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WISCONSIN NATURAL RESOURCES

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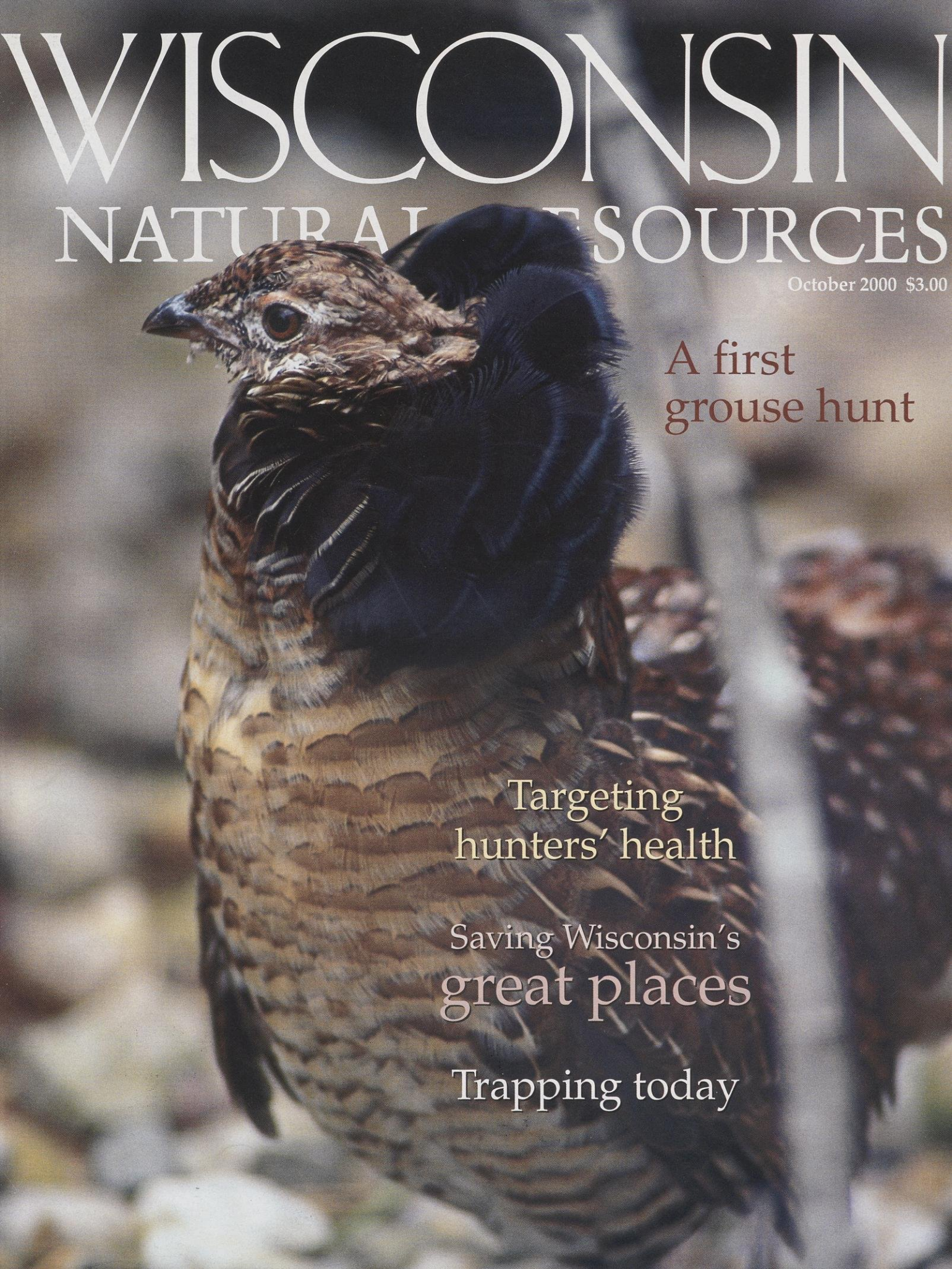

A first grouse hunt

Targeting hunters' health

Saving Wisconsin's great places

Trapping today

October winds

When breeze turns to bluster, seeds and birds take to the air.

Anita Carpenter

October is a month of quiet transition. The animals have raised their young. Winter preparations are finished; acorns have been buried, seeds stored, bodies fattened, fur coats thickened, and next year's buds produced. Many birds have already flown to warmer places and the winter finches have not yet arrived. The hibernators are retreating underground. Shorter days and frosty nights warn us of the approaching winter. In October, the meadows, lakes and skies are still. Then brisk, chilling northwest winds sweep in to stir things up, sending leaves, seeds, birds and imaginations soaring on windswept journeys.

October winds tug at trees and send a shower of fiery red and gold, subdued purple and brown leaves swirling to earth. In a gentle breeze each type of leaf has a characteristic falling style; some float, some free-fall, others twirl around the stem. In a strong wind, this individuality is lost as the leaves move in mini-whirlwinds through the air and along the ground. At rest, the colorful, many-shaped leaves quilt the ground with the artistry of a gifted craftsman.

continued on page 29

WISCONSIN NATURAL RESOURCES

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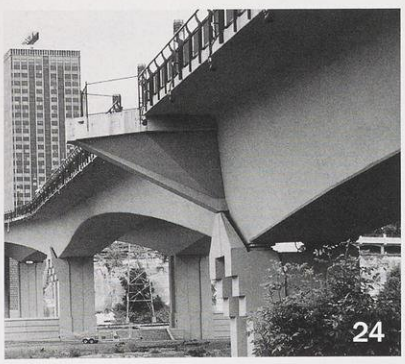
ROBERT A. KLEPPIN


ROBERT QUEEN


BLACK DIAMOND, INC.

FRONT COVER: Ruffed grouse are admirable quarry in fall. See p. 15.
RON TOEL, Duluth, GA

BACK COVER: Frog Lake and Pines State Natural Area, Iron County. For a map or more information, contact the State Natural Areas Program, DNR, Box 7921, Madison, WI 53707.
THOMAS A. MEYER, Mount Horeb, Wis.

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Saving Wisconsin's LAST GREAT PLACES

Communities and The Nature Conservancy work together to protect the state's natural heritage.

Cate Harrington

Wisconsin is blessed with an abundance of natural beauty and diversity: remnant prairies and oak savannas in southern Wisconsin, towering conifers and wild lakes in northern Wisconsin, the sand dunes and rocky shorelines of the Great Lakes, and much more.

John Steinbeck recognized this in his 1962 book, *Travels With Charley*, when he said, "I had never been to Wisconsin, but all my life I had heard about it…why then was I unprepared for the beauty of this region, or its variety of field and hill, forest, lake? I never saw a country that changed so rapidly, and because I had not expected it everything I saw brought a delight."

Wisconsin's landscape inspired some of our nation's great conservation leaders, including John Muir, Aldo Leopold and Gaylord Nelson. Forty years ago, it also inspired a small group of Wisconsin citizens to form the Wisconsin Chapter of The Nature Conservancy. United by their concern that particularly fine parcels of wild Wisconsin were disappearing to development and agriculture, 38 members of the Wisconsin Academy of Sciences, Arts and Letters met on May 6, 1960, and agreed to work together to protect Wisconsin's best remaining natural areas.

"Probably everybody had a different idea in mind [about why they should form a chapter of The Nature Conservancy in Wisconsin]," said Gene Roark, one of the chapter's founding members. "Somebody had a pet prairie or somebody had a woods that was full of trilliums in the spring. There were as many ideas as there were people to begin with. But I think there was an acknowledgement and a recognition that if something wasn't done, a lot of these favorite places

SCOTT W. MULCAHY

Caroline Lake Preserve contains a mix of undeveloped lakes, bogs, swamps and forest in Ashland County. This parcel and others near the Bad River headwaters protect water quality, habitat and stave off development. Forest management will also demonstrate how land can both provide income and preserve ecological values.

would disappear. Everybody there had had a favorite place disappear."

The chapter bought its first 40 acres at a small maple woods in Green County called Abraham's Woods. From there it began to acquire land throughout the state at places like the Baraboo Hills in Sauk and Columbia counties, Chiwaukee Prairie in Kenosha County, and Summerton Bog in Marquette County. The Conservancy's focus during its first 30 years was identifying and acquiring land that harbored rare species and plant communities. By the end of 1989, the organization and its supporters had protected 26,600 acres.

Protection on a landscape level

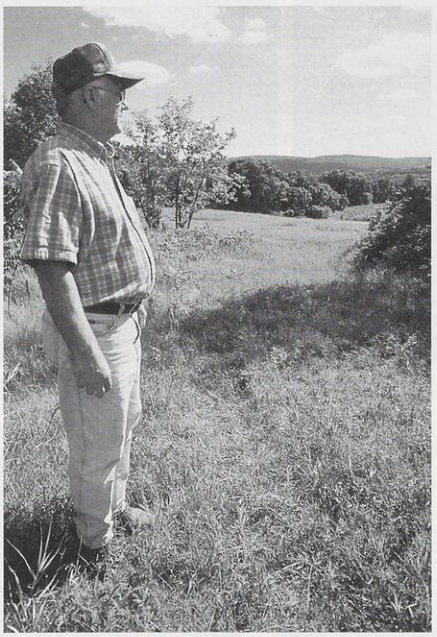
In the 1990s, The Nature Conservancy's (TNC) national office launched a new initiative called "Last Great Places: An Alliance for People and the Environment." By working with local communities to protect entire landscapes — not just isolated islands of biodiversity — rare species and their habitats would benefit, as would the ecosystems and natural processes like fire and flooding that keep them healthy.

The first area designated a Last Great Place in Wisconsin was the Baraboo Hills in Sauk and Columbia counties where TNC had purchased properties since the 1960s. A series of preserves — Baxter's Hollow, Hemlock Draw, Pine Hollow — already stretched across the south range of the hills under TNC management. Under the Last Great Places approach, the Conservancy began to focus on the entire 80,000-acre landscape covering the Baraboo quartzite.

Although the Baraboo Hills are located within a largely agricultural landscape, the forest covering the hills is the largest block of upland forest still standing in southern Wisconsin. It harbors more than 1,800 different kinds of plants and animals, and provides important habitat for songbirds, such as the hooded warbler, the Acadian flycatcher and the Canada warbler, which require large, unfragmented blocks of forest to breed and nest successfully. The Conservancy hopes to maintain the forest cover and expand it where possible.

Conservation on a landscape scale changed the way the Conservancy worked in places like the Baraboo Hills. The organization continued to buy land, but also recognized that conserving a large landscape meant working in partnership with private landowners, businesses, county and local governments, forestry professionals and others who live within and around the Baraboo Hills.

For instance, Ron Greenwood is a logger and the president of G.A. Greenwood Forest Products Inc. in Baraboo; his family has been in the logging business for three generations.



ROBERT QUEEN

Ron Greenwood, a logger, sold an easement on 160 acres of the Baraboo Hills where careful harvests will produce timber and habitat.
(Opposite top) **Natural Areas like Baxter's Hollow and large parcels provide the unbroken habitat that birds like the hooded warbler need to breed successfully.**
(Opposite below) **Happy Hill Glade contains a unique mix of prairie and woodland plants.**

Last year, he sold a conservation easement on 160 acres in the Baraboo Hills to The Nature Conservancy. Conservation easements legally bind the actions of present and future owners of the property. The land stays in private ownership and the landowner continues to enjoy using the property while the Conservancy shares responsibility for protecting the property's natural values.

Greenwood wants to see his land stay in forest cover. He's working on a land management plan with the Sauk County forester and TNC to protect the natural features of the property and still allow a sustainable timber harvest.

Greenwood says some of the best red oak in Wisconsin grows in the Baraboo Hills, but it's getting harder to find timber there these days. There's more competition from bigger mills up north and there's less forested land in the hills with each passing year, mainly due to development.

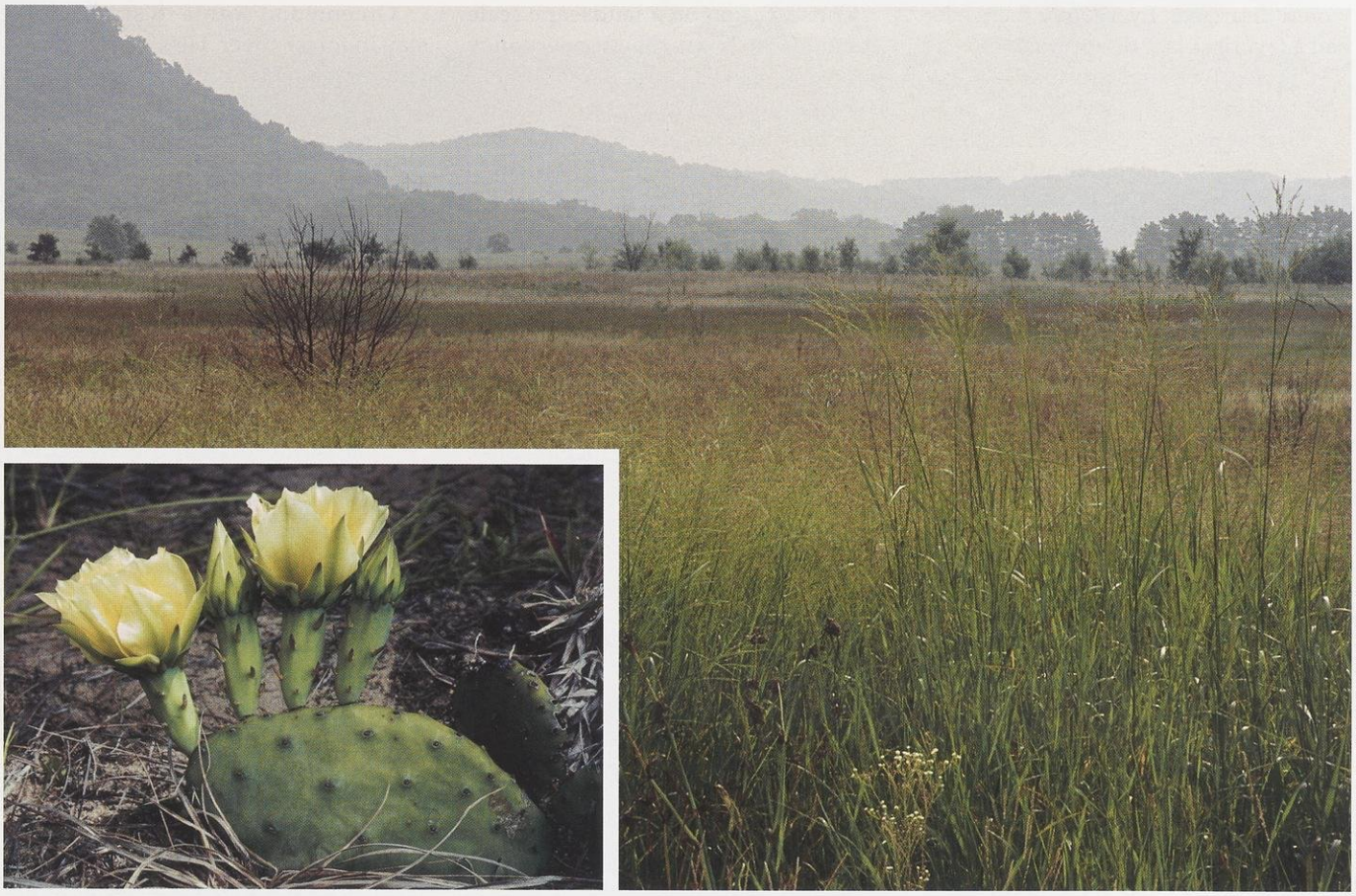
"The older folks in the area don't want to see their land developed," says Greenwood. "But it's hard with the higher taxes for them to hang onto it. That's why they're turning to The Nature Conservancy to put easements on the land."

The Conservancy and the Department of Natural Resources provide forest planning, management information and resources to private landowners who want to continue to own and manage forested land in the hills. The organization also provided technical assistance to Sauk County's 20/20 land use planning process. The plan, approved in February 1999, includes important new tools to manage growth in the county, including a program to purchase development rights.

Where the prairie thrives again

Just down the road from the Baraboo Hills, near Spring Green on the Wisconsin River, The Nature Conservancy is working with landowners to protect a very different ecosystem. Sometimes referred to as the "Wisconsin Desert," the Spring Green Preserve is one of the region's finest examples of a dry sand prairie. It grades into a dry lime prairie on steep dolomite cliffs. Inhabited by cacti, a few lizards and covered with sand dunes and prairie grasses, the preserve recalls the desert land of the American West. The preserve is also a State Natural Area.

The Spring Green Preserve harbors some of Wisconsin's rarest plant communities, including sand prairie, dry bluff prairie and black oak barrens. All of these communities, which once cov-



HAROLD E. MALDE *(INSET)* DAVE WESTOVER

A magnificent bluff rises from the grassy prairies at TNC's Spring Green Preserve. The valley holds a mix of desert-like dry plant communities including barrens and sand prairies. Prickly pear *(Opuntia)* cactus bloom here.

(right) Mr. and Mrs. Duane Paull sold TNC a prairie parcel that had been in family ownership for 100 years.

(far right) Work parties burn red cedar that invades and shades prairie plants.

COURTESY OF DUANE PAULL

ered thousands of acres in the state, are now almost completely gone. They continue to thrive at Spring Green Preserve thanks to the foresight and long-time stewardship of landowners like Duane Paull and his family.

Paull's family has owned land in the Spring Green area since 1890. His grandfather was a farmer and used the land for pasture until some time in the 1950s. Since then, it has been allowed to revert to prairie and is covered with prickly pear cactus and little bluestem grass.

Paull credits conservation of the area to his mother: "Being a farm girl, mother loved birds and nature, and she really loved that bluff." When faculty at the University of Wisconsin-Madison contacted Mrs. Paull about her land at Spring Green in the 1960s, she allowed them to do a biological study and inventory the bluff prairie vegetation.

In the 1980s, the Conservancy contacted Duane Paull and his sister, Edna Davies, who had inherited the property from their mother, about buying the land. The family wasn't interested in selling but agreed to enter into a management agreement with the Conservancy. Today TNC owns and manages the prairie to preserve its natural features.

Since 1983 the Conservancy and DNR's Natural Areas Program have been removing invasive red cedars from the bluffs at Spring Green Preserve. When not held in check by wildfires or prescribed fires, red cedar can be an aggressive species that shades out native plants. With fewer red cedars, the dry bluff prairie plant community can flourish, increasing habitat for pocket gophers, wolf spiders, meadowlarks, migrating raptors and other wildlife species.

Saving the sloughs

During its first three decades in Wisconsin, The Nature Conservancy concentrated most of its efforts in the southern part of the state, but that changed significantly in the 1990s. In 1993 the organization opened an office in Ashland and began to work with tribal, state and local governments, and other conservation partners to protect significant natural areas in the Chequamegon Bay watershed on Lake Superior.

One area of focus has been the Kakagon/Bad River Sloughs — 16,000 acres of wild rice, wetlands, streams and open water — at the eastern end of Chequamegon Bay. The sloughs are the largest, healthiest estuary system remaining in the upper Great Lakes region.

TIM WEST

A 700,000-acre watershed that reaches across much of Ashland County and portions of Bayfield and Iron counties feeds the sloughs. This watershed harbors 72 rare and endangered plants and animals, 28 different plant communities, and an intact forest community important to many migratory and breeding neotropical songbirds.

The diversity and health of the sloughs depend on the quality and quantity of water that enters from the greater watershed. In turn, it is the high water quality filtering through the sloughs into Chequamegon Bay that makes the bay valuable to anglers, boaters, bird watchers and nature enthusiasts.

TED CLINE

A vast estuary of wetlands, streams and boggy, forest lands snake from Chequamegon Bay on Lake Superior across Ashland County. The Kakagon sloughs are home to 72 rare and endangered plant and animal species, ample wild rice beds and abundant birdlife.

In 1997, The Nature Conservancy purchased 1,043 acres near Mellen, in Ashland County, from the Georgia-Pacific Corporation. The property contains parts of three undeveloped wild lakes — Caroline Lake, Twin Lake-East and Twin Lake-West — as well as the headwaters area for the Bad River, which flows into the Kakagon/Bad River Sloughs. In 1999, as part of the "Great Addition," the State of Wisconsin purchased almost all of the remaining shoreland of Caroline Lake.

The forests at the Caroline Lake Preserve have a long history of use as industrial forests. The land is currently enrolled in the Forest Crop Law program, and the Conservancy has applied to have it transferred into the Managed Forest Law program. A portion of the property will be dedicated as a State Natural Area.

The goal is to protect habitat for forest songbirds and other native plants and animals; protect water quality in the lakes, streams, and wetlands; and encourage old-growth forest in some areas. The Conservancy staff believes this can be done even as parts of the property are harvested to comply with the Managed Forest Law program.

"We look at the acquisition of the land at Caroline Lake as an opportunity to demonstrate how landowners can manage their forests in a way that protects the ecological values and still provide them with long-term income," said Nancy Braker, the organization's director of science and stewardship. "In the next few years, we will begin selectively harvesting trees at Caroline Lake and encouraging growth of white pine, hemlock and other desired species. We hope to share what we learn with our neighbors and others in the watershed who also want to manage their forest lands for both ecological and economic values."

•

Forty years ago, the Wisconsin Chapter of The Nature Conservancy was started by men and women who cared about the special natural places that make Wisconsin such a great place to live. Today the organization's members, donors, partners, volunteers and staff continue the work they began.

"If the Conservancy can be successful anywhere in the United States, it's in Wisconsin," says Nature Conservancy State Director Mary Jean Huston. "There is a strong conservation ethic here. People love this landscape and want to keep it the way it is for the future."

Cate Harrington is Director of Communications and Outreach for the Wisconsin Chapter of The Nature Conservancy in Madison.

Caught in time

A venerable method of capturing animals, trapping, has more uses today than it ever did during the time of the voyageurs.

Jen Patterson

Trapping was the mainstay of the economy that settled Wisconsin. Though the French fur trade vanished long ago, trapping as a livelihood, service and hobby still thrives here. According to DNR license sales, more than 13,000 trappers in Wisconsin spend an estimated $15 million annually trapping for a variety of reasons.

Some still trap furbearing mammals to prepare and sell pelts for the modern-day fur trade. Others have found lucrative markets for by-products in pharmaceutical and cosmetic lines. Still others use traps to conduct scientific research on wild animal populations. Some use traps to control wildlife causing damage to human property.

Homeowners often get introduced to trapping in a small way in varmint control — setting mousetraps in the house, ant traps under the sink, cage traps to relocate a possum living under the porch, or kill traps to eliminate moles tearing up the yard. Whatever the reason, the successful household trapper follows the same steps as other trappers: learning an animal's habits, judging the animal's travel routes, determining a bait or placement that will entice the animal, and learning to control rather than eliminate the population.

Trapper Education Coordinator Scott Peterson examines a pelt with a young student. The workshops provide a great way for budding trappers of all ages to share trapping ethics, hear about animals' habits, learn trapping strategies and practice skills that humanely trap animals while preserving pelt value.

From fur to pharmaceuticals

Scott Peterson is serious about using *every* part of the animals he traps. His beaver tooth necklace is truly amazing: The yellow-orange upper and lower incisors hung between cross-sections of deer antler on a leather thong. Few people might choose to wear it, but it was a piece of art.

He brought out other items: Hats made of bobcat and raccoon fur, a teddy bear covered in otter fur, even beaver scat specimens encased in clear plastic. Peterson, the volunteer Trapper Education Coordinator for the State of Wisconsin, continued to unravel his treasures, including a knife sheath made from a snapping turtle's foot.

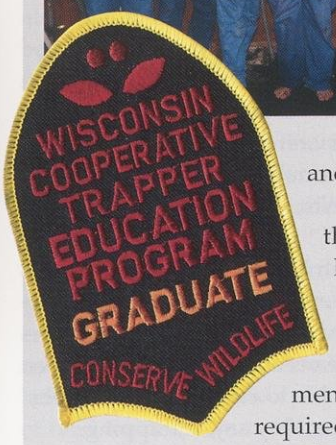
He began trapping 33 years ago, self-taught by reading fur, fish and game magazines. "Everything about trapping was always a competition back then," Peterson said. "Nobody wanted to share knowledge about trapping, so

ROBERT QUEEN (FAR LEFT) SUE PETERSON

Workshops show handling techniques to skin muskrats efficiently and safely.

(above) Peterson demonstrates proper trap sets. *(below)* A cadre of 250 experienced trappers volunteers their time to teach novices the skills and techniques to trap effectively. Since trapper education was required eight years ago, 4,800 graduates have attended the courses.

ROBERT QUEEN



ROBERT QUEEN

Trapper's education

In 1992 the Department of Natural Resources and the Wisconsin Trappers Association developed a formal trapper education course all new trappers are required to attend. Each of the 250 volunteer instructors goes through formal training and a background check to become certified.

Classes last an average of 20 hours and span two or three days, either evenings or weekends. Students learn trapping laws and ethics; trap preparation, adjustment, setting, and safety; humane trapping methods; pelt preparation, skinning, grading, and marketing; trapping history; furbearer management, biology; and more. While only new trappers are required to take the class, veteran trappers often attend as well. When the class is over each successful graduate receives a certificate, arm patch and a trapping license. Since 1992, nearly 4,800 students have graduated from trapper education.

Visit the DNR website at http://www.dnr.state.wi.us/org/land/wildlife/trap/trapeduc/about.htm for more details, or contact Pat Beringer, Wisconsin DNR Trapping Coordinator, DNR, 101 South Webster St., Madison, WI 53707-7921. Phone him at (608) 261-6452 or e-mail at berinp@dnr.state.wi.us.

A correspondence course is available for students who cannot attend the regular classes. Contact Mike Widner, Correspondence Course Director, P.O. Box 483, Baraboo, WI 53913. By e-mail: muskrat_mike@yahoo.com or phone: 608/356-9622.

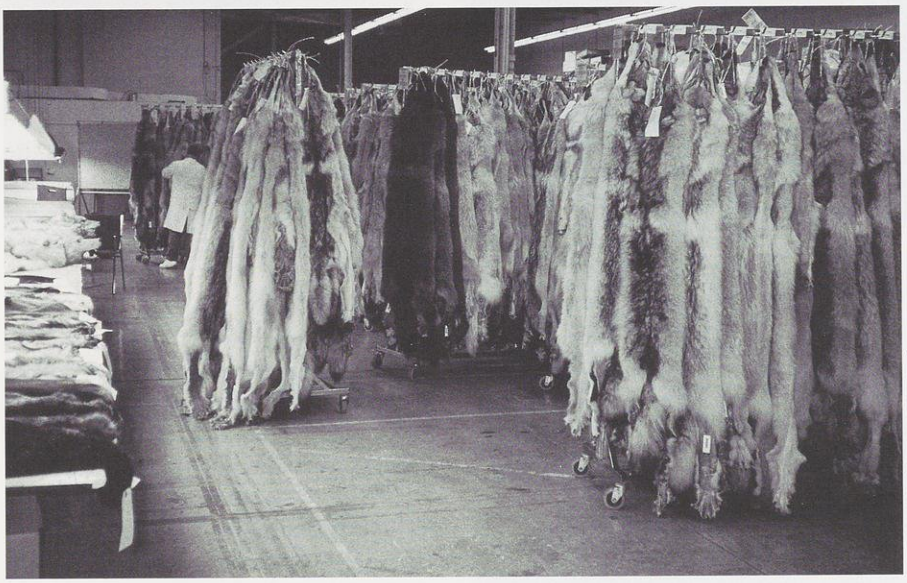
reading about it and making mistakes was the only way I had to learn the right way to do things." Today, in cooperation with the DNR, he coordinates the Wisconsin trapper education program to give new trappers the training and encouragement they need to be effective and humane.

Peterson traps animals for the multitude of products they provide. He makes leather from tanned beaver tails and natural poultices using the dried castor glands from beaver. "Beaver meat is probably the most delicious thing you'll ever eat in your life," he said. Carcasses of the animals he doesn't eat — coyote and fox — go to a rendering plant where they are cooked and used as a protein base in livestock feeds.

It's surprising how many products from trapped animals are used in our homes, work places and in foods. Fats are siphoned and reformulated into fatty acids for pharmaceuticals, homeopathic medicines and gummy candies. Animal fat is used in crayons, cosmetics, soaps, shampoos, lotions, lipsticks, and in making hard plastics. Some rendering plants have a separate process for mink, from which they make mink oil, an excellent preservative and softener for leather products.

The pelts Peterson does not keep for his own use are sold to fur auction houses. Contrary to popular belief, the fur industry is still very much alive and thriving. In fact, over the past year, prices have risen at auction houses, reflecting an increase in demand. In February 2000, over 150 buyers from all over the world attended the North American Fur Auctions (NAFA) in Canada, the largest fur auction in the world. Otter, muskrat, beaver, fisher, coyote, red fox, mink, raccoon, bobcat and squirrel pelts went to the highest bidder. Before the sale each pelt was graded according to size and quality, and pelts of the same grade were grouped together for sale. Beaver pelts, used to make high quality felt hats, sold for an average of $22. Each otter fetched $64, and buyers could collect raccoon pelts for under $10.

Fur sales make a sizeable contribution to Wisconsin's economy. The total



NORTH AMERICAN FUR AUCTIONS

(above left) **Trapping skills are equally useful for removing nuisance animals humanely from homes,** *(above)* **aiding nature study (raccoon tracks) and** *(left)* **providing furs for the worldwide garment industry. Wisconsin pelts brought in nearly $10 million in the most recent year for which records were compiled.**

Species Population Status and Harvest, 1997–98

Species	Trapping harvest	Hunting harvest	Total	Average price ($)	Total value ($)
Beaver	36,320	–	36,320	17.76	645,043
Bobcat	108	80	188	43.70	9,439
Coyote	3,330	14,201	17,531	10.38	181,972
Fisher	3,644	–	3,644	33.05	120,434
Gray Fox	1,618	11,938	13,556	9.18	124,444
Mink	28,767	–	28,767	12.56	361,314
Muskrat	456,839	–	456,839	3.11	1,420,769
Otter	2,704	–	2,704	43.70	118,165
Opossum	25,094	–	25,094	1.47	36,888
Raccoon	243,879	194,205	438,084	14.63	6,409,169
Red Fox	7,603	6,944	14,547	15.63	227,370
Skunk	11,430	–	11,430	4.33	49,492
Weasel	6,027	–	6,027	2.97	17,900
Total Wisconsin pelt value					**$9,722,399**

value of pelts sold here in 1998 was more than $9.7 million, with raccoon, muskrat and beaver pelts together accounting for 87 percent of the total.

Peterson has trapped the same area since 1977, and he is careful not to remove too many animals from the environment. "I could take out every furbearer in that area, but I don't because I know that I only need the surplus," he said. Peterson feels that trapping is responsible wildlife management and questions whether allowing animals to suffer naturally from starvation or lack of space is necessary. In his courses, Peterson teaches new and veteran trappers about population dynamics and animal life cycles, in addition to effective and humane trapping methods. "I firmly believe that trapping would have no future without the Wisconsin education program," he said. "It's just that important."

When the best defense is a trap

While Scott traps to spend time outdoors, harvest animal products and bring in money from fur sales, many people in Wisconsin trap to protect their property.

On Weyh Road near Portage, Dennis and Bev Weyh have waged war on raccoons. The fruits of the Weyhs' labor — corn, soybeans and hay — have proven very palatable to raccoons. The Weyhs' only defense, they say, is trapping.

Last year, three raccoons broke open a rusty spot at the top of a three-ton bin and feasted on corn until they worked their way six feet down. Rick Tischaefer, a trapper hired to help take care of the problem, came over to pull them out. Raccoons had broken through bags of grain, ruining it as they spread it all over the ground. The Weyhs' patch of sweet corn gets hit the hardest, Bev said. To keep the animals out, they put an electric fence around the corn. A

couple of years ago, the Weyhs didn't get the fence up in time and the raccoons took the whole patch overnight; not a single ear was left.

Raccoons aren't the only wild animals that can become nuisance problems in Wisconsin. Black bear, deer, wolves, coyotes, beaver, foxes, fisher, mink, muskrat, opossums, otter, skunks and squirrels are also to blame for the approximately $2.7 million dollars in damage done every year to human property. Unless the property damage is related to agriculture and the owners have enrolled in a damage abatement and claims program, private citizens have to absorb the cost with no assistance. The damage could be as simple as a destroyed bird feeder, or as expensive as siding on a home.

The number-one respondent to wildlife-related damage is the United States Department of Agriculture's Wildlife Services. According to John Maestrelli, the Wisconsin state director, Wildlife Services received 74,500 calls regarding nuisance control assistance between 1990 and 1999. In the same period of time, they trapped and relocated 4,643 problem black bears. In the northern third of the state, Wildlife Services also maintains 750 miles of streams in a beaver-free condition to protect trout spawning habitat. In almost every instance, trapping is a necessary part of their work. "If you eliminate trapping, the magnitude of problems would increase to the point where there is no solution," Maestrelli said. "After traps there really is no other alternative."

Although the Weyhs have never calculated total losses to raccoons, they are certain it is substantial enough to warrant all of the labor involved. Every bag of feed lost is $60 out of their pockets; the sweet corn seed runs $8 per pound. Fence posts, wire and electricity to keep the raccoons out cost money, but both Bev and Dennis cringed at the thought of not controlling the population. Dennis shook his head and said, "I can't imagine what the damage would be like if they weren't removed." With too many raccoons around, the threat of disease or parasite transmission is always possible "It's necessary to trap them," Bev explained. "If overpopulation occurs, disease will set in, and there's no other natural enemy."

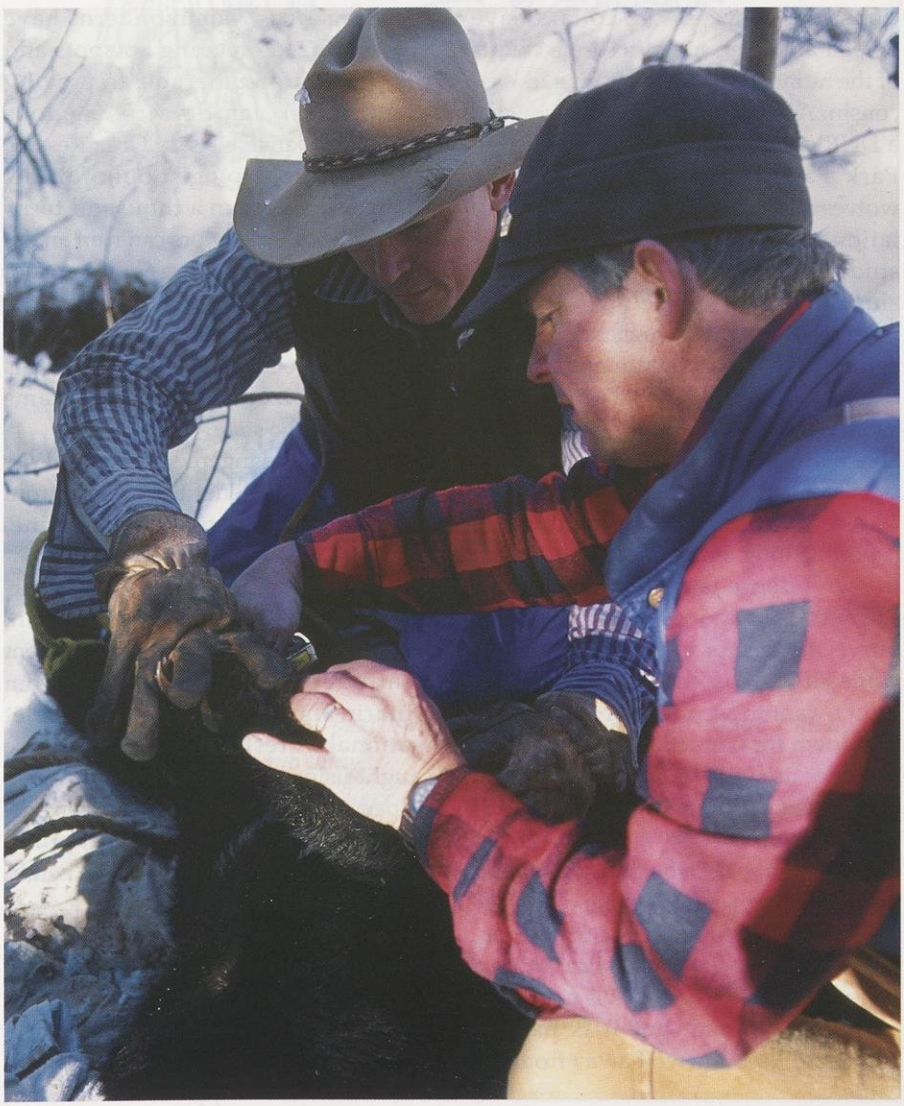
Trapping in research

Natural predators, like wolves, could also cause problems on the Weyhs' beef farm. Farmers in northern Wisconsin, where wolf populations are increasing, find that the natural predators do occasionally feed on domestic livestock. To eliminate conflict between farmers and wolves, DNR wolf biologist Ron Schultz uses non-lethal studded-jaw, or toothed, foothold traps to capture wolves for collaring.

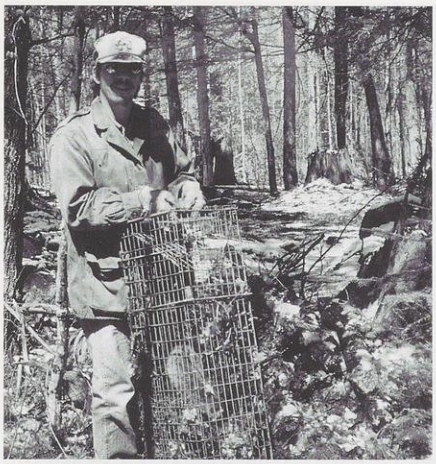
Schultz developed a trapping technique during the last 18 years as the DNR's wolf technician. The toothed trap is illegal to use on dry land, but the DNR has obtained a special permit from the U.S. Fish and Wildlife Service to use it for this purpose. Ironically, the trap with the worst image in the public eye has been deemed the most humane for catching and releasing wolves in the wild. Schultz says the teeth on the trap prevent injury from sawing, which can happen with regular traps. In addition, the wolf's paw is in enough pain to keep the animal from struggling and dislocating a shoulder. When Schultz traps wolves his goal is to release the animals as untouched as possible, so these factors are very important.

The trapped wolves are fitted with

Trap, collar and recapture programs are integral components of wildlife research projects. In western Wisconsin, wildlife managers test if orphaned black bears can be successfully returned to the wild. School groups help track the radio-collared bears.



ROBERT QUEEN



JONATHAN GILBERT, GLIFWC

Can pine marten populations be restored in northern Wisconsin forests? Research by the Great Lakes Indian Fish and Wildlife Commission relies on trapping to track the health and growth of these woodland weasels.

radio collars, which allow Schultz to track their movements and pack formations. For 18 years the collars have helped biologists make accurate counts of the number of wolves settling in Wisconsin. According to Adrian Wydeven, a DNR conservation biologist based in Park Falls, trapping and collaring wolves allows for more accurate population estimates. "No other mammal study is quite this intense in Wisconsin," he said. "We need to be sure of what we're counting, especially when it comes to reclassifying an endangered animal." In fact, Wisconsin's population estimates for wolves have been so reliable that the animal was downlisted to threatened in the state just last year.

A few years ago, Ron Schultz began experimenting with a method of reducing wolf depredation on livestock in Burnett County, just outside of Danbury. One farmer in particular lost 40 calves to wolves in 1997–98. Schultz didn't want to see the wolf responsible put down for her actions. As he put it: "Wolves are wild creatures; you can't blame them for doing what comes naturally to them."

Schultz trapped the guilty wolf and outfitted it with a shock collar. A remote device housed on the edge of the pasture sends a shock to any collar within a half-mile radius. The shock is not harmful to the animal, but it is painful enough to keep the wolf away from the cattle.

Since the first trial period using the shock collar system, the number of missing calves has decreased to zero in the last year, without having to remove any wolves from the area. Before the shock collar system was developed, a single beef farm near Danbury claimed more than $10,000 for livestock lost to wolves, and the wolves were often put down or unsuccessfully relocated. "This alternative seems to be working well," Schultz said of his shock collar system. "Farmers aren't losing cattle, and wolves aren't being killed."

How other species benefit from trapping

Traps play a significant role in the protection of the common tern, another endangered species. In this case, traps help biologists remove predators from breeding areas. Common terns have very localized breeding hotspots and the chicks are vulnerable to preying mink. "Mink can do a tremendous amount of damage," said Greg Kessler, DNR wildlife biologist out of Brule. There are less than a thousand terns statewide and predators can ruin an entire year's nesting success if they are not controlled. Mink are caught in kill traps; the carcasses are used in training courses for DNR employees and the skulls are used for educational programs throughout the state.

Another endangered species in Wisconsin that has benefited greatly from trapping is the American, or pine, marten. Due to loss of habitat and unregulated trapping, martens were extirpated from Wisconsin by 1939. Then, between 1975 and 1983, the department reintroduced martens obtained from Ontario and Colorado to the Nicolet National Forest. The martens were caught using cage traps. Trapping also helped researchers evaluate marten success in Wisconsin. In 1985, trapping confirmed that the animals had established a breeding population here.

Jonathan Gilbert, wildlife biologist for the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) studied martens from 1991 to 1994 in the Nicolet and Chequamegon National Forests. Gilbert trapped martens with Sherman cage traps, radio-collared the animals and tracked them three or four times a week using telemetry equipment. He also measured the size and weight of each animal, and checked for parasites and evidence of reproduction.

Gilbert determined where the martens were living, and also specific requirements for den sites. His work will be instrumental as the two national forests revise their management plans this year. The marten is considered a sensitive species and it is important to be aware of their habitat needs in forest management plans.

In another study, Gilbert used Tomahawk box traps to catch fisher and foothold traps to catch bobcat to see if the animals share habitat and food resources. With radio telemetry, he observed the habits of the animals he had trapped and collared.

"If you're going to study an individual animal, you need to be able to catch it somehow," he said. "I've got to be able to put my hands on them and I can't do that without a trap."

Wildlife researchers have used traps for just about every kind of animal in Wisconsin. Reptiles, amphibians, raptors, songbirds, deer, and small mammals like chipmunks and mice have been trapped in Wisconsin for the sake of research. The research done throughout the state gives us valuable information on individual species, whole communities, and indices of air and water quality.

Today's trappers are wildlife damage experts, researchers, harvesters and homeowners who go to great lengths to remove bats from the attic or snakes from the garage. Trapping is just as necessary as it was 300 years ago, and its uses have grown through the years. As Ron Schultz put it, "I just don't know what we'd do without it."

Jen Patterson is a communications specialist for the National Association of State Foresters in Washington D.C. She formerly served as Outdoor Heritage Communicator for the Wisconsin Dept. of Natural Resources.

The fine art of forgetting

How a sitting grouse cured an itchy finger.

Dave Crehore
Story illustrations by Tom Lowes

We all do dumb things.

What matters is what we do afterwards.

The temptation to be dumb keeps coming around; eventually most of us learn to resist it about half the time, and that's what's known as growing up.

The trouble is, growing up takes a while. Chances are you'll be a full-fledged adult, and more than likely a parent, before you accomplish it. Then the fun starts. You have to avoid being dumb yourself, to set a good example. But the hardest part is deciding what to do when your kids do dumb things.

If you have too much to say, they'll quit listening to you. If you're too sympathetic, they won't learn anything from you. The best you can do is to set some standards for them, be there to help, and then keep your mouth shut as your kids learn to deal with the stupidity they inherited from you.

Here's how I found some of that out:

For Christmas in 1954, when I was 12, my father gave me the Stradivarius of American shotguns, a 20-gauge A.H. Fox side-by-side that had been made in the 1920s and was just getting broken in. It weighed six pounds, four ounces, had 28-inch barrels, double triggers and a straight-grip stock that had already been shortened to fit some lucky kid of the Jazz Age. It was to be my grouse gun.

When winter finally let go of Manitowoc in May, Dad brought home a station wagon load of 20-gauge shells and clay pigeons.

Every Saturday afternoon that we weren't fishing, we'd put a box of pigeons and five or six boxes of shells into my old Radio Flyer coaster wagon and haul them to the big field behind our house. Dad would sail the clays out with a hand trap, and I'd bang away at them.

Dad taught me to raise my right elbow and form the shoulder pocket that God created for shotgun stocks. He taught me to lift the gun gently to my cheek and swing it ahead of the target. In time, I was hitting three pigeons out of four, some days even more.

Once in a while, Dad would bring his shiny-worn old 12-gauge Lefever out to the big field and execute a few targets. He would pivot from the knees, shoulder his shotgun with exasperating slowness, and turn those White Flyers into little clouds of black dust that would drift away on the breeze. He never missed.

"Just take your time and don't worry about missing a few, " he would say. "What matters is being safe and showing some good manners."

Yeah, yeah — I knew all that. But I was a 12-year-old grouse hunter who had never killed a grouse. I wanted a bird.

There were plenty of grouse in Manitowoc County that fall, and as we hunted our way through October, Dad was getting one about every third time he pulled a trigger.

But I was snakebit. The grouse didn't know how good a shot I was. About half the birds I flushed were either out of range, invisible, or on the wrong side of the tree. The other half I missed. I was nothing for five, then nothing for ten. By the time we got into November, the empty shells in the game pocket of my hunting vest had begun to rattle both my pocket and me.

One morning, as we walked down a trail into a cover we called the Sandhill, I spotted a grouse on the ground ahead of us. I stopped and slowly began to raise my shotgun.

Then I saw something move in the top of a big white spruce ahead of me. It was a grouse, at least thirty feet off the ground, staring at me nervously as it perched on one of the short upper branches.

"Don't shoot a sitting bird," Dad said quietly. "You won't enjoy it. Just walk toward him and take your chances when he flies."

My heart hammering in my ears, I tiptoed down the trail. Thirty yards, twenty-five, twenty. The grouse cocked its head and stared at me. It froze. I froze.

"G'wan, shoo!" I said.

The grouse flushed with a roar and flew straight down the trail. I missed twice; the bird topped out over some tall popples, banked hard left and glided out of sight.

Dad lit his pipe. "That's the way they are sometimes," he said. "Every now and then you'll run across one that sits there like a chicken. And it's no fun shooting chickens."

The Sandhill cover was a low, overgrown dune running north and south with a thick cedar swamp on one side. The dune was growing up in popple, white spruce and brambles, and it was grouse heaven. The birds roosted in the cedars and came out on the dune to eat buds and bugs and blackberries.

Dad sent me down the middle of the dune and walked parallel to me along the edge of the cedars. We hadn't gone more than a hundred yards when a grouse flushed in front of Dad and cut into the swamp. He fired almost instantly.

"Did you get it?" I yelled.

"I don't know," Dad said. "Wait there and I'll go look."

It was a cool, windless day with a high, gray sky, so quiet that I could hear the confidential "dee, dee, dee" of the chickadees, and the whirrs of their wingbeats as they danced around in the popples.

Then I saw something move in the top of a big white spruce ahead of me. It was a grouse, at least thirty feet off the ground, staring at me nervously as it perched on one of the short upper branches. I raised my gun, then lowered it part way. I looked around to my right, where Dad had disappeared into the cedars. I couldn't see him.

"Well, I'll be damned," he said, in a conversational tone. "Sometimes that happens. You shoot 'em and they fall right into a tree."

I raised the gun again and pointed its slender barrels at the grouse. "OK," I thought, "maybe I won't enjoy it but by God I'll have a bird." And I pulled the back trigger.

The gun cracked and the spruce needles jumped. The grouse toppled from its perch, dead. It fell a couple of feet through the dense branches and got stuck. I hadn't expected that.

Dad called from a distance. "Did you get it?"

"I'm not sure," I lied.

"Well, I'll be over there in a minute to help you look," Dad said. Good old Dad.

The horror of the situation soaked in. Stupid, greedy me. I had shot a sitting bird, I already regretted it, and now I couldn't even retrieve it. The tree was too big to shake, and too bushy to climb.

Looking down, I saw a piece of dead wood about the size of a baseball bat. I put down my gun, grabbed the stick and hurled it toward the top of the spruce. It fell short. There was plenty of dead wood around and I threw one chunk after another, but nothing could dislodge that grouse.

Then I heard Dad's voice behind me.

"Well, I'll be damned," he said, in a conversational tone. "Sometimes that happens. You shoot 'em and they fall right into a tree."

That was the lie I was about to tell him! My face burned and my heart pounded. How much had he seen?

Dad struck a match and drew the flame down into a fresh bowl of Edgeworth.

Almost accidentally, we looked at each other. There was a little smile around the corners of Dad's eyes. He knew! He must have been watching the whole time. And he knew I knew he knew.

"So it goes," Dad said. "We'll never get that bird down. Let's hunt 'em up; maybe we'll find some more."

But we didn't. We hunted out the cover and trudged back to the car. I deserved ten minutes of I-told-you-so, but Dad never said a word. Bless his old heart, not a word. And I never shot another sitting bird.

Dad and I hunted grouse together until 1982. The day at the Sandhill cover was never mentioned, until I brought it up on an October afternoon as we drove home from one of our last hunts. A light rain was falling and red leaves scuttled across the road. I told him the story I've just told you, and I thanked him for being so kind.

"I don't remember that," Dad said. "I don't remember that at all. But if you say so..."

I glanced over at him but he was busy filling his pipe.

Dad's gone now and my wife and I have raised a daughter and a son. You're probably wondering how I dealt with them when they screwed up. But you know, I've been lucky. My kids have never done a single dumb thing. Not that I can remember, anyway.

Dave Crehore recently retired from his post as the regional public affairs manager for DNR's Northeast Region in Green Bay.

Archer Fred Kasch has been drawing a longbow for decades. At 87, Kasch exercises daily so he can steadily handle bows with 50-pound pull or more.

Targeting health and fitness

Well into his eighth decade, deer hunter and exercise expert Fred Kasch draws the longbow with vigor and accuracy.

Story by Lisa Gaumnitz
Story photos by Robert Queen

The alarm wakes Fred Kasch on the cranberry farm in Warrens where he's stalked deer with a longbow since the 1940s. The 87-year-old lies on his back in the still-dark cabin and begins the first of 100 curl-ups as his younger hunting companions struggle to open their eyes.

Kasch circles his arms and stretches them. He kicks his right leg across his body to touch his outstretched left hand 10 times in an exercise he calls "the wringer." He arches his back 50 times slowly, then 10 times rapidly, and follows with 10 more wringers. Then he rolls out of bed, steps outside to a piece of wood wedged between two branches to create a makeshift chin-up bar, jumps to grab the bar, and pulls his 5 foot 7, 135-pound frame up half a dozen times.

"I do it every day whether I'm here or down there," says Kasch, referring to his Lake Geneva home. "I try to stay in condition to hunt and the hunting helps keep me in some kind of condition."

Kasch has found a fountain of youth in aerobic, strengthening and flexibility exercises. At an age most American men never see, let alone enjoy in good health, Fred Kasch hunts the way he wants to hunt — the traditional way, with equipment he makes. He also skis, body surfs, dances and drives his car cross-country like a man 30 years his junior.

There's a method to his fitness, says Kasch. Despite coming from a nonathletic family, Kasch got plenty of exercise in those days before television and radio. He ran around with the neighborhood kids, played basketball, football and baseball, and discovered the joys of adrenaline and the ability to eat whatever he wanted. He married that with a love of the outdoors through adventures at a Boy Scout camp in Michigan's Lower Peninsula. Every year the scouts were sent off in pairs to fend for themselves for one night, an experience that helped him develop an absolute comfort with the woods. "I'm kind of related to the woods," he says.

"From the time I was 10 or 12 years old, it was plain logical to me: Exercise and a healthy lifestyle made for good health."

Exercising a passion

Kasch has been consumed by a lifelong quest to investigate and document that long-ago hunch. It was a maverick pursuit in the 1930s, 40s, 50s, and 60s, when medical science didn't well understand the health benefits of exercise and society disdained fitness as the purview of dumb jocks.

When Kasch's father pushed him to attend Harvard Business School, the boy rebelled and enrolled in the University of Illinois campus at Urbana, where he began pursuing sports in earnest as avocation and as vocation. He played basketball and football, played both shortstop and second base on the baseball team that won the 1934 Big 10 championship, and entered the university's physical education program — a bold career choice in Depression-era America.

"I was ridiculed," Kasch recalls. "My fraternity brothers said I was a dumb PE major. All of this exercise was a bunch of hooey."

He graduated with a bachelor's degree in 1935 and, while a PE faculty member, earned a master's degree two years later. His move in 1937 to the university's College of Medicine, Dentistry and Pharmacy fueled his professional and recreational passions.

Charged with developing recreation programs for the college's students, Kasch made his first bow in 1937 to oblige the students' interest in archery.

Store-bought equipment was expensive and difficult to come by at the time, so Kasch used the woodworking skills he learned as a youngster to craft bows and arrows. He and his wife became avid archers and good shots, but nearly a decade would pass before he would travel to the cranberry farm in Warrens and discover his recreational passion of bowhunting. Deer populations were low in the Midwest in the 1930s, and it wasn't until the 1940s that a bow hunting season opened for nonresidents in Wisconsin.

He began viewing the country's growing obsession with sports competition as an obstacle to preventing heart disease, diabetes, and other diseases emerging and accelerating as office work reduced people's activity levels. He found it closed off the benefits of exercise and sport to all but a relative few skilled athletes. "When I first started teaching, the philosophy was you play sports to get fit. You really should get fit to play sports. They had it backward."

In 1948, Kasch accepted a job at San Diego State University and took his offbeat ideas and his family west. "They all thought he was a nut," says Roger Pyes, a close friend who met Kasch when he was a graduate student at SDSU, where Kasch taught from 1948–1980 and now has a laboratory and an endowed scholarship named after him. "But he was way ahead of his time."

University officials made it clear he was hired to teach and coach, not con-

duct research, but Kasch soon found ways to pursue his interest in unraveling the science of exercise and applying it to improve people's lives.

In the 1950s, while working on a doctorate from New York University, he spent summers at a Chicago hospital developing tests to assess the fitness of children recovering from rheumatic fever. The disease struck mainly children and often left them with permanent heart damage.

Kasch had the children climb up and down on a bench that was one foot off the ground for three minutes, counted the steps they made, measured their aerobic capacity, and took their heart rates afterward. Physicians at the hospital started to use the test to prescribe exercise programs for children recovering from the disease. Kasch's step test is still widely used by the YMCA and other fitness programs.

In 1958, Kasch started an adult fitness program at SDSU to provide exercise classes for San Diegans, including men who had suffered heart attacks in the past or had high blood pressure. Kasch led the participants through flexibility, strengthening and aerobic exercises several times a week and monitored their heart rates. It was the beginning of the nation's first cardiac rehabilitation program.

The study that led to a fitness boom

In 1964, with the help of cardiologist Dr. John Boyer, Kasch shifted the fitness program's focus to applied research. Program participants would help illuminate the role of exercise in the health and disease of middle-aged people.

"You have to have a personal interest in people," he says. "A lot of studies only last for three months, and the subjects are forgotten afterward...Everybody is doing things for research. They're not out there helping people. They've got their nose in the lab and are working with rats."

By the late 1960s, the team reported in the Journal of the American Medical Association that men with high blood pressure were able to significantly reduce their blood pressure by exercising as little as twice a week.

Kasch's research shows that daily exercise, like his sit-up and pull-up regimen, can keep people healthy much longer. He still walks 3.5 miles and does a strengthening and flexibility workout at least five times a week.

By the early 1970s, Kasch and Boyer realized they were sitting on a gold mine. They had 10 years of data on the blood pressure, aerobic capacity, weight, and other measurements of 15 middle-aged men, including themselves.

The participants were tested in 1974, and, at ages ranging from 43 to 66, were found to be in as good of shape — if not better — than they had been 10 years earlier. That finding set the medical field on its ear. The study helped lay the foundation for the nation's fitness boom in the 1970s, and put to rest the conventional wisdom that exercising after 35 was tantamount to delivering a death sentence to an aging heart and blood vessels.

"Physicians hadn't considered that the heart had to be used to keep it as a good pump," Kasch recalls. "The thinking was if you have heart disease, you can't do much. If you exercised, you were going to kill yourself. Now we know that exercise affects every cell and organ of the body, not just the heart and lungs."

Kasch and Boyer tested the participants at six intervals in the following decades. Last year, the British Geriatrics Society's journal *Age and Ageing* published their results after 33 years of testing. Four of the men have died, two from cancer, one from Alzheimer's and one from pneumonia, but the remaining subjects have suffered minimal losses in fitness and no changes in body fat or body composition. At ages ranging from 69 to 89, they are still swimming, hunting, skiing, mountain climbing and playing tennis. Their blood pressure has stayed the same at ages when more than 60 percent of Americans suffer high blood pressure.

Thirty-six years into the study, Kasch still calls his subjects to encourage them to continue their exercises. "Most people get along fairly well without too many medical problems until they hit 60," Kasch says. "The last 10 to 20 years of life, they are nothing but aches and pains. So they're existing, but they're really not living."

What their longitudinal study has shown, Kasch says, is that with regular exercise and good nutrition, "sure, you're going to go downhill, but you're going to go downhill much slower."

Perhaps his greatest legacy is his success in bringing that information to people and in practicing what he preaches. "The lives he has touched, the people he's influenced and the lives he's extended are just enormous," Pyes says. "To me, Fred's a living hero."

A longbow hunter

Kasch pulls the same bow weight he's pulled for decades, an impressive feat considering he uses a longbow. This traditional bow requires the hunter's effort to increase as he pulls the arrow back, unlike the more popular compound bow, which allows the hunter to decrease his effort typically 60 to 80 percent.

Kasch maintains that ability to pull an arrow by shooting nearly every day at the Big Foot Archery facility. "In order to shoot a (long) bow and arrow I like to have a bow of at least 50 pounds draw weight," he says. "That means I have to maintain good upper body strength." After warming up to avoid rotator cuff injuries — push-ups against his car, arm circles, two sets of 15 deep

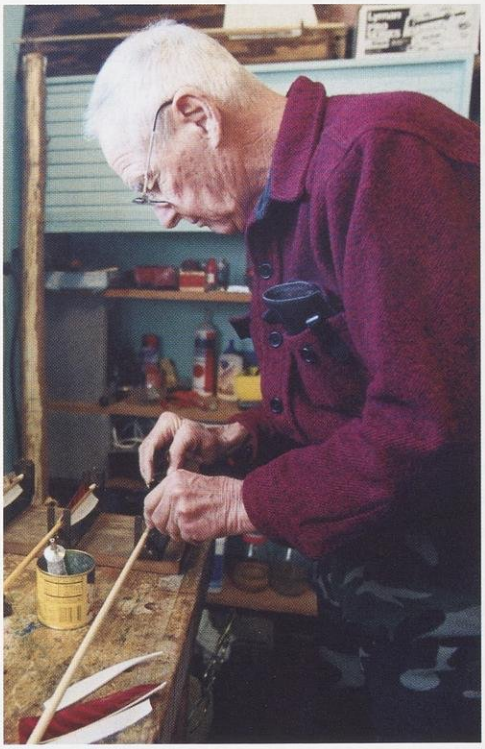
push-ups, and two or three pulls on the bow — he'll shoot for half an hour. Then he'll drop down for "20 to 25 deep push-ups until I'm pooped."

He also maintains strength and fitness with his daily regimen of strength and flexibility exercises and by jogging and walking 3.5 miles a day, five times a week. He used to run the full length in 8-minute miles until he suffered pneumonia a few years ago, a bout that seemed as damaging to his psyche as to his stamina. "I still can't believe I got pneumonia," he says. Now he clocks 13-minute miles.

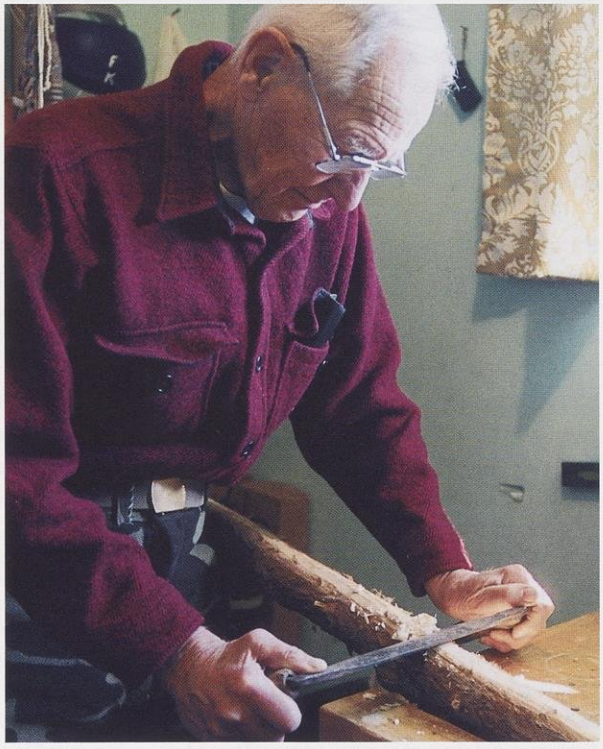
"My philosophy is a person should try to stay fit within 90 percent of their capacity at all times," Kasch says. "Of course, you have ups and downs over the course of the year...you'll be more fit at times than at others."

Good nutrition is as important as exercise in maintaining good health, Kasch says. He loads up on fruits and vegetables, limits fats to about 20 percent of his daily caloric intake, eats sensibly portioned desserts, and skips caffeinated beverages.

The combination of good food and exercise has enabled him to enjoy what's been a retirement in name only. He pores over nine sports medicine and fitness journals and travels to meetings of the American College of Sports Medicine. "The curiosity gets greater and greater," he says. "The more you know, the more you want to know."



He's made his own archery equipment since 1937. In a small workshop, Kasch crafts and fletches arrows.



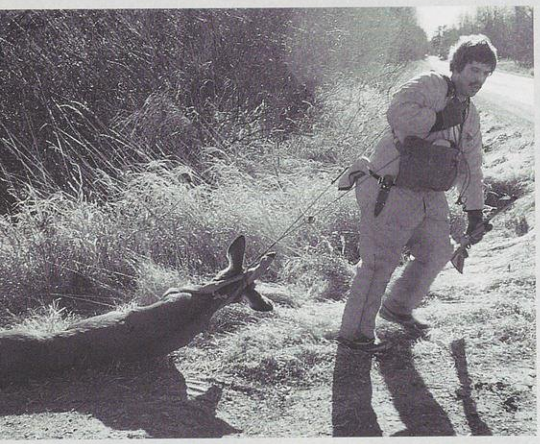
He also hews, shaves and shapes longbows made of yew and osage orange. Kasch still target shoots competitively.

He and his wife, Teddie, travel throughout the spring and summer to archery tournaments across the Midwest in which longbow enthusiasts shoot at simulated, three-dimensional targets of animals such as deer, bear, cougars and turkeys.

Fred is a good shot and a favorite among the archers, says Jack Stevenson, a friend and fellow traveler on the circuit. "He goes out and talks to everybody and shows them how to make bows and arrows."

In early July, Kasch was helping a friend finish up a bow in his makeshift workshop in a small room off the garage. "I'm lazy and getting lazier all the time, so I buy these semi-finished bows from a chap in Flint, Michigan," he says. Kasch can finish off one of these bows in a day, compared to the several days it would take him in earlier years when he'd use a hand ax and draw shave to shape a bow out of a log of yew.

Heart healthy for the hunt



DEAN TVEDT

To hunt all day in heavy clothes and have the strength to haul out your deer, you need to condition.

Hunters getting ready for the gun-deer season should pay as much attention to their physical condition as to their gear, physicians and hunter safety officials advise.

Too many men take better care of their trucks, their tree stands and gear for the hunting season than their body, and they skip getting a checkup, says Dr. Joe Krien, a family practice doctor with Franciscan Skemp Healthcare Mayo Health System. "If we can get them half as concerned about their heart and their health as they are about the hunting season, they'll be a lot better off."

Hunting can be hazardous to health if the hunters already have an underlying heart condition, says Krien, who works at Franciscan Skemp's West Salem clinic northeast of La Crosse. Hunters moving around in the cold, tramping through the woods and sometimes climbing steep grades, all make their hearts work harder. Merely seeing a deer can cause hunters' heart rates to more than double, according to 1996 research on Michigan hunters, and dragging a deer back through the woods also can strain the heart.

Wisconsin law doesn't require the state to track the number of people who die from heart attacks while hunting, but Tim Lawhern, Wisconsin's hunter education administrator, says that newspapers report at least one death every year, and he receives anecdotal information about other heart attacks, not all of them fatal. "Part of being a responsible hunter is being prepared," he says. "Preparing and maintaining your body as well as your equipment is important and adds to the enjoyment of the hunt."

Conditioning can take many forms and all prospective hunters, men and women, benefit from several months of training. According to Fred Kasch's studies at San Diego State, stamina decreases with age, but inactivity saps half of your aerobic capability in 23 years. People who exercise regularly can cut that loss to about 13 percent. Exercise also lowers weight, blood pressure and the likelihood of heart attack. Low-impact exercise like walking, swimming, bicycling and cross-country skiing just three to four times a week can strengthen muscle, keep joints limber and reduce heart stress. Those seeking a more aerobic workout should consider having a stress test to determine ideal heart rates when exercising.

Planning your meals before hunting is equally important. Foods with whole grains, fruits, lean protein and complex carbohydrates are a better choice than sugared pastries, coffee and fatty sausages.

To give hunters advice and get them ready for the Nov. 18th gun-deer opener, Krien, his colleagues at the West Salem clinic and two Mayo Clinic cardiologists, all of them hunters, will again run special cardiac exams for hunters in the western part of the state to see if their hearts are up to the challenges of hunting. Similar clinics could be set up at other medical centers statewide. Discuss the idea with your physician or HMO.

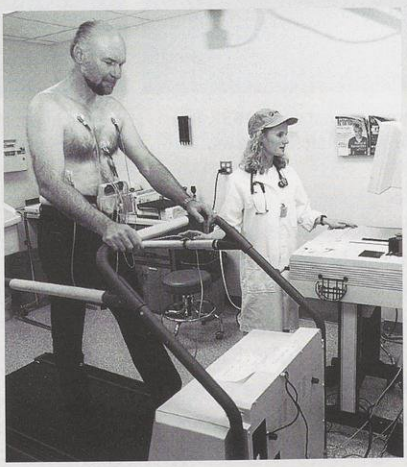
The medical staff gives the hunters physical exams, tests the hunters' cholesterol, blood pressure, blood sugar levels for diabetes, their lung capacity and runs stress tests on a treadmill. They also have hunters fill out a health-risk questionnaire about their smoking and other health habits and family health histories. All of these activities are designed to screen the hunters for risk factors of heart disease including high blood pressure, diabetes, family history of heart disease, obesity, smoking and age.

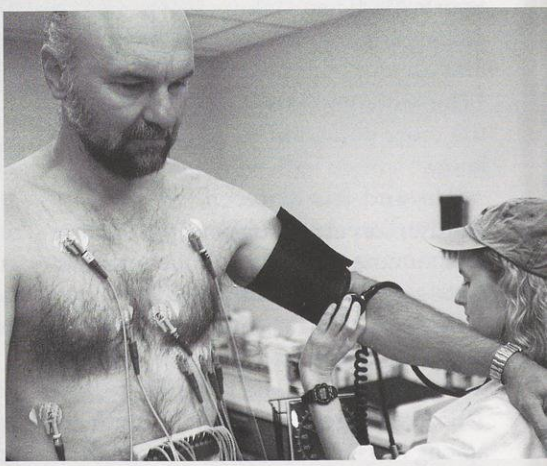
The doctors meet individually with the hunters to go over the results of their exams. Three of the 20 hunters who came in for the hunter's special failed the stress test and were referred to Mayo Clinic cardiologists for additional consultations.

Krien advises that getting frequent checkups is a good idea for everybody. Men between the ages of 40 and 50 should get a checkup every other year, and should get an annual physical after they've turned 50. Women should have a yearly physical and a mammogram after age 40.

"Heart disease is very common and it isn't just people who smoke or people

Two hunters who are also Mayo Clinic cardiologists offered pre-season checkups to test that prospective hunters have the heart for the physical demands of days afield. Patients are screened for risks of heart disease including high blood pressure, diabetes and obesity, smoking habits, age and stamina. Similar clinics could be offered statewide. Talk to your doctor.





whose father or mother died of a heart attack," Krien says. "It can be anybody out in the field or at home, and if you haven't been checked out for the factors that contribute to heart attacks, you need to."

Krien and Lawhern advise people who are unable to get a checkup before the hunting season to take it easy on the days they are hunting, and follow these other heart-healthy tips:

- Remember to tell someone where you are going and when you expect to be back.
- Take a cellular phone if you have one and make sure the phone is within range of a PCS tower, or wear a plastic whistle around your neck.
- Dress in layers so that you can remove clothing when you start to warm up. Clothing gets damp from perspiration after exertion, and wet layers pull away body heat. Use "wicking" underclothes so the layer next to your skin is dry and you don't become hypothermic.
- Take along water so you don't become dehydrated.
- Take things at a comfortable pace — rest for a spell if you feel the slightest bit tired.
- Get help to drag a deer out of the field to your vehicle.
- Stop what you're doing and get medical help if you experience any of the warning signs of a heart attack — pressure in the chest, pain spreading to the shoulders neck or arms; chest discomfort with lightheadedness, fainting, sweating or nausea, or shortness of breath.

ROBERT QUEEN PHOTOS

Now he uses Osage orange for the bows because "the wood is so tough and hard it can take a lot more beating and handle the temperature change better."

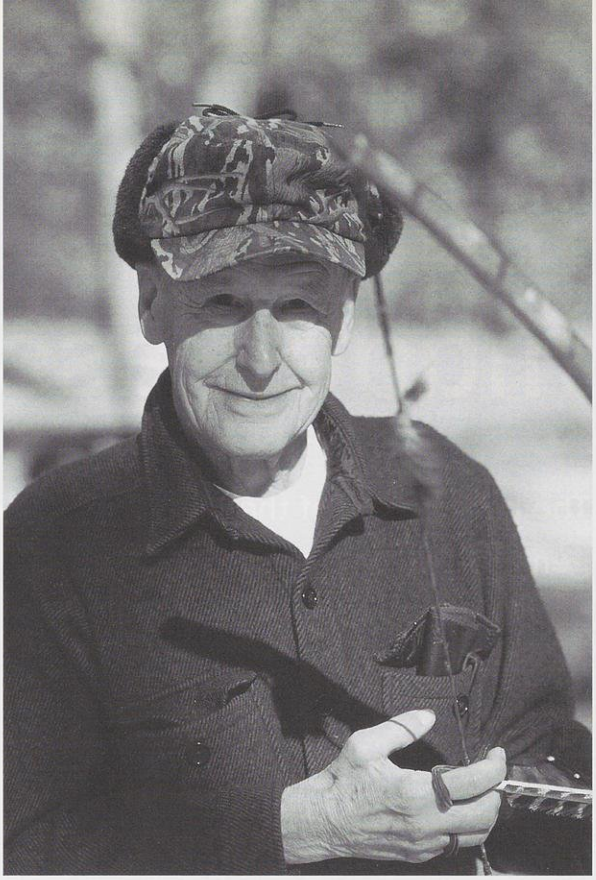
Kasch uses Port Orford cedar dowels from Oregon to make his own arrows, often splicing in a birch dowel to create a footed shaft to prevent the arrow from breaking at the connection with the broadhead. He fletches the arrows with turkey feathers, and paints the arrows with two coats of lacquer or varnish. "I don't do a good job of painting," Kasch says. "I put my effort into proper weight and stiffness."

He makes everything he uses to hunt or compete in 3-D archery tournaments, with the exception of broadheads and target points, and often salvages old clothes or other materials. His quiver, for example, is made from a foam thong and old leather. "You've probably heard that I'm a cheapskate," he says and winks.

Using his own hand-made equipment enhances his enjoyment in the field. "It's a thrill to see your arrow go where you're aiming, even if you don't hit your target," Kasch says. Which is a good thing, since he hasn't hit a deer for many years.

The lack of success reflects his aging eyesight and the difficulty of getting within about 20 yards of his prey before firing off an arrow that will travel about 150 to 160 feet per second toward the target. That's about 100 feet less per second than an arrow fired from a compound bow and 10–15 times slower than a speeding bullet fired from a hunting rifle.

Kasch's never been tempted to increase his chances of claiming a deer by using a compound bow or a gun, or by sitting in a tree stand. "I enjoy the beauty of the woods and the quietness and the challenge of trying to see a deer before he sees you," Kasch says. "I like the camaraderie."



Kasch pioneered exercise physiology for adult fitness. He and San Diego cardiologist John Boyer conducted groundbreaking studies on the role of aerobic exercise in health, disease and aging.

"Getting a deer is not the end for him," Pyes says. "He's more of a nature-lover, an outdoorsman who just coincidentally is carrying a bow and arrow."

Kasch hunts opening day and every day he can before the archery season closes. He'll typically be gone for four to six hours, and then returns to the cabin to eat, take a nap, and calculate how far he'd walked and how many calories he'd burned that day.

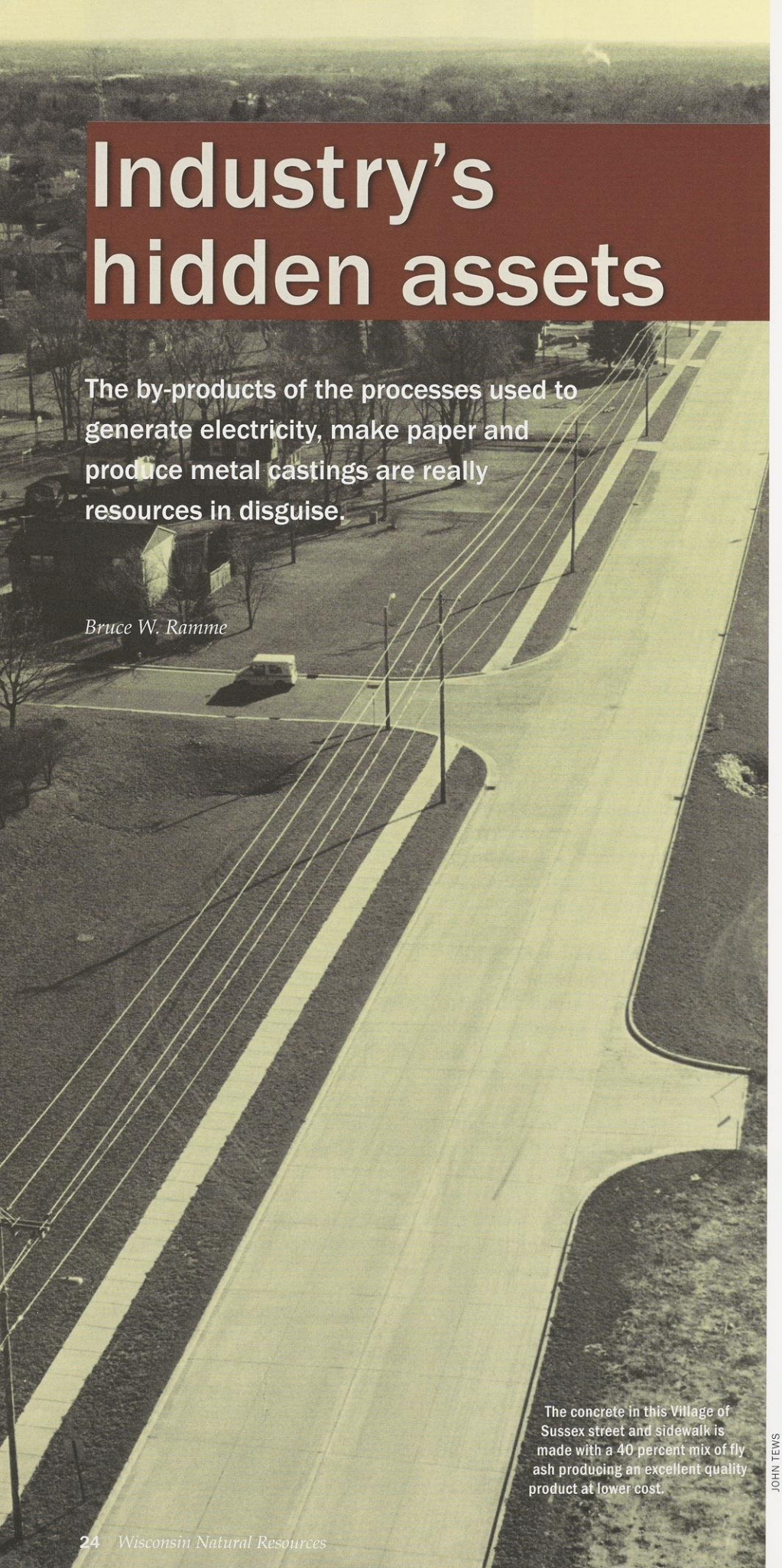
"There's no end to it," Pyes says. "Sometimes, you're out walking around and you haven't seen a deer and you do get a little bored. Fred will take off his hunting jacket, put down his bow, and he'll challenge you to a push-up contest."

Lisa Gaumnitz, DNR Public Affairs Manager, writes about outdoor and environmental issues from Madison.

Industry's hidden assets

The by-products of the processes used to generate electricity, make paper and produce metal castings are really resources in disguise.

Bruce W. Ramme



The concrete in this Village of Sussex street and sidewalk is made with a 40 percent mix of fly ash producing an excellent quality product at lower cost.

JOHN TEWS

Everyone understands the convenience of flipping a switch for electricity, or the ease of purchasing everyday paper products like tissues and plates from a grocery store shelf. Some might be aware of the cast metal pieces used in the motors, appliances and plumbing that make modern life comfortable. But it's the rare person who considers how these conveniences are produced by industries — and what industry does with what's left behind after energy or goods are created.

Wisconsin industries annually use about 25 million tons of coal, more than one million tons of special silica sands, over two million cords of pulp and more than 2.5 million tons of recycled paper feedstock to crank out the watts, cast the U-joints and roll out the paper toweling for consumers.

These industrial processes yield by-products: fly ash, bottom ash, boiler slag, flue gas desulfurization materials, spent foundry sand, wood ash and pulp/paper mill sludge. Each year, more than 1.5 million tons of coal ash, 1.2 million tons of used foundry sand and slag, and 1.6 million tons of pulp and paper mill residues from wastewater treatment are created — more than enough to fill a football field 2,000 feet in height every year.

State industries, in conjunction with

"We have found that the use of combinations of two industrial by-products, used foundry sand and coal fly ash, lead to better quality concrete than just the use of used foundry sand alone. This is the future…co-existence and interdependence of industries: their products and by-products working together for better quality construction materials of tomorrow."

Tarun Naik, Director of the UW-Milwaukee Center for By-Products Utilization

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Wisconsin universities, state government agencies and others, have developed beneficial uses for many of these materials. Here's a short list:

- fly ash is used as a supplementary cementing material in concrete and concrete products for highways, building, bridges, driveways, sidewalks, masonry products, swimming pools, slabjacking and flowable backfill.
- bottom ash, foundry sand and slag can replace crushed stone, sand and gravel.
- boiler slag is added to roofing shingles, asphalt surfacing and sand blasting grit.
- coal ash, wood ash and foundry sand can be used as structural fill material in constructing highway embankments, road bases, and "controlled low-strength backfill" for easy excavation.
- paper mill by-products can be land-spread on farm fields and forests as a soil conditioner, used to carry fertilizer, reclaimed for energy, used to reinforce concrete, or to produce lignin, which has a variety of uses.
- fly ash, wood ash and bottom ash are used as soil conditioners.

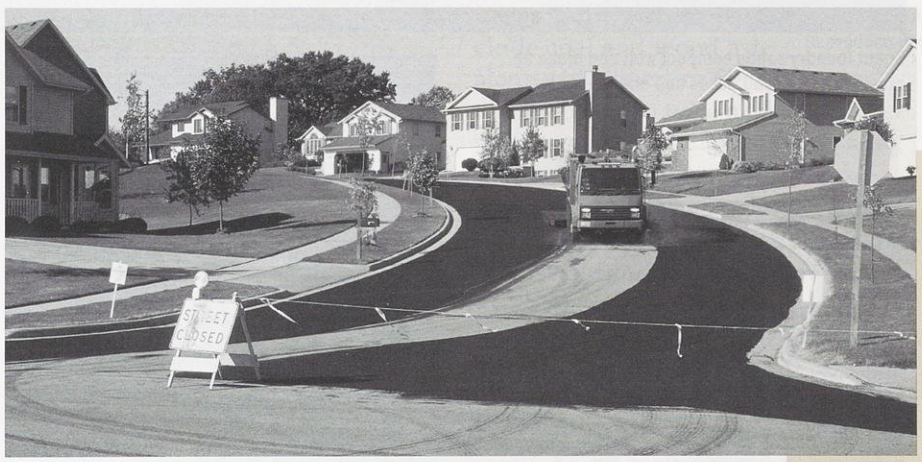
Most of these by-products also have been used in landfills for daily cover, granular drainage layers, and to solidify liquid wastes.

It makes good environmental and economic sense to use rather than discard industrial by-products. Reuse reduces the need for landfills, quarries, gravel pits and Portland cement kilns. It saves fuel. It lowers costs for building roads. And it means we won't deplete stocks of valuable natural resources as quickly for future generations.

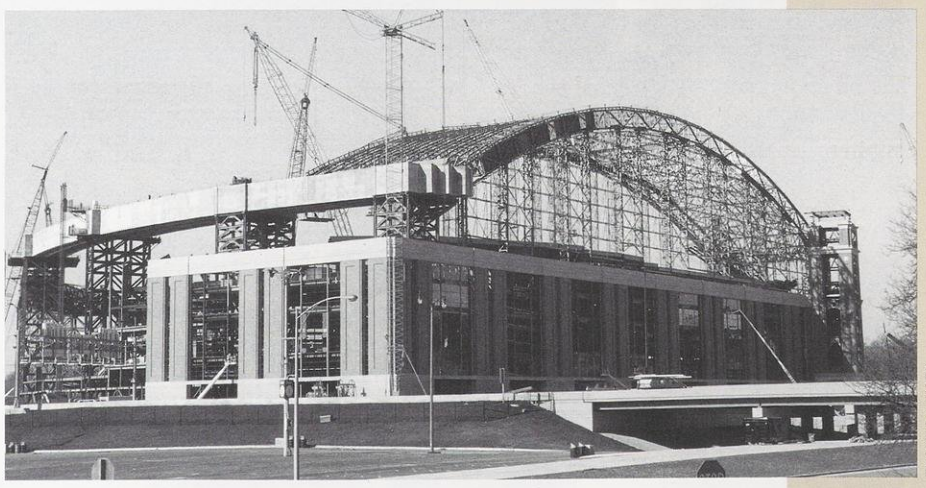
The Wisconsin Department of Natural Resources has established rules to ensure by-products are used in ways that won't harm the environment or human health. The rules include chemical testing, permissible applications, location guidelines and public involvement on large projects.

Contributions from the coal bin

Over half of the electricity produced in the United States is generated from coal, the country's most abundant fuel. In a typical pulverized coal-fired power plant, the coal is milled, then transported with air into the furnace or boiler, where it is burned at temperatures exceeding 2000°F. The residues are filtered and collected so they don't become pollutants. Bottom ash and boiler slag are collected from the bottom of the furnace. Electrostatic precipitators or "bag houses" before the chimney collect fly ash. Flue gas desulfurization materials



STRUCK & IRWIN PAVING, INC.



THOMAS JANSEN

By-products are plentiful and useful.
(top) Boiler slag from power plants is mixed into the slurry that sealed this concrete street in a Waunakee subdivision.
(bottom) A lightweight mix of fly ash and paper sludge called Minergy LWA was used in the concrete at Miller Park in Milwaukee and in the adjacent Highway 41 project. The mix reduces the weight while maintaining the strength of finished structures.

Beneficial uses for coal combustion products

Fly ash

- Concrete & concrete products
- Cement manufacturing
- Lightweight aggregate
- Highway embankments
- Soil amendments
- Flowable backfill
- Slabjacking material
- Liquid waste stabilization
- Fillers for composite materials
- Fillers for paints & plastics

Bottom ash & boiler slag

- Sand, gravel & crushed stone
- Aggregate for concrete products
- Soil amendments
- Structural fills
- Base & sub-base for pavements
- Anti-skid material for roads
- Roofing shingle granules
- Chip Seal road topping
- Blasting grit

Flue gas desulphurization materials

- Gypsum board
- Soil amendments
- Liquid waste stabilization

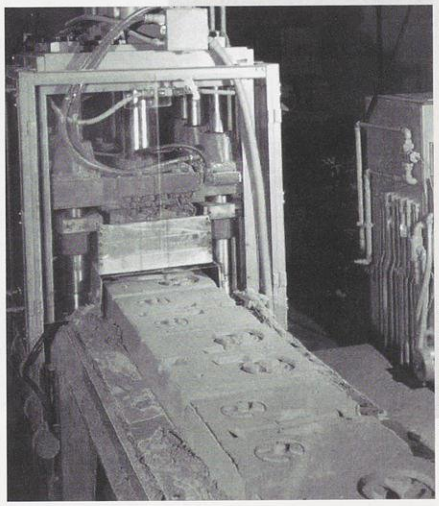
can be collected in a fine dry form or a lumpy wet form, depending on the type of system employed. Lime or limestone-based materials are typically used to "scrub" sulfur from flue gases in these systems to reduce emissions that might otherwise contribute to acid rain.

By-products from coal burning are similar to volcanic ash, wood ash and soils. Bottom ash and boiler slag residues range in size from fine silt to gravel-sized particles. Fly ash resembles a fine powder. Flue gas desulfurization materials are typically rich in calcium and sulfur compounds, because limestone is often used to remove sulfur from flue gases.

Approximately 1.5 million tons of coal combustion by-products are produced in Wisconsin annually. Wisconsin's utilities continue to be leaders in beneficial reuse, recycling more than 60 percent of our coal burning by-products into concrete products, road bases, gypsum board and assorted fills — well beyond twice the national average. Like other commercial materials, combustion by-products are tested to ensure that safety and quality requirements are met before the by-products are reused in construction or as fill.

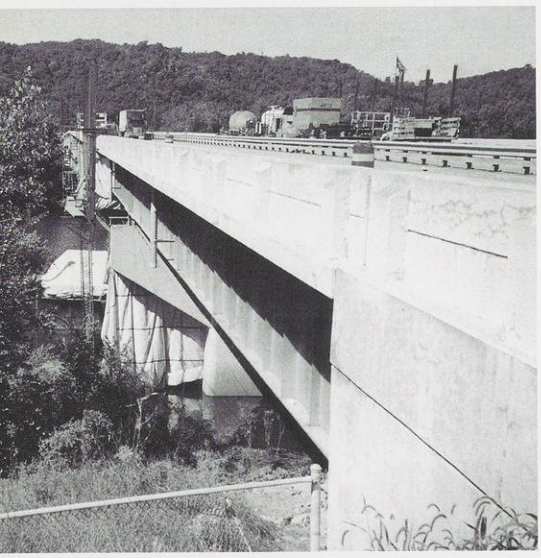
Reuse provides a wealth of benefits. For every ton of Portland cement manufactured in a typical kiln, one ton of CO_2 (a greenhouse gas) is emitted. By using coal combustion by-products to replace some of the ingredients in cement, we need fewer kilns, and we reduce greenhouse gas emissions. When by-products are reused, we consume fewer raw materials, and don't need to build as many new landfills, gravel pits and quarries. To replace freshly mined gravel and stone, Wisconsin Public Service Corp. uses coal ash as structural fill for highway embankments in the Fox River Valley. The freeway spur to Milwaukee Mitchell International Airport Freeway sits on an embankment of coal ash, and the freeway is paved with concrete containing fly ash.

Spent foundry sands compact well and make an excellent fill in road bases and embankments.



GREDE FOUNDRY/ GREDE USA

At foundries, sands are molded to make precise castings for metal and machine parts. After several pours, the spent sands can be used in building materials and fills.



BLACK DIAMOND INC.

Boiler slag is a tough, gritty material. It made an excellent substitute for sand when blasting clean the surface of this lock and dam.

New life for old sand

When compressed under pressure with a small quantity of a binder, ordinary silica sand is used to make molds into which molten metal can be poured, or cast. Metal castings are used in countless ways — in machines of all kinds, in engines, pipefittings and more.

Sand molds can be reused many times before they must be replaced. When the old sand is disposed of, it is treated as a solid waste — a "high-volume industrial waste" because there's so much of it — nearly 1.2 million tons each year.

Spent foundry sand serves as a gritty substitute for native gravel and stone. It's used in structural fill, embankments, granular backfill, roadway base or sub-base materials, and landfill liners or daily cover. It's also found in bricks, asphalt and low-strength cement.

Waupaca Foundry in Waupaca and Marinette, a pioneer in finding uses for its spent sand, has participated in several state highway projects with the

Department of Transportation. The foundry's sand was used in place of virgin soil to create road embankments, and crushed slag was used as roadway sub-base.

The Falk Corporation and Briggs & Stratton foundries in Milwaukee participated in asphalt pilot projects undertaken by a major highway-paving firm. The study, supervised by the University of Wisconsin Asphalt Institute, documented the suitability of foundry sands as an ingredient in asphalt and established specifications for mix ratios.

Spent sand from Grede Foundries in Milwaukee and Reedsburg is an ingredient in a cement mixture known as "flowable fill." This low-strength material makes an ideal backfill for areas such as trenches that later may be re-excavated. The Kohler Company in Kohler also has extensive experience using flowable fill in bridge abutments.

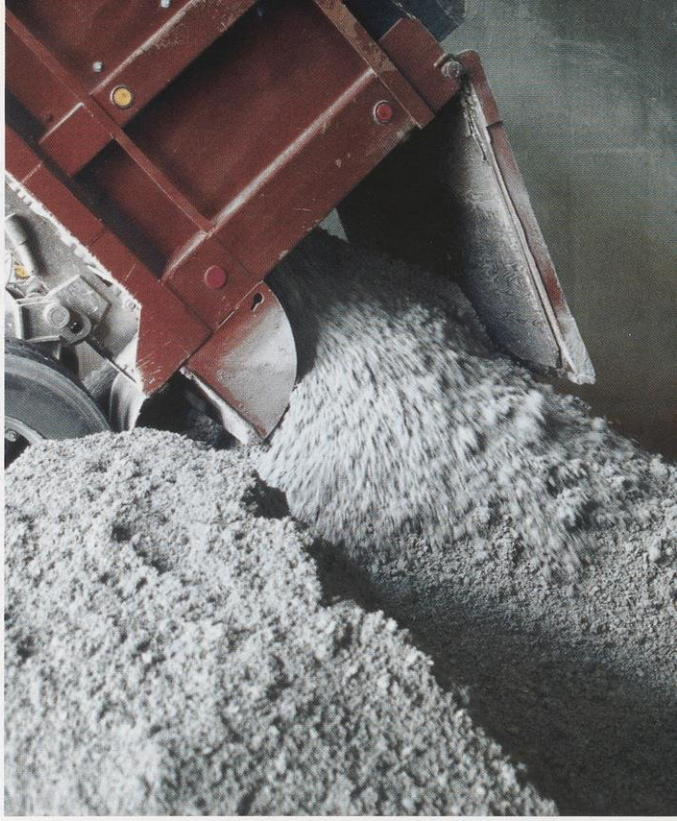
Beneficial uses for foundry by-products

Sand

- Paved roadway & lot base, subbase, subgrade fill, embankments
- Controlled low-strength concrete (CLSM) or "flowable fill" for utility backfills or slabjacking
- Daily cover for landfills
- Structural fill
- Natural aggregate substitute in manufactured concrete products or asphalt
- Cold weather road abrasive

Slag

- Decorative stone
- Roadway sub-base
- Substitute for crushed stone



COURTESY OF THE WISCONSIN PAPER COUNCIL

The fibery mix of papermill pulp can be landspread as a soil amendment, mixed with fertilizers, blended in absorbents or burned to produce energy.

Power from paper production

Paper mill by-products include coal and wood ash, along with "fines" or fibers that are too short to be made into paper products, and residues from operating wastewater treatment plants.

Pulp and paper mills have used these materials for many years land-spreading wastewater residues as a soil amendment on farm and forest lands, drying and pelletizing residuals to carry fertilizers, burning the remains for energy recovery, using boiler ash as a fill in highway projects, and incorporating boiler slag in road surfacing. Two projects illustrate how these efforts directly benefit Wisconsin residents.

"Flowable fill" that includes foundry sands fills spaces tightly without air gaps in excavations and trenches.

DAVE WILLIAMSON, GREDE FOUNDRIES

Tomahawk area residents have been using boiler slag — cinders — from Packaging Corporation of America (PCA) as cover for unpaved roads. Over 5,000 tons of this material were distributed in 1999. In the future, the cinders will be incorporated in asphalt road paving.

Air travelers to the Central Wisconsin Airport have been getting a bird's-eye view of a cooperative beneficial use project between Wausau-Mosinee Paper Corporation's Mosinee mill and Wisconsin Public Service Corporation (WPSC). The airport has been engaged in a multi-year project to construct a runway overrun area to improve safety. Fill for this project has been provided by ash from the Mosinee mill and WPSC, avoiding the need to landfill the ash and providing enhanced safety for air travelers.

Other cooperative projects are underway. One is Minergy Corporation's

BECHER-HOPPE ASSOCIATES

(above and bottom right) **Fly ash from burning coal to make electricity and from burning bark, dewatered paper and sludge to generate heat, was used to form a safety berm at the east end of the Central Wisconsin Airport in Mosinee.**

unique cyclone boiler facility that uses a patented technology to convert approximately 400,000 tons per year of paper mill wastewater treatment residuals into 80,000 tons per year of glass aggregate. The plant also provides 5 megawatts of electric power and generates steam for P.H. Glatfelter Company's Neenah paper mill.

"The Department encourages the beneficial use of industrial by-products in order to preserve resources, conserve energy and reduce or eliminate the need to dispose of industrial by-products in landfills."

George Meyer, DNR Secretary

Another project is underway in Green Bay where WPSC is working with Green Bay Packaging Corporation to reburn industry ash and recover additional energy. The residue is then combined with utility ash and used as cement replacement or in highway embankment construction.

Why reuse is the right thing to do

Even in a state like Wisconsin, with relatively low-cost native stones and gravels, it's becoming more and more difficult to site new quarries and pits. Urbanization, nonmetallic mining regulations, and a higher level of sensitivity about the environment all contribute to a new "go slow" attitude.

With over 4 million tons of industrial by-products available on a yearly basis in our state, it's also becoming harder to justify not reclaiming and reusing these valuable resources. This is especially true if the alternative is filling up landfills faster. Everyone — generators, users and society — wins when we find beneficial ways to reuse by-products.

Wisconsin Electric Power Company in Milwaukee now uses high-carbon coal ash by-products as supplementary fuel. Foundry sands are already being

(right) **Minergy Corp. converts residues from papermill wastewater into a tough, glass aggregate (glove on right) that is used in decorative concrete** *(below)* **and tiles.**

(LEFT AND FAR LEFT) COURTESY OF TERRENCE W. CARROLL, MINERGY CORPORATION

BECHER-HOPPE ASSOCIATES

Beneficial uses for pulp and paper mill by-products

- Landspread soil amendment on agricultural and forest land
- Daily cover or hydraulic barriers at landfills
- Cement manufacturing
- Glass aggregate
- Lightweight aggregate
- Fertilizer carrier
- Energy recovery
- Animal bedding
- Industrial absorbents

reclaimed and reused many times internally by foundries.

Research continues to discover new uses for by-products. Fly ash is being used on an experimental basis to produce lighter and stronger aluminum castings for the automotive industry. And coal fly ash is an ingredient in an ultra-high strength concrete that is almost as strong as steel now being developed at the University of Wisconsin-Milwaukee. Studies have shown that 10 percent bottom ash added to topsoil mixtures improves porosity, increases seed germination rates, and improves plant yield for a variety of crops. The future will see by-products added to paints, epoxies, ceramics, metals and more.

We can even reclaim by-products that were previously regarded as waste. In a pilot project at Wisconsin Electric's Pleasant Prairie power plant, landfilled coal ash is being recovered to supplement the supply of sand and gravel.

We're limited only by our own imagination and creativity. With so many environmentally sound and economically beneficial uses for by-products, the real waste would be to ignore the value inherent in these materials.

Bruce W. Ramme is Principal Engineer of Combustion Products Utilization for Wisconsin Electric Power Company. Contributing writers included Brian Mitchell representing the Wisconsin Cast Metals Association, Edward Wilusz representing the Wisconsin Paper Council, and Tom Bennwitz and Jon Brand of the DNR.

Learn more

Publications:

- "Innovative Applications of Coal Combustion Products," American Coal Ash Association, 1998. 99 pages.
- "Fly Ash Facts for Highway Engineers," FHWA-SA-94-081, 1995. 70 pages.

Websites:

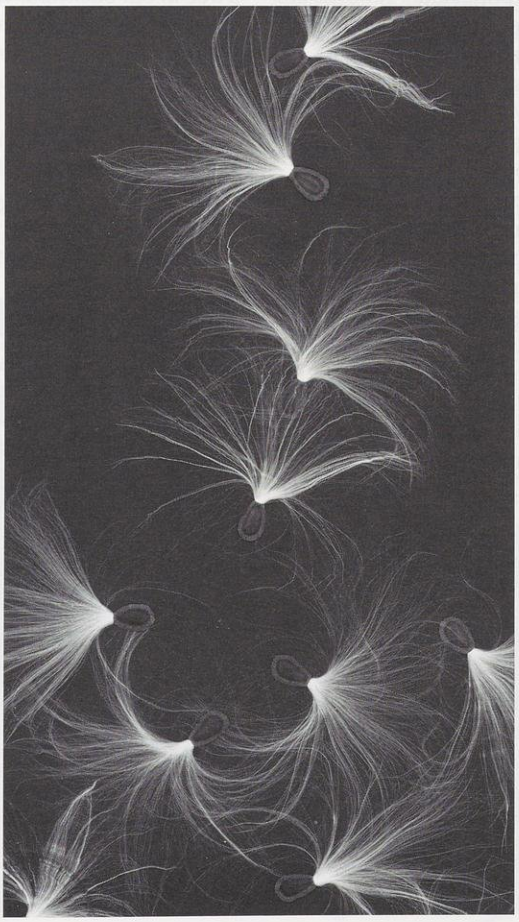
- American Coal Ash Association
  http://www.ACAA-USA.org
- FIRST: Foundry Industry Recycling Starts Today
  http://www.foundryrecycling.org/
- University of Wisconsin-Milwaukee Center for By-Products Utilization
  http://www.uwm.edu/Dept/CBU
- Wisconsin Electric
  http://www.wisconsinelectric.com/pages/busprod01.html

continued from page 2

October winds pull at ripened seeds and send them on their way. Dried milkweed pods split open along one side, exposing flat brown seeds arranged like cedar shingles on a roof. Each seed is attached to a white, fluffy parachute. Gentle and not-so-gentle winds tug on the billowy floss one by one to carry the seeds aloft. When the pod and wind conditions are perfect, the seed-carrying parachutes lift off in military precision, one right after another, and float single file to unknown destinations.

October is not complete until I hold a handful of milkweed seeds over my head and let the wind work through my fingers snatching the seeds away. This has been a ritual since childhood. Each year I dream of what it would be like to float freely on October winds, wondering where I would land when the winds finally released me.

October winds assist avian migrants. Long undulating skeins of Canada geese ride south on northerly winds. Their resonant honking makes even the nature-oblivious look skyward. I call these brisk northwest winds "the hawk winds." On these special days I often scan the skies hoping to see a migrating hawk or eagle. With its wings swept back and buoyed by invisible winds, the bird is escorted swiftly southward without so much as a wing flap or a great expenditure of energy. Flocks of broad-winged hawks passed in mid-September, but in October, the hawks generally migrate alone; a red-tailed hawk, a sharp-shinned or was it a Cooper's hawk? Perhaps an elusive peregrine falcon will streak across the horizon or a wandering golden eagle.



MOONLIT INK

October winds make me feel good. When I inhale the cold, fresh air, I feel alive. These winds replace the sultry stagnation of late summer and herald Wisconsin's annual march into winter, my favorite season.

Hawk spotter Anita Carpenter watches the wind on walks near her Oshkosh home.

COMMENT ON A STORY?

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

FEEDING DEER

Please consider devoting even more space in an issue to informing readers about serious problems created when people choose to feed and tame white-tailed deer.

We live in a subdivision of about 30 homes on a peninsula of Lake Sinissippi in Dodge County. The south end of the peninsula is bordered by woods and fields grading to farmland. In 16 years, we've never had a problem with deer. Four years ago, a new homeowner near the wooded area began regularly feeding deer close to his house so he could watch them. Since that time, deer problems have gotten progressively worse.

We garden and have planted hundreds of shrubs, trees and flowering plants to make our yard a haven for dozens of bird species. On summer evenings we are visited by four to seven browsing deer nightly that have become so accustomed to lights, sounds and people that they are almost impossible to chase away. I have lost at least 50 hostas, all my rose bushes, every single young maple tree, all my chokeberry bushes, lilies, mock orange, grasses, purple plum trees, a mature Pagoda dogwood and highbush cranberry. Our losses exceed $2,000 and there's no compensation program for homeowners.

We have installed security lights to see the deer coming and chase them off several times a night. This man's feeding has also attracted dozens of raccoons.

Feeding in subdivisions is a bad idea. When wild creatures lose their fear of humans, the destruction to habitats we have nurtured is devastating. Animals are lovely to look at in their natural habitat, but Please! Do not feed!

Gloria L. Polzin
Juneau

I can't begin to state my disappointment in the story concerning the Deer 2000 initiative on baiting ("The Bait Debate," December 1999). I think your article only gives one "skewed" side of the issue. As a baiting and feeding committee member, it was baiters (on the committee) who insisted the ethics issue not be mentioned in the recommendations. Those of us opposed to baiting argued this point for hours. Also, every biologist and veterinarian attending the meetings stated that food plots had little in common with bait piles. In another instance, a DNR biologist stated that baiting and feeding is in large part responsible for the recent boom in deer population. Animals are being fed on private lands and are therefore unavailable to hunters.

Mr. Aulik also stated that "people are telling him that baiting allows for cleaner kills." A study from Texas concluded there are no differences between baiters and non-baiters concerning cleaner kills. I could go on, but the fact is that both committee chairs own land on which they manage "their deer." [Without feeding] they might have to hunt rather than attract more deer.

Jay Cornell
Spooner

TARGET EXOTICS

I realize that mourning dove hunting will be decided elsewhere, but I agree with your June writer, Paula Smith that native birds should be left alone.

Why can't would-be dove hunters eat the bigger, non-native rock doves that are often considered pests? People who have homing pigeons could keep them "home" during hunting seasons and those breeding fancy pigeons should keep them caged anyway.

I'm concerned that we don't make the same mistake as the passenger pigeon that just 100 years ago had flocks so thick they darkened the skies. Now they are extinct. I say if you want to eat squab, then target the exotic species and let the natives live.

Diane Christianson
Elko, Minn.

FISH SNAPPER

A photo on p. 26 of our June issue showing a boy catching a crappie in winter was taken by Jerry and Carol Knabe, ByGolly Creek Photography of Nelson, Wis.

NATURALLY SPOOKY

I thought readers might find the enclosed picture as interesting as we did. The birds and hornets created this spooky nest in a tree in our backyard. We saw it just a week or so before Halloween as the leaves dropped!

Mary and Bill Hendrickson
Oxford

TALE OF TWO RIVERS

I live on the Fox River just below Pistakee Lake in Illinois and we have been arguing about the source of this waterway. I see a Fox River on the map flowing out of Green Bay. Is there more than one Fox River in Wisconsin?

Evelyn Mac Rose
McHenry, Ill.

There are, indeed, two Fox Rivers. The Fox River in Wisconsin starts near High Cliff State Park in the Town of Harrison and actually flows north toward Green Bay on a 39-mile route. We refer to the Fox River near your home as the Illinois Fox. It starts at Fox Lake just north of the McHenry County line and flows south through 12 communities then empties into the Illinois River at La Salle.

October delights

The trees are in their autumn beauty,
The woodland paths are dry,
Under the October twilight the water
Mirrors a still sky;
Upon the brimming water among the stones
Are nine and fifty swans.

— W.B. Yeats,
The Wild Swans at Coole, 1919.

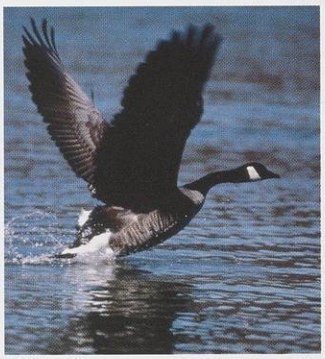
It's a month known to cast a spell on everyone from poets to major-league relief pitchers. You too can join the general swoon prompted by October's charms. TRAVELER presents a few ways to celebrate this most enticing month:

Honor Wisconsin's Father of Ecology by hiking the **Aldo Leopold Environmental History Trail**, a five-mile ramble through forests, prairies, savannas, ponds, marshes, working farmsteads and an 1870s village. Pick up the trail at Old World Wisconsin, just south of Eagle. The marked trail helps hikers identify plant species typical of each landscape and to understand the historic relationship between land and people. A fascinating integration of Wisconsin's landscapes and cultures will greet you at every turn. Old World Wisconsin is an outdoor museum of immigrant farm and village life operated by the State Historical Society; it's open through October 31 from 10 a.m.–5 p.m. weekends, 10 a.m.–4 p.m. weekdays. 262/594-6300.

Honk with the experts during **Saturday Goose Talks** at the Marsh Haven Nature Center in Waupun. The hour-long, hands-on presentations will highlight Canada geese and the ecology of the Horicon Marsh — 32,000 fabulous acres of cattails and duckweed. The honking commences at 4 p.m. every Saturday in October. Call 920/386-2182 for more details.

While you're in the vicinity, tour the 36-mile Wild Goose Parkway (in a car); hikers and bikers can follow the 34-mile Wild Goose State Trail skirting the western edge of the marsh.

If geese don't blow your horn, choose a mid- to late October dawn to park yourself at one of the three observation towers in Gallagher Marsh at the **Sandhill Wildlife Area** near Babcock. You'll be rewarded for your early-morning roust with the sight of several thousand sandhill cranes greeting the day. Follow the 14-mile Trumpeter Trail, a self-guided auto tour winding through hardwood forests, oak savannas, prairies and flowages, and you'll see plenty of migrating waterfowl en route to points south. 715/884-2437.

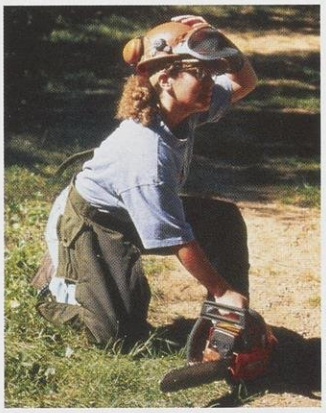


STEPHEN J. LANG

Honkers pile-up for the annual trek south. Join the geese at Horicon for the sunset serenade.

Mid-October to early November is a good time to migrate over to **Rieck's Lake Park** in Alma. Tundra swans are the draw here; the big birds follow the Mississippi Flyway, accompanied by herons, bitterns and great egrets. All enjoy a pause at this congenial rest stop, and you will, too. 608/685-4249 offers a recorded message.

Spend a weekend **Exploring Forests and Forestry** with BOW — Becoming an Outdoors-Woman. The two-day workshop offers woodland owners, enthusiasts and educators hands-on opportunities to learn tree identification, forest and watershed management, tree pruning and planting, wildlife management and more. The workshop will be held October 13–15 at Camp Helen Brachman in central Wisconsin. For more information call toll-free 877/BOWOMAN or e-mail peggy.farrell@uwsp.edu. Visit BOW on the web: www.uwsp.edu/bow/.



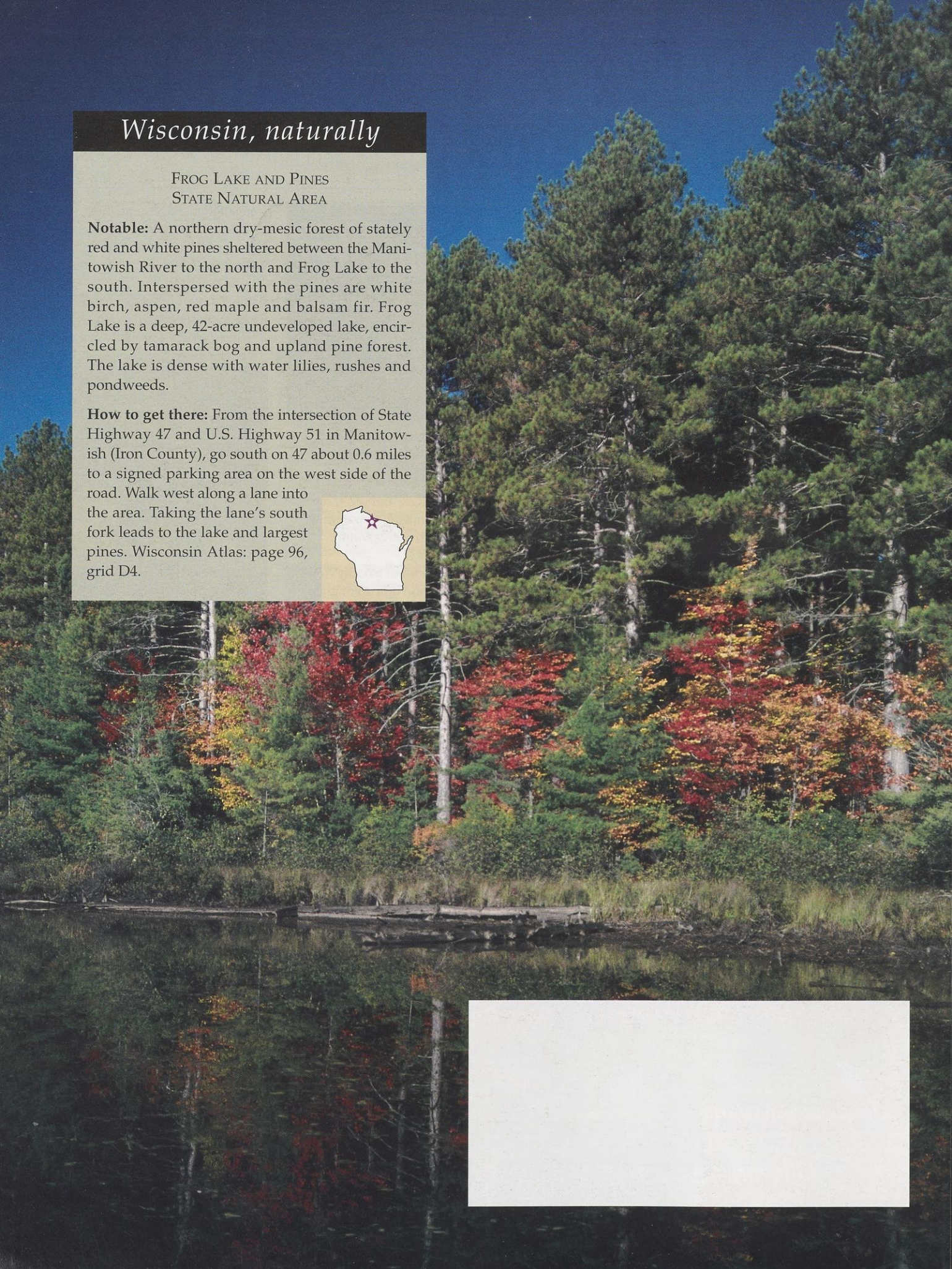
ROBERT QUEEN

BOW branches out to teach tree identification and woodland management.

Finally, if you're a fanatic for the finest in fall color, commit this phone number to memory: 1-800/432-TRIP. It's **Wisconsin's Fall Color Hotline**, operated day and night, year-round, by real live folks who know where the foliage is peaking all around the state. (Ask nice and they may divulge secret scenic locations for color viewing!)

A panorama of tundra swans and waterfowl provide an eyeful and an earful at Rieck's Lake Park in Alma.

RJ & LINDA MILLER



Wisconsin, naturally

Frog Lake and Pines State Natural Area

Notable: A northern dry-mesic forest of stately red and white pines sheltered between the Manitowish River to the north and Frog Lake to the south. Interspersed with the pines are white birch, aspen, red maple and balsam fir. Frog Lake is a deep, 42-acre undeveloped lake, encircled by tamarack bog and upland pine forest. The lake is dense with water lilies, rushes and pondweeds.

How to get there: From the intersection of State Highway 47 and U.S. Highway 51 in Manitowish (Iron County), go south on 47 about 0.6 miles to a signed parking area on the west side of the road. Walk west along a lane into the area. Taking the lane's south fork leads to the lake and largest pines. Wisconsin Atlas: page 96, grid D4.