All of the Baraboo River dams were about 6–10 feet high — lowhead, run-of-the-river structures. Each dam created millponds with small storage capacities that overflowed and did not alter river flow.

Ecological consequences of damming

Although no official fish surveys survive from the days before the river was dammed, one can assume migrating sturgeon and other species could not move far upstream. The six- to 10-foot-high dams formed a physical barrier, converting the Baraboo Rapids from a free-flowing complex of riffles to a series of sluggish millponds. After the river was dammed, historical accounts cease to refer to species like lake sturgeon or smallmouth bass upstream.

Today scientists generally agree that dams do more harm than good to aquatic river life. Aside from blocking fish migrations, dams disrupt natural river processes. Emily Stanley, a UW-Madison limnologist, studied how dams block the downstream flow of sediment and nutrients. When water flows more slowly, sediments settle and eventually cover up rocky bottoms. Aquatic organisms that need rocky habitats to survive are especially hard hit.

The changes damming brings occur in stages. First, dams create lake-like impoundments just upstream with sluggish waters that favor lake-dwelling species. As sediments build up behind the dam, aquatic species able to tolerate heavier siltation, low dissolved oxygen levels and more extreme temperature fluctuations start to predominate. For instance, common carp might replace bass, walleye or lake sturgeon.

Dams block fish migrations. Engineers managing larger dams can add fish ladders or fishways to help fish migrate around the dam. Similar designs for lowhead dams have been developed only during the last 15 years or so, and most aging dams have not been retrofitted as such work is costly.

Finally, dams can strand aquatic species and cause their extirpation when they can no longer reach upstream habitats. A review of salmon found in the Pacific Northwest found that 101 of the 214 separate salmon stocks evaluated

were under immediate threat of extinction, mainly due to the dams blocking their migrations. In another example, Matthew Winston with the University of Oklahoma found that four fish species were extirpated upstream of an impoundment on a prairie stream in Southwest Oklahoma. He cited loss of access to seasonal habitat and negative interactions with other fish found in reservoirs as two reasons for the extirpations.

Fewer scientific studies have looked for signs of river recovery after dams are removed. The most well-known study, conducted by the Wisconsin Department of Natural Resources on the Milwaukee River following removal of the Woolen Mills Dam, found common carp numbers declined 80 percent while smallmouth bass populations increased ten-fold in the former millpond — a complete reversal in the fish community composition. The amount of rocky habitat increased by about 50 percent after the dam came out.

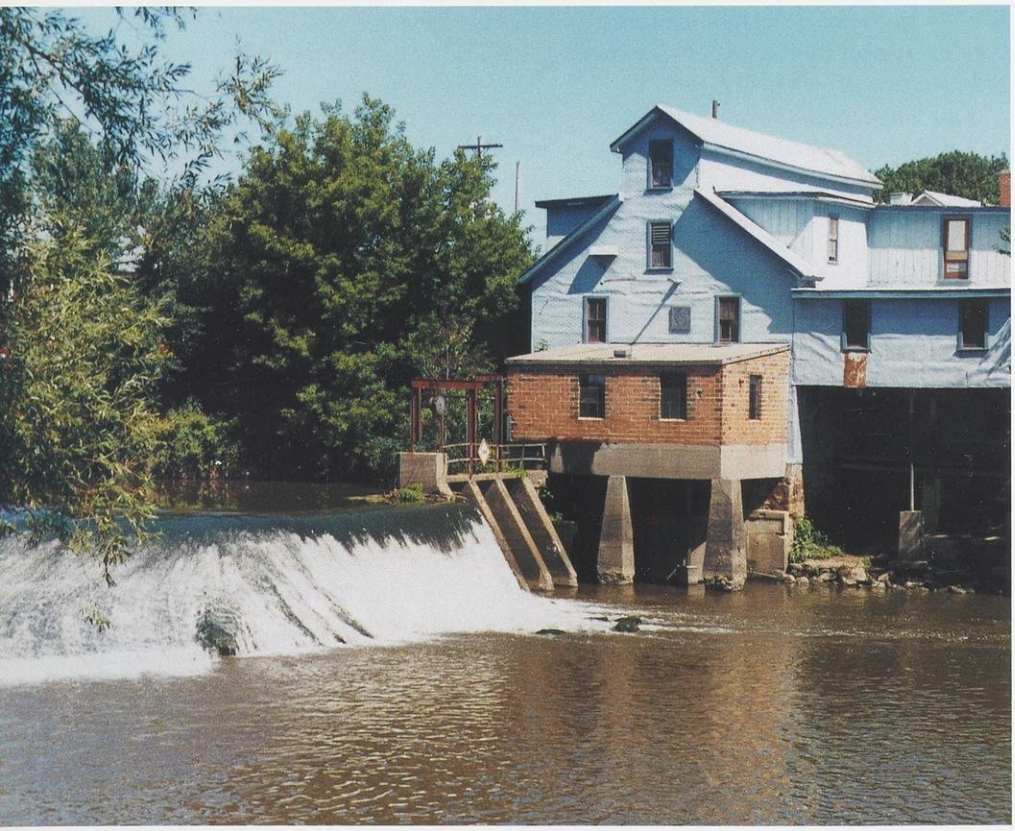
What went up, comes down

Creative management and creative financing certainly helped remove the Baraboo River dams more quickly, but bottom-line economics played the biggest role: It was simply much cheaper to remove the Baraboo River dams than to repair them.

In their heyday, the dams and mills were the most important industrial operations in their communities, providing jobs for many residents. However, the years eroded their importance. Construction of coal-fired power plants and large hydroelectric projects at Wisconsin Dells and Prairie du Sac decreased reliance on smaller dams for industrial and domestic power.

Time and the relentless forces of flowing water also took their toll on the aging dams. In the early 1990s safety inspectors found several structural problems with the dams. The Linen Mill Dam was missing several timber buttresses. The Oak Street Dam lost a large piece of concrete from the dam face after a flood in 1993.

The historic La Valle mill works was preserved and converted to an antique store. A wetland area was developed riverside near the old millpond.



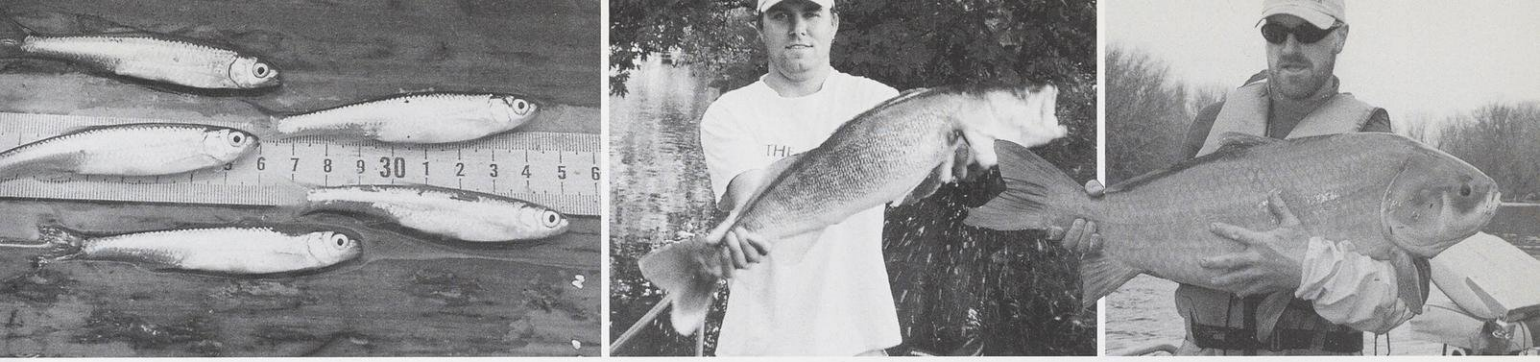
Repair costs were prohibitive for the dam owners. The City of Baraboo owned the Waterworks Dam and was eager to explore other options after receiving a $650,000 repair estimate. Dam removal was an enticing option because the community would incur one-time costs, while a repaired dam would need periodic maintenance and upkeep. The McArthur family, owners of the Oak Street and Linen Mill dams in Baraboo, was also more open to the idea of dam removal after weighing repair costs.

As the City of Baraboo considered removing the Waterworks Dam to save taxpayer dollars, the Department of Natural Resources and two nonprofit environmental advocacy groups offered options. DNR staff began formulating a plan to restore the entire length of the Baraboo River to free-flowing conditions, removing all four remaining dams. To alleviate costs, DNR helped secure state funds through the Municipal Dam Repair and Removal Program, and federal funds through the Federal Aid in Sport Fish Restoration program. The nonprofit Sand County Foundation purchased the La Valle Dam from its private owners for about $100,000 and allowed the state to remove that dam with federal Sport Fish Restoration funds.

In each case, dam removal was far less costly than dam repair: at the Oak Street Dam, repair estimates ran over $300,000 while actual removal costs were only $30,000 (of which $23,000 would be provided by the River Alliance of Wisconsin via a grant from the National Fish and Wildlife Foundation). Similar savings were realized for the other two dams.

Despite the financial incentives, stiff opposition to the removal plan arose in Baraboo and the Town of La Valle, where the dams were viewed as aesthetic, historic community fixtures that provided a sense of identity.

One holdout in Baraboo was Circus World Museum, which owned property on both sides of the river along the millpond created by the Waterworks Dam. The museum's mission to preserve the look and feel of the historic grounds of the Ringling Brothers Circus put it in an odd bind — costs to repair



Fish sampling brings a wide mix of species and sizes. On the Baraboo, fish finds include: *(left to right)* emerald shiners, big walleye (shocked between Rock Springs and La Valle) and bigmouth buffalo.

the old dam were prohibitive, yet the structure was clearly unstable. A UW-Madison/Purdue University survey revealed the community's greatest concerns with dam removal were the loss of wildlife habitat (42 percent), the fate of the millpond (16 percent), aesthetics (14 percent), and other historical/community values (12 percent).

Concerns about the river's aquatic life were only raised by 11 percent of the respondents. Even anglers had mixed feelings: Some had fished the millponds since childhood and did not want to lose their fishing holes. Other anglers were excited about the potential return of spawning runs of game fish like walleye, sauger and lake sturgeon. Groups including the Baraboo River Canoe Club supported restoring the free-flowing river to enhance recreation.

The aesthetic and historical values of the dams were preserved wherever possible. For example, the La Valle mill and turbines were preserved and eventually sold to a local businessman who started an antiques store and gave tours of the old mill facilities. The Linen Mill building was preserved and is used as a canoe livery to provide daily trips along the Baraboo Rapids. La Valle residents didn't want to lose the peaceful feel of a millpond; their concerns were helped a bit when an artificial wetland was constructed in the floodplain adjacent to the river.

The research flows forward

As historical preservation and financial issues were resolved, the dam removal plans proceeded, and so did our fisheries research.

A year before removals began, we started surveying fish communities above and below each dam to determine which species inhabited the millponds and tailwaters. We also collected fish throughout the river to determine population ranges for each species. We measured habitat features such as current speed, depth and bottom type (sand, gravel, rock, sediment). We used electrofishing to stun fish, then quickly net, identify, count, weigh and measure them before releasing them back to the water.

Removal work started in April 1998 with the Waterworks Dam, followed by the Oak Street Dam in January 2000, and the La Valle Dam in January 2001. According to the River Alliance of Wisconsin, after the last of the four dams — the Linen Mill Dam — was removed in the fall of 2001, the Baraboo became the longest river in North America (120 miles) entirely restored through dam removal.

Fish and environmental sampling continued through fall of 2003. Fish proved to be useful indicators of changing environmental quality and river health. If pollution-tolerant species like carp were abundant and few other species were present in a section, then we knew the environmental quality was probably poor. Where sensitive species like smallmouth bass were abundant, we knew that the environment and the fish community were getting healthier. We also looked at the total number of species collected at any given location. Generally speaking, the more species inhabiting a river section, the better its environmental quality.

Other interesting patterns emerged. Habitat in the former impoundments quickly became more river-like. Faster moving currents scoured sediments and exposed rocky areas along the Baraboo Rapids within a year. Within two years we saw dramatic changes in the fish community. At the former Waterworks Dam site, 26 fish species now inhabit water that formerly held 11 species. Before the dam was removed, pollution-tolerant species made up about 45 percent of the fish community; now they comprise only 2–10 percent of the fish found here. Results were similar at the Linen Mill and Oak Street dams, but not at La Valle about 50 miles upstream. Even in its natural state, the river is much smaller and slower at La Valle; it's also subject to eroding sediments from intensive agriculture in the area.

After free-flowing conditions were restored, eight of 16 migratory species like sauger, spotted sucker, and walleye have moved upstream. Most remarkably, the emerald shiner, a small minnow species, repopulated the river up to 75 miles upstream of the lower dam site within the first year. Anglers are pleased that walleye are clearly moving upstream. Before the Linen Mill Dam was removed, we did not collect a single walleye from the Baraboo Rapids area. A year after the dam was taken out, we netted three walleye, and last year netted 15, a substantial increase. Knowledgeable anglers are now beginning to catch a few walleye from the rapids during the spring run.

Past researchers looking at dam removals anticipated problems with downstream sedimentation once dams were removed, but our findings did not support these concerns. Species diversity dipped a bit in the tailwaters, but within two years these fish communities recovered. Our research shows the negative downstream effects of removing small, lowhead dams are short-lived. However, this may not hold true for larger dams that have retained more sediment.

Matt Catalano is a DNR fisheries biologist and researcher stationed in Monona.

Nature's dry bouquets

Gathering and preserving wildflowers and grasses is festive and easy.

Barbara Estabrook

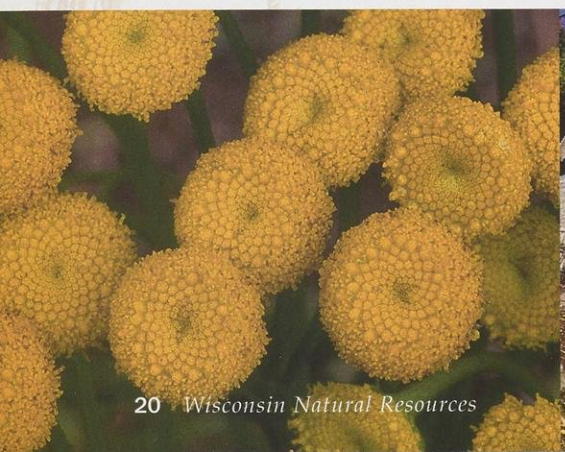
After a few trips to the basement, I thought the wildflowers and grasses I had been gathering were still growing! The piles were spreading from the corner into the walking area and I had to carefully step over and around the cattails lying on newspaper to reach the freezer. I had only intended to select and cut enough for a table centerpiece, but during several weeks of collecting, I had gathered more than I needed. I concluded it was time to learn how to dry and preserve natural bouquets.

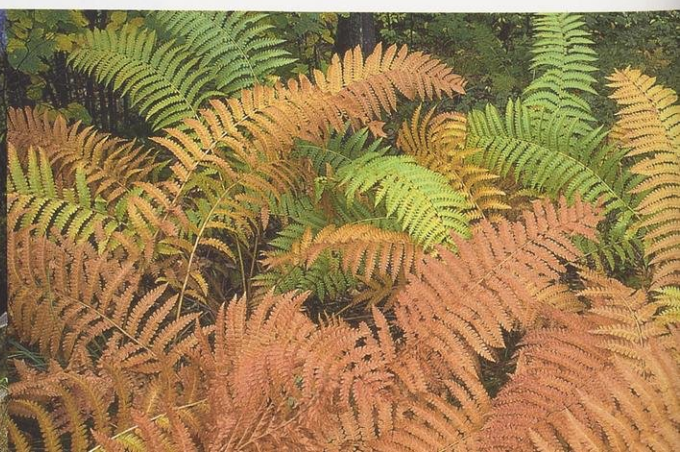
I began by looking through library books on drying and preserving flowers. There are several methods, and after reading about sand drying, drying with desiccants like silica or borax, waxing, glycerin and air-drying; I decided the glycerin and air-drying methods sounded interesting.

The moist approach

Glycerin is a moisturizer available from pharmacies or health stores. To preserve flowers, you mix one part glycerin with two parts hot water and pour the warm liquid two inches deep into a container that can hold the stems upright. Then you crush the bottom inch or two of the plant stems with a hammer and place the stem into the mixture. In three to five days the solution will absorb into

(below left, middle and right) **Know what you are picking. Common tansy is pretty, but can be invasive in northern Wisconsin. Miscanthus grasses grow beautiful plumes, but the tall look-alike phragmites crowds out native vegetation. Also learn the native woodland ferns.**
(right) **Author Barbara Estabrook collects "swamp cotton," also called cotton grass *(Eriophorum)*.**





the stem and throughout the plant. To test if it is done and enough of the preservative has been absorbed, remove one stem and let it air-dry.

When plants are done, the stems that soaked in the liquid will feel softer and look slightly darker than the air-dried specimens. Save the remaining glycerin and water solution as you can reuse it several times. Trim off the crushed parts of the stems and hang the plants upside-down to dry in a dark, but well ventilated area with low humidity in your basement, attic, storage room or garage. You can hang the plants with tied string, paper clips, thread or wire. Drying time should take 10 days to three weeks depending on the type of plant and humidity.

The dry route

The air-drying method appealed to me because it sounded easy for a beginner. For this method, in use since colonial days, simply spread out the plants on a dry surface in a dark, warm place so there is plenty of air circulating around each one. Over time, the air evaporates moisture from the wildflowers, grasses and other plants. All you need to get started are a few inexpensive things: scissors, rubber bands, twine and some floral preservative. Of course, you will also need some temporary containers to hold the wild foliage during collection and drying. Old vases you've been saving will now come in handy. Truthfully, coffee cans and quart glass jars work well too.

What to avoid, what to pick and when to pick

I make a point of only cutting wildflowers, weeds and grasses that I can clearly identify. If you have questions about identifying plants that might be protected or invasive, get a field guide and contact your local Department of Natural Resources office to request a list of protected plant species.

You should also learn to recognize the invasive species and potentially invasive species that may look pretty, but can be readily spread from one area to another by flower pickers. For instance both species of teasels *(Dipasacus)* found in Wisconsin are non-native, aggressive and unfortunately very attractive. They are primarily spread from one area to another in dried flower arrangements. One way to become a more educated flower grower, buyer and picker is to stay in touch with the Invasive Plants Association of Wisconsin. The group maintains a website, http://ipaw.org, that provides updates on the appearance and the range of invasive plant species found in the state. Further, they can help you distinguish the native, indigenous flowers from other beauties that also happen to be non-native "invasive," "potentially invasive," or are considered "sometimes invasive."

You can start cutting and gathering in the spring and summer. Cattails, for instance should be harvested in late summer before the heads burst open. I find dry afternoons better for cutting and gathering plants as you want to avoid the moisture of morning dew or residual rain. Wildflowers and grasses will be plentiful in the country. Many beautiful weeds, wildflowers, grasses and grains grow along country roadsides. Just make sure you are cutting inside rights-of-way and be careful not to trespass on private lands. Always avoid busy highways and heavy traffic for safety reasons. I admit that when I'm traveling, the temptation to stop along the highway is hard to resist when I see an unusually shaped wildflower or a clump of grass blowing in the wind. But remain cautious, alert and safety conscious at all times.

City dwellers may find they are welcome to gather flowers at county or state parks, but never assume you can pick any plants without first asking park personnel. Don't assume that every open space is free for the picking.

Don't overlook lowland areas. I often feel adventurous and investigate the swamps and bogs wearing knee-high rubber boots. I keep two small thin boards in the trunk of our car for stepping gingerly along peat moss and wet areas. Again, make sure you are in an area where you can pick just a few plants legally, know what you are picking and remember that many of these fragile species grow slowly, so don't over pick.

DAVID CHESEMORE

Teasel looks great, but it is invasive and its seeds are often spread in dry bouquets.

My favorite bog weed is a white, puffy cotton-like ball suspended on a delicate branch that our elderly neighbor calls "swamp cotton." It is one of the six species of *Eriophorum* (cotton grass) that grow in Wisconsin. I think the name is appropriate. It remains puffy even after spraying and keeps for years. When mixed in with swamp holly *(Ilex verticillata)*, it makes a beautiful holiday decoration. The holly bush is four to five feet tall and you won't miss its plentiful bright red berries, it is one of two native hollies in Wisconsin. To preserve this plant, I learned to use heavy spray starch to keep the berries from dropping off once drying begins. It worked and the berries did not discolor.

In my opinion, there's no better season than fall when the landscape takes on a new look and the foliage colors change to hues of yellow, orange and brown. I like to walk in the woods with family and friends. Collecting colorful wildflowers and grasses just adds to the day. My young granddaughter and I kick and pick leaves together and we both love it! She is also my little helper when I gather and cut. It is a nice outing for both of us.

By mid-October, many of the colorful

DON BLEGEN

Wild parsnip looks a bit like a yellow Queen Anne's lace, but watch out for this flowering parsnip, it bites back! Its juices cause an intense, blistering sunburn.

weeds and grasses have already dried naturally. Some can be cut, sprayed and arranged in upright containers immediately. Large ferns begin to change from green to gorgeous shades of yellows and browns in fall. Once cut, lay them flat between brown paper grocery bags that you have cut open to their full length. Use heavy books to weigh down the ferns and in about a week, the ferns will be flat and dry without being too brittle.

Speaking of drying, let me offer tips learned from trial and error. When drying bundles of wildflowers, strip off their lower leaves and bind the stems together with a rubber band, which allows for shrinkage as the bundle dries. Attach twine to the rubber bands and hang the plants upside-down in a dry, dark room. In about three weeks, they should be dried and ready to spray. Small broken branches of oak leaves can also be bundled and dried in this way. They make perfect fillers in larger arrangements.

I also discovered by chance that placing wildflowers and other plants near our basement dehumidifier shortened the drying process considerably. I now place my collections near this "drying machine" when it is operating.

Before arranging the dried plants, spray them outdoors with a floral preservative to fend off rot and seal the dried plants from absorbing moisture on damp days. I discovered that inexpensive hair spray works as well as a fixative as commercial floral preservatives, but be careful not to display your arrangements near fire since hair spray is flammable. I purchase the hair spray in pump bottles to avoid aerosol cans and I put newspaper behind the plants so all the excess spray is absorbed.

Displaying the finished product

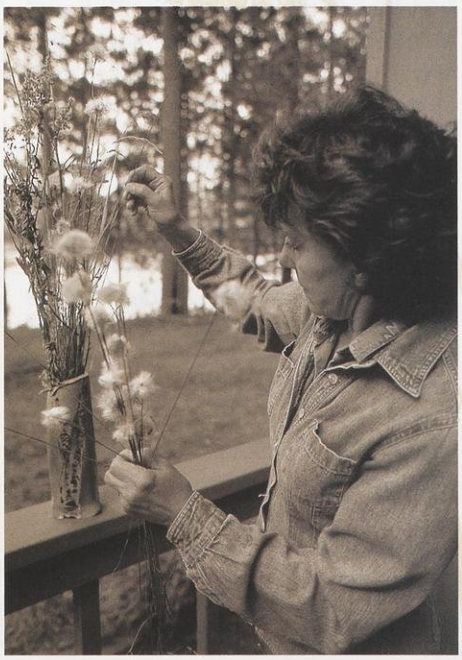
Sprays of wildflowers and grasses look festive hung on doors and secured by decorative ribbon or placed in baskets on porches, stairways and entrances to your home. I use branches with colored leaves and straw-colored grasses and grains to surround fall pumpkins, especially around Thanksgiving. A straw hat decorated with a few dried weeds or wildflowers is equally attractive to wear or hang as a decorative piece.

So choose a method of drying and preserving wild plants that seems easy for you and try it. You can bring them indoors and enjoy them year-round for many seasons.

Barbara Estabrook writes from Rhinelander.

Identify plants before you pick them to avoid rare or invasive species. Follow the author's simple instructions and you can craft beautiful, long-lasting arrangements.

ROBERT QUEEN



ROBERT QUEEN

Searching for Alder Fork

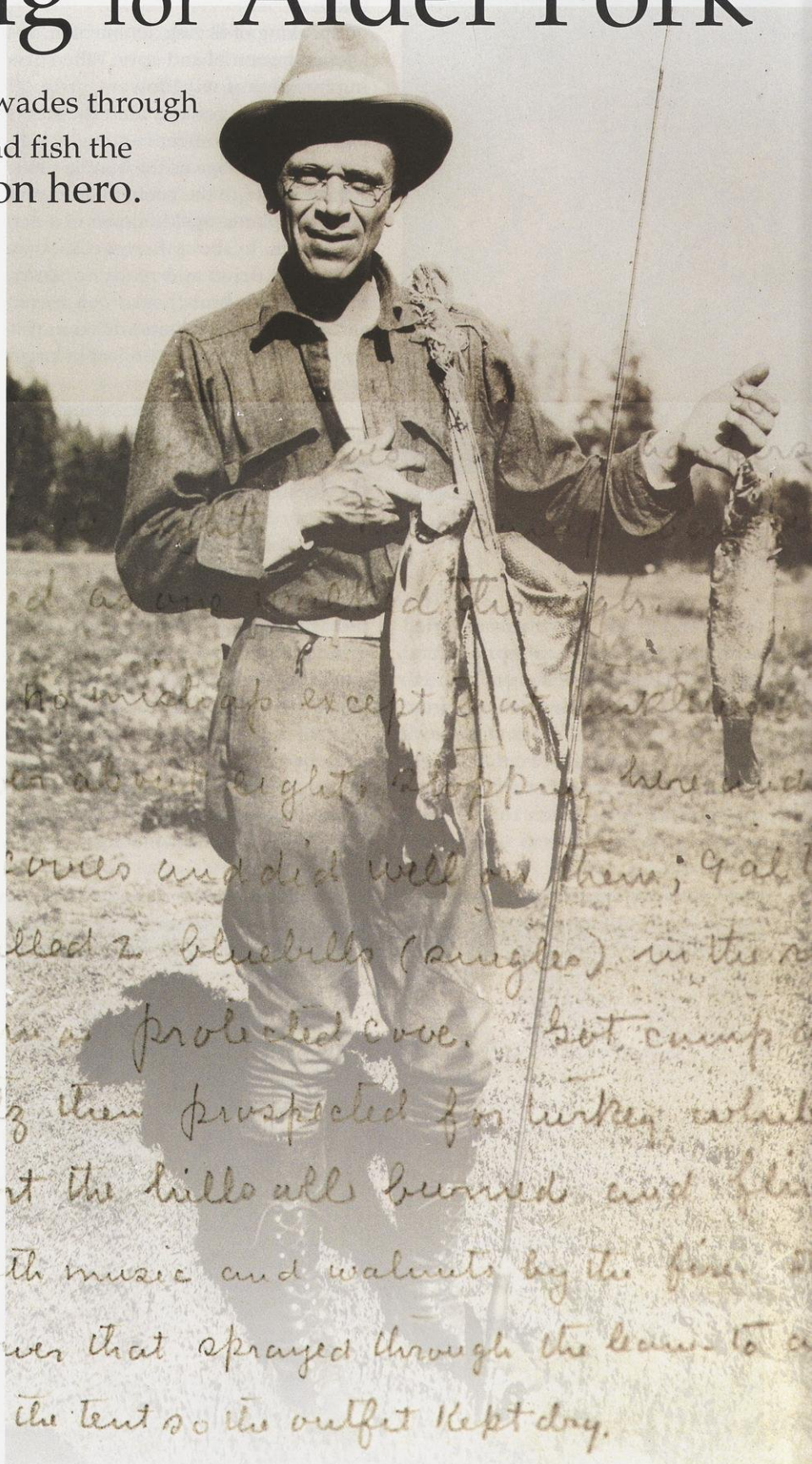
A determined fly-fisher wades through time and place to find and fish the stream of his conservation hero.

Harry L. Peterson

"Knowledge of the whereabouts of good hunting or fishing is a very personal form of property," Aldo Leopold wrote. "It is like rod, dog, or gun: a thing to be loaned or given as a personal courtesy." Accordingly, though Leopold visited a particular northern Wisconsin trout stream at least twice and wrote about his trip in the summer of 1931, the essay was first published almost 20 years later, in "A Sand County Almanac."

Leopold is best remembered for his writings and devotion to developing a new understanding of our relationship with the land. Fewer people know that he also enjoyed writing about hunting and fishing, sports he took up in childhood and continued throughout his life.

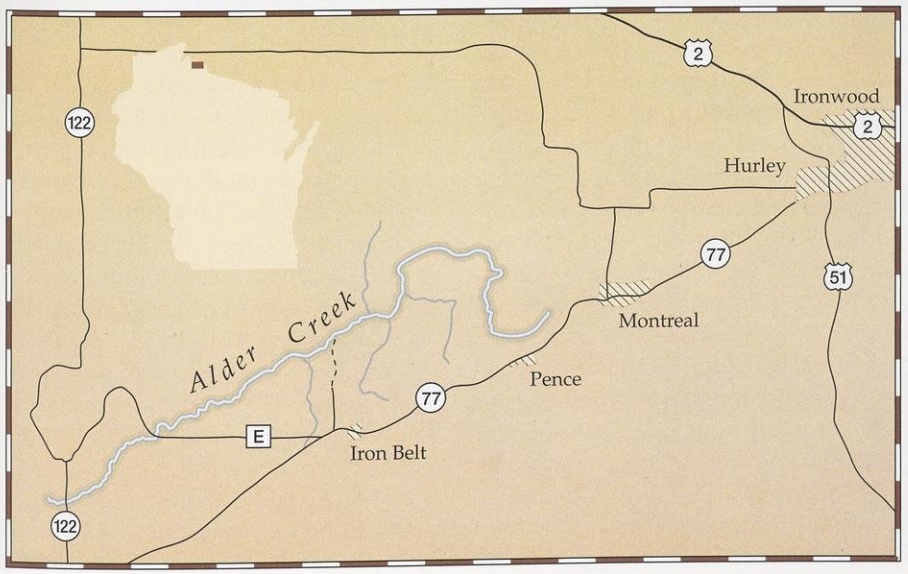
The trout stream Leopold called "Alder Fork" in his writings is thought to be Alder Creek, a small, brushy, spring creek in Iron County, near Hurley, close to the very small villages of Montreal and Iron Belt. A photograph of it is included in Michael Sewell's recent pictorial version of "A Sand County Almanac." It wasn't a great stream when Leopold fished it. It isn't mentioned in recent and numerous books and articles about Wisconsin trout fishing. But Leopold had fished it. He is on a very short list of my heroes, and he was a fly-fisherman, as am I. I wanted to fish that same stream and cast to a few of the descendants of the trout Leopold caught.



Angler, hunter and conservationist Aldo Leopold with trout along the Flathead River, Oregon, 1926. Professor Leopold kept daily journals of his days afield as in this excerpt from a hunting trip. He wrote about The Alder Fork in the summer of 1931. The essay was later incorporated in his seminal work, "A Sand County Almanac."

The quest was for a colorful prize: brook trout from a cold, clear northern stream. *(below)* Alder Creek environs in Iron County.

DON BLEGEN



MOONLIT INK

Lessons on the journey

Pat Madden, my friend of 30 years and now a judge in Iron County, said he would help me check out the stream and give me a bed. So, on a humid August day, over 70 years after Aldo Leopold's trip, I drove to Hurley. On the way from Madison I fished beautiful Lawrence Creek, near Westfield. While the fish were small, they were the prize of Wisconsin's spring creeks, brook trout: fish so colorful they remind me of exotic African or South American birds.

I wanted to check out a couple of potential access places along the stream on the way to Pat's home in Montreal. Alder Creek follows State Highway 77 traveling southwest of town. On County E, below Iron Belt, the stream was dark, impenetrable and still, not a good sign. I drove upstream a couple of miles to Kimball Road only to find more dark, quiet water. I was losing light, and finally an hour before dark, I had a chance for one more look on a little stub of a road off County E. The end of that road had been a bridge that was destroyed apparently by an ice dam. A sign near the former bridge said, quite unnecessarily, "No Bridge." The 200-yard walk to the water was down an unused grass road, soggy with standing water from a recent rain. Frogs of several types were everywhere.

The stream here was wide, not moving, dammed by beaver, and looked deep. There were tiny insects in the air that I could not identify. Numerous small dimples appeared at the area where the bridge had been. I had brought my fly rod. I added a long section of thin, 6X tippet to my leader and a size 18 hair wing coachman, a favorite fly for brook trout. The first cast toward rising fish, brought an immediate strike. The fish was obviously small, but brookies are typically small. After a few seconds of struggle, the fish came to the surface near my feet. A six-inch chub!

Dimples continued to appear on the stream, but no longer looked so interesting. I thought I had better check the water temperature. Trout require clean, cool water with temperatures in the 50s and 60s. The thin red line on my thermometer kept slowly creeping upward

HARRY L. PETERSON

End of the road off of County E.

until it reached 82 degrees, way too hot for trout. It was getting dark, and the heat and humidity had not relented. As I returned to the car, dozens of frogs splashed along side. It was late, but not too dark to take some pictures of frogs that ignored a camera lens only a foot or two away.

Aldo Leopold had a similar experience over 70 years ago on Alder Creek. He wrote, "We found the main stream so low that the teeter-snipe pattered about in what last year were trout riffles, and so warm that we could duck in its deepest pool without a shout. Even after our cooling swim, waders felt like hot tarpaper in the sun.

"The evening's fishing proved as disappointing as its auguries. We asked that stream for trout and it gave us a chub...But this, we now remembered was a stream of parts. High up near the headwaters we had once seen a fork, narrow, deep and fed by cold springs which gurgled out under its close-hemmed walls of alder. What would a self-respecting trout do in such weather? Just what we did: go up."

Trying our luck upstream

My friend Pat introduced me to Charlie Zinsmaster, the Iron County Forester. Charlie suggested that we try to get access to Alder Creek near the entry of Cemetery Creek, a spring-fed tributary, further upstream. On my county map, he carefully showed the short, dead end road to take out of Iron Belt. Then you have to walk about a mile, he said, through the cross-country ski trail.

Shortly after light the next morning, Pat and I headed down the little grassy road. When it came to an end I put on my waders, got my camera and again, optimistically, rigged up my rod. We began to walk down the cross-country ski and snowmobile trail that, by late summer, was crowded with weeds and alders. As we walked, the trail got smaller and the brush got thicker, until it completely disappeared. Pat and I looked around and wondered exactly where we had come from and whether we could find our way back. We decided that Pat would stay where he was and I would keep going. Pat served as my geographic positioning system. I trudged on into the underbrush without a hint of a trail. The alders got thicker and water began to appear. Every few steps brought the possibility of sinking to my knees in muck and water, and sometimes I did. Pat said later he thought I might be in trouble when I yelled, "Oh, oh!" but I struggled out of knee-deep muck and kept going. The elevation seemed lower every 50 feet or so. I could see a tree line about a half-mile away and I knew there had to be a stream between me and that tree line, but I couldn't reach it.

Finally, I gave up and turned back. I kept yelling to Pat so he could call back to let me know where he was. I finally got back to him, drenched with sweat and covered with water, my camera so fogged that my pictures were worthless. After a few false starts, we found our way back to the car.

My paper search

When I returned to Madison I obtained written Alder Creek reports from Jeffrey Roth, the DNR fisheries staff member responsible for that part of Wisconsin. I learned that I might have found trout in Alder Creek had I been able to get to the upper reaches, but fish would have surely been even fewer and smaller than during Aldo Leopold's time. Alder Creek has been changing since then and continues to change. Let me summarize the findings in a short space:

When Leopold returned to fish Alder Creek in 1931, he knew that he'd have to go upstream to find a tributary and a

spring with cold, clean water, where trout can live.

The 1971 records show that DNR found 17 brook trout over 10½ inches in the creek, one of them 17½ inches. Even so, the record from 30 years ago reported problems: "A survey conducted in 1966 on Cemetery Creek reported a brook trout population of 116 fish per acre. However, during the recent survey only two trout were captured. This small number of trout being captured may possibly be a reflection of the dense alder covered stream bank and the fact that raw sewage from the Village of Iron Belt has been allowed to enter this stream."

The raw sewage discharge was eliminated in the early 1970s when the Village of Iron Belt installed a sewage treatment plant. However, the report concludes: "This stream, like many of its tributaries, has been, and is presently being seriously affected by the presence of numerous beaver dams. These dams, both active and inactive, have created a series of relatively small, shallow ponds with little velocity and flow, which has resulted in an increase of water temperatures and an invasion of aquatic plants. A general lack of trout spawning habitat in the main branch of Alder Creek has also resulted due to extensive siltation."

The recommendation? "All active and inactive beaver dams should be removed from these streams and an effort made to keep these waters free of beaver activity. Beaver control, along with new sewage treatment facilities at Iron Belt should improve the water quality of this stream system with an associated improvement in trout habitat and spawning area. Alder Creek could then be managed as an excellent trout stream."

In 1974, researchers found that Alder Creek and its tributaries continued to be brook trout water, and that "...many beaver dams were no longer functional and the trout had access to move throughout much more of the stream."

However, by 1983 DNR staff reported, "Eleven beaver dams were removed from a four-mile section prior to the survey and water temperatures were monitored at several locations during July and August. Temperatures as high as 86 degrees were recorded."

That study concluded, "...No young-of-the-year trout were observed, indicating spawning must take place elsewhere. During high water temperatures the trout undoubtedly seek out springs and tributaries with cooler water." It described access as "poor" from a walk-in trail over private land or a walk-in over Iron County forestland.

The author finds more frogs than fish where Alder Creek slowed down and formed shallow, slow-moving ponds thanks to extensive damming by beavers.

HARRY L. PETERSON

HARRY L. PETERSON

What I netted

Roderick Haig-Brown, a fishing writer and federal judge in British Columbia, wrote that we never fish the same river twice. Every year the water is different. Rivers vary from season to season, even day to day. Since Aldo Leopold fished it over 70 years ago, Alder Creek has gone from being a spring creek with natural reproduction of many, relatively large brook trout to a stream that serves as a high quality habitat for beaver with little capacity to support trout.

What are we to make of this change? The creek can help us think about some important questions. We can begin with trout fishers. We lobby, through Trout Unlimited and other organizations to increase the annual DNR Trout Stamp fee so that, among other activities, the Department of Natural Resources can buy more dynamite and afford more staff to blow up beaver dams and restore what we believe to be the "natural" flow of these streams. Beaver, after all, no longer have as many trappers to keep the population in check. But what do these "improvements" mean for other animals that live in the forests of Iron County and the Northwoods? My visit confirmed that frogs thrive in slow moving water, and they were more numerous than I had ever seen anywhere. Great blue herons thrive on frogs. To the extent that I can divine the mental state of frogs, I must report that they were happy. Frogs are born, grow up,

live, and sing in large numbers. They had lots of company.

What would Aldo Leopold say about his Alder Creek? Many of his writings about specific times and places focused on underlying principles that applied beyond those times and places. One of his articles published in 1940 identified species whose numbers had been greatly reduced or eliminated in Wisconsin because of trapping, settlement, human predation and fires. He regretted the loss of the "evicted" marten, fisher and wolverine "but for overtrapping and forest fires," as well as reduced numbers of geese, ducks, swans, cranes and shorebirds due to hunting and loss of marshlands.

Some of these species are now thriving. Martens have been reintroduced in Northern Wisconsin and their numbers are stable. Fishers have been reintroduced to provide some control of porcupine that have damaged trees in the northern forests. The number of fishers has increased, and their range is expanding into Central Wisconsin. Geese are now so numerous that many people consider them a nuisance, and sandhill cranes, greatly diminished in Leopold's time, now number in the thousands. Since their reintroduction in the 1970s, wild turkeys are thriving and number several hundred thousand. Even whooping cranes, almost extinct, are being carefully nurtured so that they have increased from fewer than 20 to over 400 in the United States.

Leopold does not discuss beaver in his article. Beaver were greatly reduced by trapping and by 1900 were almost eliminated in Wisconsin. Beginning in 1901, they were protected and are now thriving. Wolves have returned to Wisconsin and number about 350.

Much of the degradation of our environment and our treatment of the land that Leopold decried has continued. However, in northern Wisconsin I believe he would find reasons to be encouraged.

The intricate interdependence among people, wildlife and the land continues. "Conservation," Leopold wrote, "viewed in its entirety, is the slow and laborious unfolding of a new relationship between people and land. Each seemingly trivial [event]...is a part of this unfolding process. Each marks the birth or death of an aspiration, the beginning or the end of an experience, a loss or a gain in the vitality of that great organism: Wisconsin."

We know the position that Leopold took when the deer population in northern Wisconsin became too large to be supported by the available winter browse. As a member of what is now the Natural Resources Board, he argued unsuccessfully for people to intervene, decrease the herd by increasing the number of deer that hunters could kill. With some degree of confidence, we can declare Leopold would have supported removing beaver dams, as is practiced today, in areas where beaver activity degrades brook trout stream habitat. His goal would not have been the elimination, but some control of beaver. As he wrote in "A Sand County Almanac," "The first job of the intelligent tinkerer is to save all the pieces."

Leopold enjoyed his fishing trip, as did I, though I caught but a chub. He concluded his essay: "What was big was not the trout, but the chance. What was full was not my creel, but my memory; full of the stuff that fishermen's dreams are made of."

The next time I head north to visit my friend Pat, I'll be sure to go early in the spring when the hiking is easier, and maybe I'll find that cold water where there just might still be some trout.

Harry L. Peterson has lived in Wisconsin for many years and writes from Middleton, Wis. He is president emeritus of Western State College of Colorado. In the winter he ties flies and reads about Leopold. In all other seasons he fishes trout in Wisconsin and other beautiful places.

Beaver have their own ideas about ideal stream conditions. Moderating beaver work in trout streams remains a balancing act and a tussle.

SCOTT NIELSEN

A soldier fly forages on a goldenrod.
(inset) Gorgeous, bright color from a blooming cardinal flower.

continued from page 2

Each delicate cardinal flower *(Lobelia cardinalis)* is a tube that points upward. The end of the tube settles into five petal-like divisions — two point up and three point down. The "petals" seem to offer a stable platform for insects to alight and walk into the flower, but they can't reach the reproductive structures located near the base that's full of nectar. This flower is tailor-made for pollination by hummingbirds and day-flying moths. Each flower matures with a male stage, when light yellow pollen rests on the tip of the tube, and a female stage, when a y-shaped stigma projects beyond the tube tip. When a hummingbird hovers and drinks from the nectar-containing tube, the bird touches the pollen with its forehead, then transfers it to the sticky stigma of other flowers as it feeds, fertilizing the flowers.

As they mature, pollinated flowers form dry capsules. When it's time to release seeds, the capsules split open. Two compartments each contain hundreds of minute orange-brown seeds. Those seeds may fall on fertile ground and germinate or drift on water to colonize a new area on some distant shore.

Inspecting cardinal flower is worth a few moments of your time, though you may get wet feet taking a closer look. If we could only hover like the hummer for a bird's-eye view we could enjoy the dense cluster of nectar-laden, cardinal red flowers in the hot, yellow month of August.

Anita Carpenter puts up with wet feet treading the fields and streamsides in all seasons.

READERS *write*

COMMENT ON A STORY?

Send your letters to Readers Write, WNR magazine, P.O. Box 7921, Madison, WI 53707 or e-mail letters to david.sperling@dnr.state.wi.us

SQUIRRELS AT FEEDERS

I would like to know how to get squirrels out of a bird feeder. I put in birdseed and the squirrels are eating it up. What do I do about it? Shoot them? Trap them? Put something in the seed to make the squirrels sick? Could you come down to my house on Friday morning about 10:15 a.m. and take a look?

Joe Dobrzynski
Whitewater

We had a cute and lengthy letter from this reader concerned about squirrels. Of course there are several strategies to dissuade squirrels at feeders, none of which involve lethal remedies. Poisoning tree squirrels is illegal and a bad idea as something might eat that carrion and get sick. You can buy "squirrel proof" feeders that close down seed access when a weighty squirrel tries to roost. You can buy baffles and shields that make it difficult for squirrels to reach seed. You can position feeders out of reach from trees, wires, porches and other access points that allow for squirrels to reach feeders. You can supply the squirrels with a different food source that they prefer to birdseed. You can also get publications from UW-Extension that explain habits and control strategies for both tree squirrels and ground squirrels.

SLITHERING ACTOR

Last year I saw an unusual snake in our yard. I ordered the DNR pamphlet, "Snakes of Wisconsin," but there isn't anything like this snake described. Our neighbor called it a "blow snake."

Is it native to Douglas County and is it nonpoisonous?

Carolyn Humeston
Wascott

Our herpetologist tells me that the snake photo you forwarded is a pale-colored specimen of the native, nonpoisonous Eastern Hognose Snake (Heterodon platyrhinos). *Your neighbor hit the identification right on the head. The hognose is commonly called the "blow snake" or the "puff adder." It is quite an actor and puts on a great show of bravado followed by an equally great show of playing dead.*

We carried a short feature on the hognose back in August 1996, "Hog-nosed ham." You can read it online at www.wnrmag.com/stories/1996/aug96/hog-nose.htm.

TRAIL IDEA

I think the best trail that never was is an abandoned railroad grade running from Wisconsin Rapids to Fond du Lac. The line, built in 1907 and operated by the Chicago Northwestern, was a secondary conduit for paper mill traffic, but also served agricultural interests as well as passenger trains until service was discontinued in 1954 and abandoned in 1977. As this was early in the Rails to Trails movement, little or no voice was raised to save this right-of-way or convert it to a linear park.

The 85-mile line connected the Wisconsin River Valley to Fond du Lac and crossed significant ditches, marshes, creeks and rivers including the Pine, White River Marsh and the Fox.

While the railroad is but a memory to most folks, the town layouts in Almond, Bancroft and Wild Rose still follow the contour of the railroad grade long removed. The abandonment of the railroad contributed to the general demise of many small towns, just as trail resuscitation could contribute to the social, cultural and economic potential in the affected towns.

Gary Pezewski
Amherst

We last looked at proposed segments for the statewide Trails Network in our August 2002 story "Hit the trails!"

We asked DNR State Trails Coordinator Brigit Brown what she could determine about plans for that particular segment. Here's the gist of what we learned:

Many portions of the corridor you mention are accounted for in the state trails plan, and some segments are already developed for recreation. This particular rail segment does not run directly from Fond du Lac to Rapids, but rather from Fond du Lac north to the northeast side of Lake Winnebago and then west to Rapids. Consequently, it is not considered as one rail line and that makes it trickier to piece together into a corridor. Part of that old railroad line running west into Wisconsin Rapids has already been incorporated into the Green Circle State Trail; it's identified as segment 58 in the state trails network plan (You can get a look at it on the Internet at: www.dnr.state.wi.us/org/land/parks/reports/trails/ner.html#58*). Segment 10 of the network plan (*www.dnr.state.wi.us/org/land/parks/reports/trails/ner.html#10*) also includes the line from Oshkosh to Fond du Lac as part of the existing Wiouwash State Trail. Other segments of the corridor you mention were claimed by adjacent private landowners when the rail line was abandoned. That means portions can't be "railbanked" where they could be converted to a rails-to-trails project until such time as the rail corridor is again needed for train service.*

We have made progress on converting segments near the ones you mentioned for recreation. The state purchased segments from Eden to West Bend (just south of Fond du Lac) and Scandinavia to Manawa (east of Rapids) last year. We also acquired several other rail segments across the state, as well as properties for the Ice Age and North Country State Trails, as described in the statewide network plan.

IS IT A RED SQUIRREL?

Your squirrel-hunting article in October prompted me to write. A reddish squirrel often visits my bird feeder. This past fall a new one appeared that is the same one (species) we saw at Copper Falls State Park earlier this year. I believe it is called a pine squirrel. He gathers pine cones, chews them down to the core and also appears to eat pine needles off our disposed of Christmas tree. He is the size of a large chipmunk with a red stripe down his back. Is this the correct name?

Marge Schildbach
Helenville

Your description sure sounds like a red squirrel (Tamiasciurus hudsonicus), *which is typically found in boreal forests or in coniferous patches farther south, such as in Jefferson County. The size and feeding habits match the patterns and habits of this diminutive, feisty squirrel.*

UPDATE

SUSTAINABLE MARKETING

The Rainforest Alliance and United States Agency for International Development (USAID) has made a three-year commitment to promote and increase the sale of sustainably-produced timber, bananas and coffee from Central America and Mexico. Projects in Mexico, Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica and Panama will concentrate on lands that lie on the outskirts of parks and in priority watersheds that act as biological corridors. More than 300,000 acres of forest and farmland are expected to be certified as sustainably managed. Over four million board feet of certified timber, 90 million boxes of certified bananas and 30,000 metric tons of sustainable coffee would be sold to U.S. markets through contracts.

FOLLOWING PERCH POPULATIONS

At its June meeting, the Natural Resources Board rejected a request from some conservation groups to shorten the closed season for yellow perch on southern Lake Michigan during June.

Carlton Alt, representing the Lake Michigan Yellow Perch Conservation Groups, told the board that Wisconsin's perch regulations were restrictive and that the current closure had no scientific basis.

Natural reproduction by yellow perch in Lake Michigan has been poor for over a decade, resulting in a dramatic decline in yellow perch abundance (as discussed in our February 2000 story "In search of perch" and our June 2003 feature "Adrift on the sea of life"). Regulations since the mid-1990's protected remaining yellow perch by closing commercial fishing and limiting sport fishing. Since 2002, Wisconsin has closed the sport fishing season for yellow perch on Lake Michigan during May and the first 15 days of June. The aim is to limit harvest of sexually mature females just prior to spawning.

Fisheries biologists are particularly monitoring the 1996 year class of perch that are approaching their reproductive prime. Hatches last year showed the first successful new year class of yellow perch in southern Lake Michigan in more than a decade. This winter, fisheries biologists will conduct population surveys in the lake and Green Bay to estimate how many of these young fish survived their first critical year adrift in the lake.

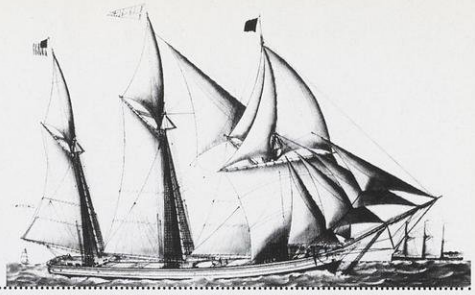
Brad Eggold, DNR Lake Michigan Southeast Region fisheries supervisor told the board that agency biologists recommended continuing the current closed seasons.

"The proposed change would allow for the harvest of prespawn yellow perch and be inconsistent with yellow perch biology in Lake Michigan," Eggold said.

The Natural Resources Board voted to reject the petition to shorten the closed season for Lake Michigan perch noting that the current plan was supported by conservationists at the 2002 Spring Hearings by 4,770 and opposed by only 608. The Great Lakes Study Committee of the Conservation Congress, Wisconsin Wildlife Federation, Wisconsin Federation of Great Lakes Sport Fishing Clubs, and the Lakeshore Fishermen Sports Club, LTD of Milwaukee continue to endorse these current rules.

The current rules are also supported by the lakewide Yellow Perch Task Group, a diverse group of agency biologists and scientists from all states bordering Lake Michigan.

Scuba do!



GREAT LAKES MARINE COLLECTION OF THE MILWAUKEE PUBLIC LIBRARY/WISCONSIN MARINE HISTORICAL SOCIETY

The urge to dive below the depths always has been part of human nature. In ancient Greece breath-hold divers plunged for sponges and engaged in sub-surface sea warfare. The first diving bell rang the fathoms in the year 1530. Each generation added innovations and refinements to the apparatus needed to keep a body alive underwater.

And then, in 1943, Jacques-Yves Cousteau and Emile Gagnan patented the Aqua Lung, a simple yet reliable combination of a valve regulator, hoses, a mouthpiece and a pair of compressed air tanks. Their unit breathed life into a new sport: Scuba diving.

Today where there's water, there are Self Contained Underwater Breathing Apparatus divers — even here in Wisconsin, where half the year the water is hard, and the rest of the time it is just plain cold. We lack the brilliant colors and rich marine life of warm tropical sea reefs, but experienced divers know fresh water preserves sunken hulls and artifacts much better than corrosive salt water. Shipwreck sites in Wisconsin's Great Lakes attract divers from around the world.

The **Wisconsin Historical Society** and the **University of Wisconsin Sea Grant Institute** invite everyone — divers and landlubbers alike — to explore the state's watery depths. The best place to begin your adventure is at www.wisconsinshipwrecks.org — also known as the "Ice Water Mansions" website. On the site, divers will find dive guides, maps, mooring locations, and important safety tips. Those preferring to stay dry can watch videos of wreck dives, tour Wisconsin's maritime trails, catch up on recent research and even post questions to WHS underwater archaeologists Russ and Cathy Green.

Lake Superior has six wrecks open to divers, and each has an extraordinary tale to tell. The schooner *Lucerne*, now resting at a depth of 25 feet on the northeast side of Long Island near Bayfield, had been fitted with heavy-duty sails to withstand Superior's notoriously foul weather. The ship encountered a vicious nor'easter in November 1886, and even the most tightly-woven canvas jibs were no match for the heavy snow squalls and gale-force winds. The *Lucerne's* 195-foot hull is intact and upright on the sand bottom; the cargo of iron ore is still visible around the wreck.

J. KRONSCHNABL

Divers can get guides to 16 Great Lakes wrecks. *(top)* The Lucerne afloat.

The *Noquebay* fell in 1905 not to snow and ice, but to fire. The schooner-barge, laden with a cargo of 600,000 board feet of hemlock, caught fire in the forward part of the ship while the crew was eating lunch in the aft deckhouse. No one noticed the flames until it was too late to fight the raging blaze. Today large sections of the *Noquebay's* wooden hull, scattered wreckage, a boiler and the ship's wheel can be found 10 feet down in Julian Bay, just off Stockton Island near Bayfield.

Lake Michigan is purportedly the less temperamental of the two lakes, yet 15 wrecks open for diving lie below its comparatively calm surface. There's the *Carrington*, grounded by fog in 1870 and now resting 32 to 57 feet down along the north side of Hat Island shoal in Green Bay. The steamer *Frank O'Connor*, one of the largest wooden ships ever built, met fate in the form of a fire from a discarded match in 1919; it is now 65 feet under about 2.6 miles north-northeast of Cana Island, off Door County. Three schooners — the *A.P. Nichols*, the *Forest* and the *J.E. Gilmore* — lie in a heap 15 to 40 feet down near the cement dock on Pilot Island in Door County, at the infamous Death's Door passage.

Wherever you choose to dive, please secure the proper permits, don't remove any artifacts, take care when anchoring your boat, and keep close track of current weather conditions and marine forecasts. And remember, this is Wisconsin…although summer surface water temperatures can reach 70°F underwater temperatures will still be in the 40s and 50s, so make sure you've got the proper diving gear.

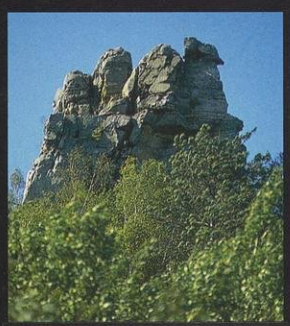
JOHN SEHR

J. KRONSCHNABL

Some wrecks remain in shallow waters. *(right)* Artifacts are protected, but are fun to see on land or sea.

Black River State Forest

As you explore the 180-foot butte at Castle Mounds State Natural Area, note contrasting forest communities on opposite sides of the mound. The protected northeast slope is forested with mixed pine compared to the dry southwest face wooded with jack pine and oak.



Growing. Giving. 2004 • YEAR OF WISCONSIN FORESTRY

SINCE 1904 • DNR FORESTRY • 100 YEARS

Jack pine is used for telephone poles and pulpwood. It grows on sandy soils, stimulated to reproduce quickly after wildfire. Learn more about state forest management and how we are celebrating the "Year of Wisconsin Forestry" at dnr.wi.gov/org/land/forestry.

Directions: From the intersection of State Highway 27 and U.S. Highway 12 on the south side of Black River Falls, go east on 12 0.7 miles to the entrance of Castle Mound Park, then west on the access road to the picnic area parking lot. *Wisconsin Atlas*: p. 50, grid B2.