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# WISCONSIN NATURAL RESOURCES

December 2000 \$3.00

Visit the  
Willow Flowage

Arsenic  
in drinking water

A new TV show —  
"Into the Outdoors"

Building  
ponds





# Barred

## Barred from the woods

Seldom seen, but often heard, the eight-hooter enlivens a winter walk.

Anita Carpenter

Silhouetted against the mature white birch, the large bird reminded me of a giant, snow-tipped pine cone. I approached as quietly as I could, but nothing escapes an owl's notice. It turned its head and stared down at me with soulful, chocolate eyes. For several moments, the barred owl gazed at me as I watched him. Then on broad, silent wings, he disappeared back into the forest, skillfully avoiding a tangle of horizontal branches. Our meeting was much too brief.

Barred owls, *Strix varia*, are a treat to see because they spend most of their lives hidden from view in deep shadowy forests. Although we seldom see them, we hear them often. Barreds are fairly vocal with a repertoire of barks, hoots, yells, shrieks, moans and groans that penetrate the darkness. Their most familiar call is a low, mournful rhythmic eight-hoot often transcribed as "Who cooks for you? Who cooks for y'all" with the final drawled-out note sliding down the scale. On a still night, the haunting owl talk can travel a mile or more.

Barred owls are big, averaging 21 inches long. The females are larger than the males. Under the fluff of gray-brown feathers, the females weigh just over a pound and the males, just under that amount. In coloration and markings, the sexes are identical.

Though their size is impressive, barreds are only the fourth largest owls found in Wisconsin. The winter-visiting snowy owl (*Nyctea scandiaca*), great gray owl (*Strix nebulosa*) and the resident great horned owl (*Bubo virginianus*) are all bigger.

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FRONT COVER: Mallard in a snowstorm.

R.J. & LINDA MILLER, La Crosse, Wis.

BACK COVER: New Hope Pines State Natural Area, Portage County. For a map or more information, contact the State Natural Areas Program, DNR, Box 7921, Madison, WI 53707.

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# Solitude *on the*

A new master plan  
intends to maintain the  
wild character of this  
watery jewel.

*Story by James C. Bishop, Jr. and Vicki Miazga  
Photos by Robert Queen*

**T**he Chippewa Flowage may have more musky; the Turtle-Flambeau Flowage more loons, osprey and eagles; but the newest member of the wild waters family is closer to true wilderness, even though it's only 15 miles from busy Minocqua and 12 miles from Tomahawk.

Surrounded by swamps, bogs and other watery lowlands, the Willow Flowage is isolated from roads and development. Year-round residents include three wolf packs and good populations of deer, bear and grouse. Musky and walleye abound within its depths. Colonies of beaver and families

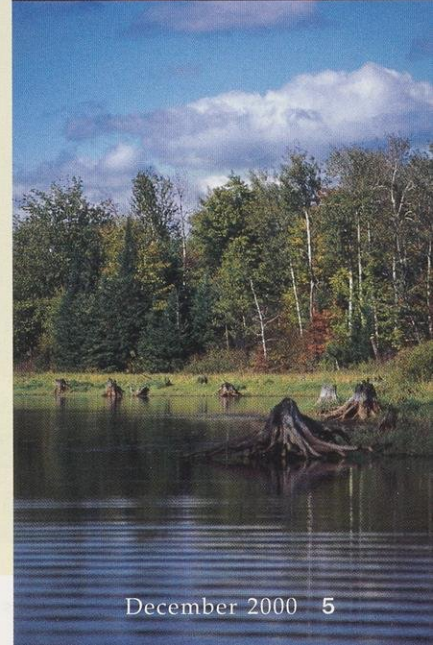
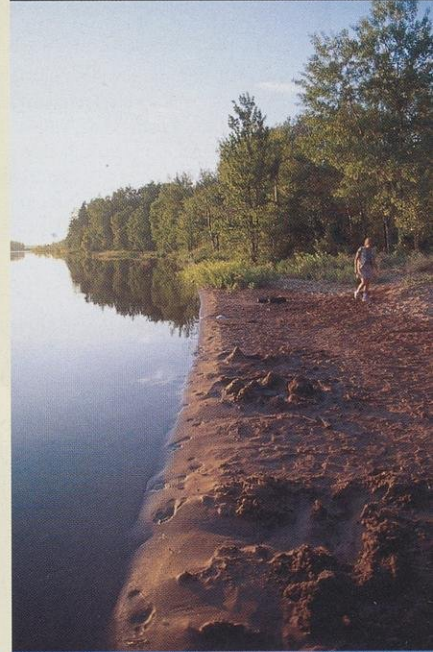
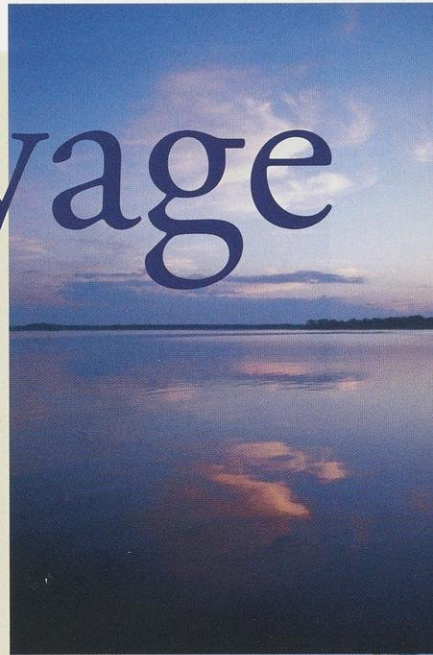
of river otter call the Willow home. The tremolo of the loon is often heard at day's end.

This 6,300-acre waterbody started out as a low area at the confluence of the Tomahawk, Squirrel and Willow rivers where a dam was built in 1926 to provide electricity. Five other smaller streams feed into the flowage. In all, this watershed drains 310 square miles of nearly inaccessible country.

To the north and south lie 12,000 acres of swampy low areas mixed with rolling uplands that provide no direct access to the flowage. Occasional logging roads and dusty fire lanes attest to past forest management by the former owners, a paper



# Willow Flowage



mill in Tomahawk. The only hard-surfaced roads are Willow Road, four miles off the west shore, and the Cedar Falls-Willow Dam Road skirting the eastern edge. Willow Dam Road, which crosses the dam, bumps the shore for a short distance and provides a partial view of the reservoir held behind the dam.

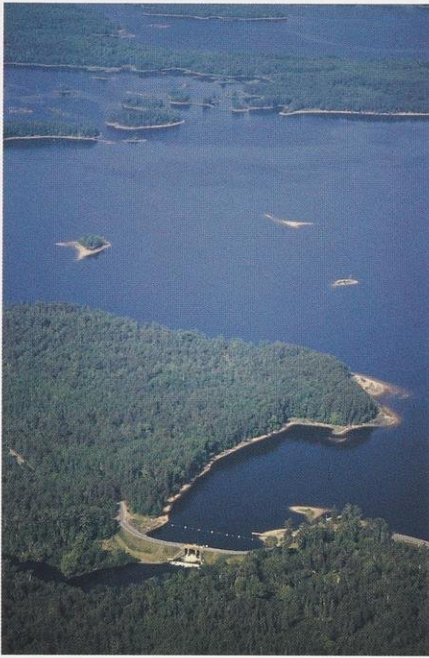
The dam is owned and operated by the Wisconsin Valley Improvement Company (WVIC). The reservoir provides hydroelectric power for industrial plants along the Wisconsin River. WVIC still owns all the land below the ordinary high water mark, but the state

started purchasing the surrounding Willow lands in November 1997.

The initial purchase included 8,720 acres of mainland and 106 islands that included 64 miles of shoreline with an additional 9.4 miles of frontage in a protected easement. Only five percent of the shoreline, mostly on the south-eastern end, is in private ownership where

The Willow Flowage offers a wild escape to undeveloped land and water just a short drive from Minocqua and Tomahawk. You'll find restful sunsets, plenty of quiet shoreline to wander and picturesque stump fields. Diverse habitat gives anglers a choice of fishing shallows, weeds or wood.





Willow Dam on the southeastern portion formed the flowage that backed up the Tomahawk, Squirrel and Willow rivers, and five streams. Willow Dam Road provides paved access to launch sites at the southern end (below right). Two additional launches — one to the northeast and the other on the west shore — can handle powerboats. Canoes can launch from many areas.

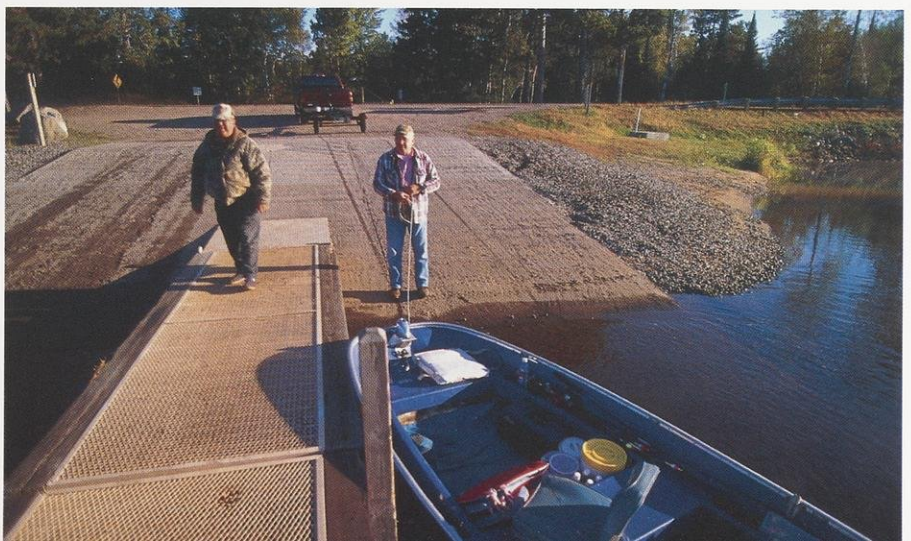
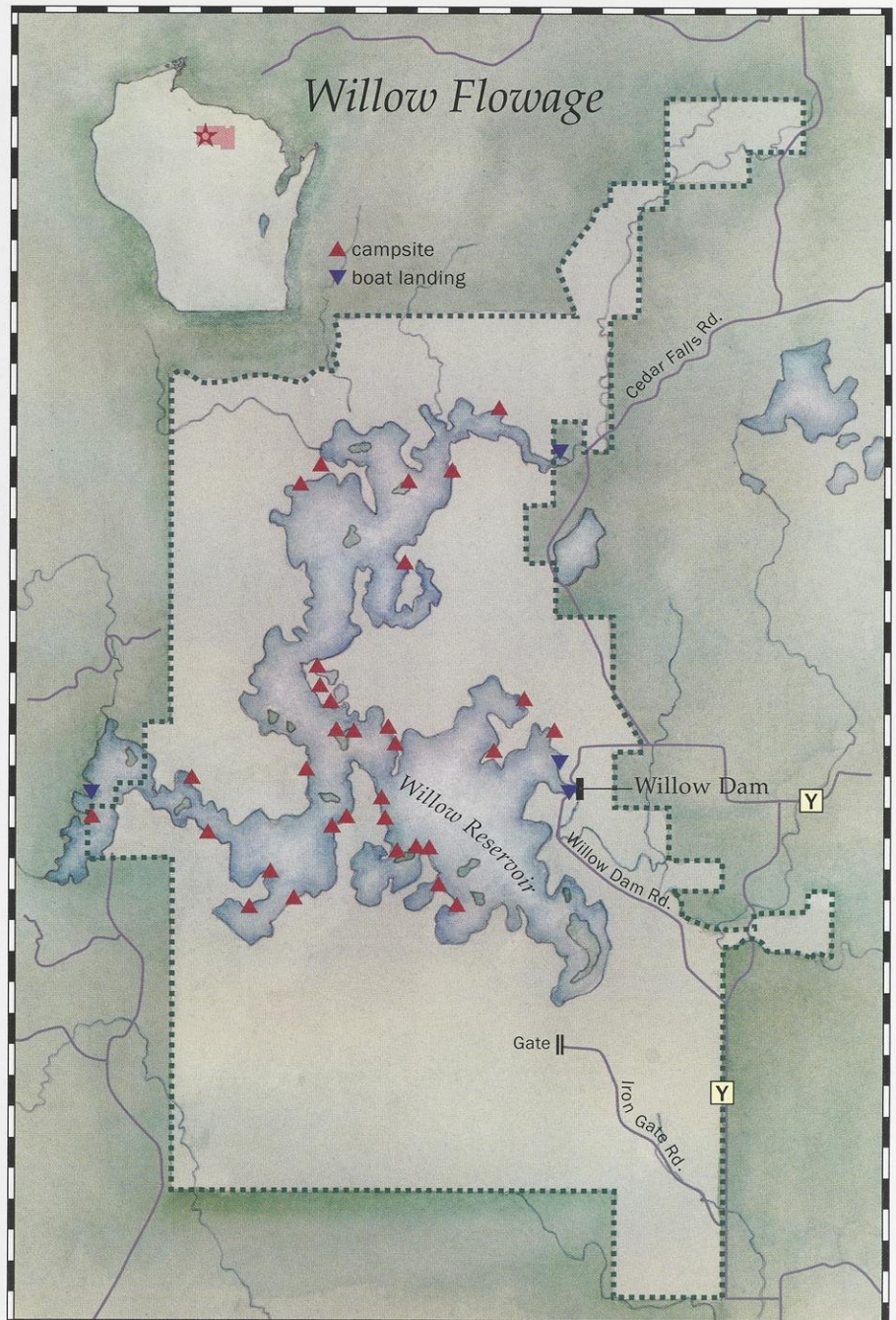
four resorts, a commercial cruise service and about 20 seasonal and permanent homes border the water.

Last year, the Department of Natural Resources added another 7,425 acres to the property, mainly on the north and south ends, in a land buy known as the "Great Addition." Currently 16,174 acres around the flowage are in state ownership.

### Great fishing, quiet camping

While many people come to enjoy the solitude of the flowage, the walleye fishing is an even bigger draw. Wily walleye find plentiful habitat among the rock, gravel, and stumps at water's edge. No fish are stocked here where natural reproduction can sustain the fishery. Panfish, northern, musky and bass can be caught here.

Seasonal fish refuges at Cedar Falls on the north end and Willow Rapids to the west protect spawning walleye and musky. Angling is prohibited from April 10 through May 20 in these posted areas.





Most anglers launch their boats at one of two access sites on the east shore near the dam. An improved private launch site is available for a fee on the property's north end. You can launch a canoe from several unimproved sites on industrial forestland along the west side. Angler use is generally highest in the spring and fall when walleye search the shallows for small prey; the fish head for deeper, cooler channels once summer winds warm the water.

Starting around Memorial Day, campers and daytime visitors take to approximately 55 campsites on the islands and shore. Some sites provide primitive toilets; most don't, and there's no drinking water available.

All the campsites were evaluated after the state acquired the property. Paul Bruggink, DNR property manager, said some of these old camps are too close to the water's edge and the water table, posing a potential pollution risk.

"What we have proposed in the master plan is 30 single-unit campsites and five group sites," Bruggink said. "We believe this will meet the camping demand while maintaining the wild character of the flowage."

The plan proposes that camping be allowed only at designated sites equipped with box latrines. Users must pack out all their garbage. As in the past, campsites will be available on a first-come, first-served basis. Camping will be restricted to 10-day stays and once occupied, a site can't be left unattended for more than one night.

"In the past, some people left tents up all summer and came back whenever they felt like it," Bruggink said. This prevented use by other people looking for sites. Most campsites on the Willow are accessible by water and most campers arrive by power boat. Canoeists also find solitude here, especially in drier years when water levels drop six to ten feet. Shallow draft boats can reach areas nearly inaccessible to motorized craft.

Water quality on the flowage is rated "excellent" by state water specialists. In 1997 the Willow was designated as an Outstanding Resources Water, meaning any discharges from nearby communities or industries must be as clean or cleaner than the current water.

The water's brownish tea color is the result of natural tannins produced in the more than 4,000 acres of cedar, tamarack, black spruce and alder lowlands. Those lands, along with 12,000 acres of upland forest, provide a natural buffer around the flowage.

Paper and pulp mill managers from Tomahawk purchased the heavily logged upland forest portion of the parcel shortly after the flowage was created in 1926 and began planting for the future. Thanks to their management, the forest surrounding the Willow Flowage today consists of aspen, red pine and

sport without interference.

In one case, motorized recreationists wanted to use the Iron Gate Road as a trail through the property to connect with other existing trails located outside the western property boundary. Nonmotorized silent sports enthusiasts felt the Iron Gate Road should either be closed at Highway Y or relocated just west of an existing ATV trail. This would in effect limit motorized use on the south end of the property.

Following numerous public meetings and compromises, the master planning team proposed building a new



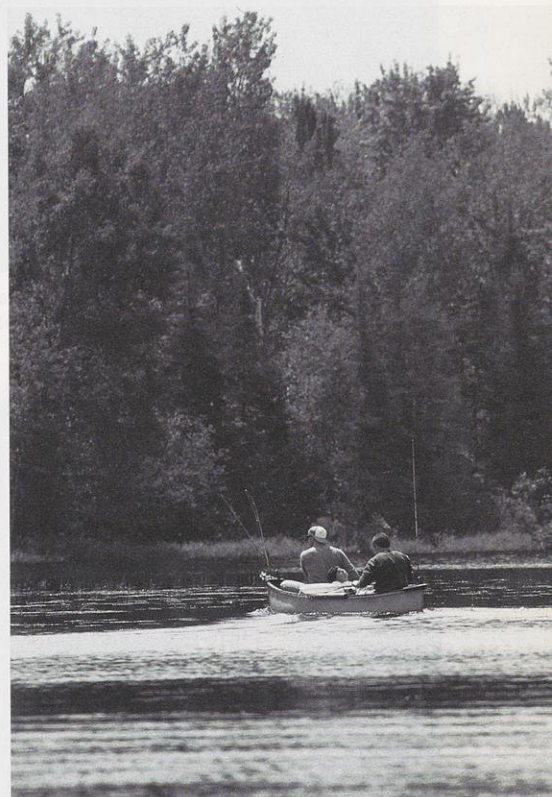
Thirty single campsites and five group sites will provide box latrines, but no running water or trash pickup. You can camp for up to 10 days at a site, first-come, first-served. Canoeists can reach some of the more secluded campsites in shallow waters. Be prepared to pack in all your supplies and drinking water.

red maple with a smattering of white birch, fir, and other tree species.

DNR Forester Tim Friedrich says the area can sustain a diverse number of tree species of varying ages and provide a variety of forest products, wildlife habitat and opportunities for recreation.

### How different users view the Willow

Recreation sparked the most controversy as the Willow's master plan was developed. All-terrain vehicle (ATV) riders and snowmobilers had some heated discussions about trails with hikers and other silent-sport enthusiasts. Both groups wanted rights to their particular





gate 2.3 miles from Highway Y. This would allow greater use of the area by motorized vehicles, but prevent direct access to the western trails. Neither group was entirely satisfied with this outcome.

Although the nonmotorized group requested restrictions on existing motorized trails, the planning team decid-

ed some trails should be designated for motorized use. ATVs and snowmobiles will be restricted on other parts of the property, and some parts will be off-limits to vehicles.

When water levels drop, people in cars, trucks, and ATVs have driven out onto the exposed shoreline. Bruggink said this illegal activity will not be toler-

ated and will draw enforcement action. Driving on shore destroys plants, causes erosion, compacts the soils, and ruins fish and wildlife habitat. "It goes against all the things this near-wild area stands for," he said.

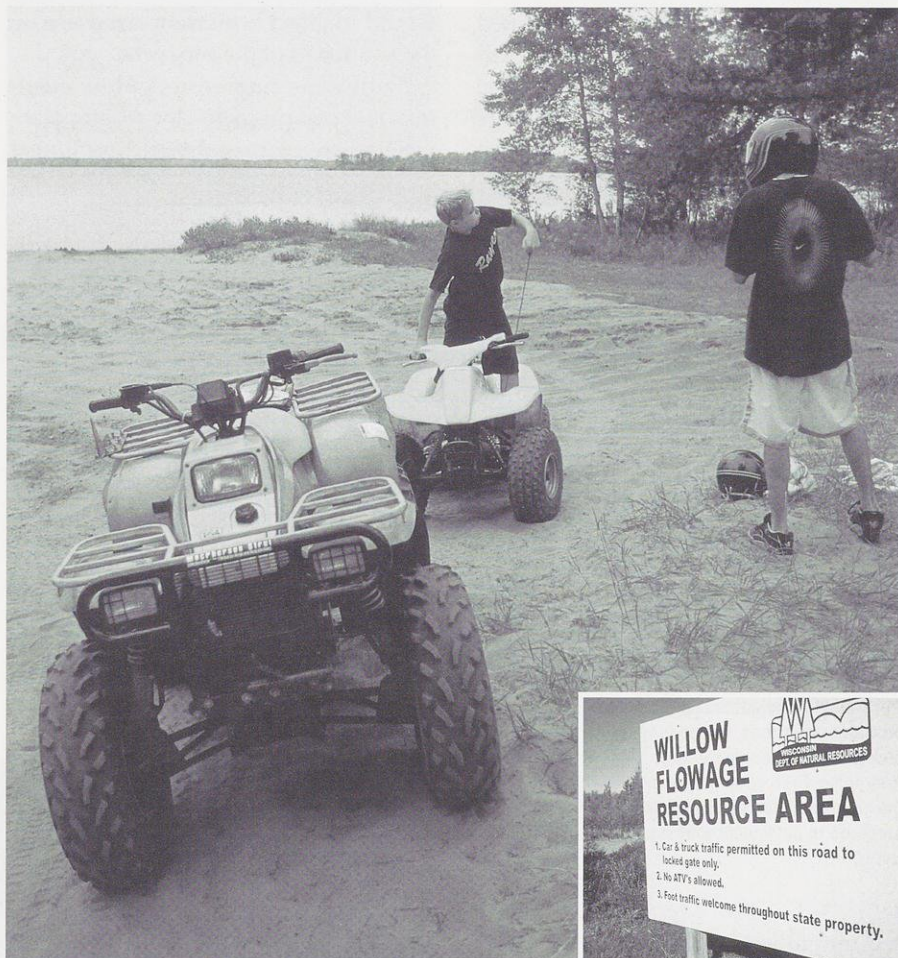
The recreation plan emphasizes quiet, dispersed activities in the forested setting to maintain solitude and a sense of remoteness. These activities include hunting, hiking, fishing, trapping, cross-country skiing and snowshoeing. Mountain biking will be allowed on logging roads unless posted closed.

"More than 800 people who commented and helped us develop the master plan told us they essentially wanted to keep the area wild and pristine," said Kermit Traska, the planning team co-leader. "Our participants' first action was developing a vision statement that emphasized preserving and protecting scenic beauty and solitude in the area."

Visitors who choose not to camp can use one of four resorts located on a mile of shoreline near the dam. To view the flowage they can hop aboard the *Wilderness Queen*, an 80-foot excursion boat owned and operated by Tom Tiffany and his wife Chris.

The family has lived on the flowage since they purchased the business 10 years ago. Tiffany was drawn to the waterway for its remote, undeveloped feeling. "That's why so many of my customers come here," he said. "Twenty minutes from the dock you do not see signs of civilization. There aren't too many places in Wisconsin where you can do that."

For many, a walleye on the end of a line captures the Willow experience. For others, it's an eagle soaring above the treetops or a gold sunset across shimmering island-studded waters. A few enjoy a barefoot walk down a sandy, driftwood-strewn beach. Flowage managers, guided by a management plan developed by those who use and live in the area, will ensure that the natural, undeveloped scenic beauty of the Willow will be preserved and enhanced. ■



(above) ATV routes on marked trails aim to protect fragile shorelines.

(below) No boat? Cruises on the *Wilderness Queen* offer visitors a chance to enjoy Willow Flowage wildlife and panoramas from the water.



James C. Bishop, Jr. is the public affairs manager in DNR's Northern Region. Vicki Miazga is the Associate Editor of The Lakeland Times newspaper in Minocqua.



# WELL ABOVE,

Arsenic, a trace element once locked in bedrock, is turning up in some Wisconsin wells.

*Megan Matthews*

In spring 1998, before the King family bought their home near Oshkosh, they tested their well water for arsenic. Although the house was only six years old, a second deeper-cased well had been drilled to get past an aquifer where higher arsenic levels had plagued the previous owner. No arsenic was detected; the Kings bought the home that summer and moved in.

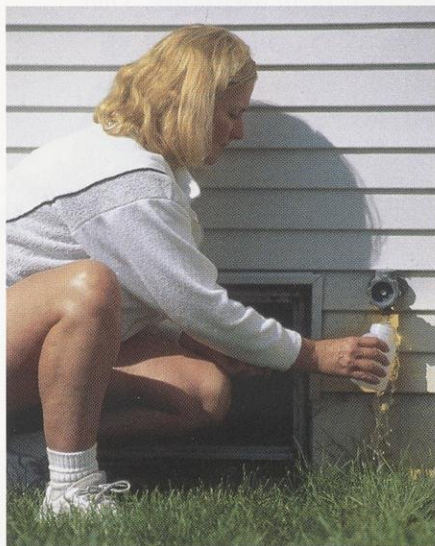
Three to four months later there were signs of trouble from the tap. Laundry was stained orange-brown. The Kings consulted several companies to treat what appeared to be high iron in the well water. Finally, a consultant

asked the family if the well had been tested for arsenic. The Kings assured him the well had been tested less than a year ago. The company rep said that might not be good enough: Arsenic levels can change over time, and often water that's high in iron can also be high in arsenic.

Test results came back in April 1999, the same week their twins were born — arsenic was present in the water at 131 parts per billion (ppb) — well above the current national standard of 50 ppb.

"Our whole life changed after getting those test results back," said Mrs. King. "We don't use our water to prepare formula, rinse the bottles, prepare food, brush our teeth, or wash fruits and vegetables. We use it to do our laundry and other chores, but I can't take my kids outside and fill up a wading pool because I'm afraid they'll swallow some water."

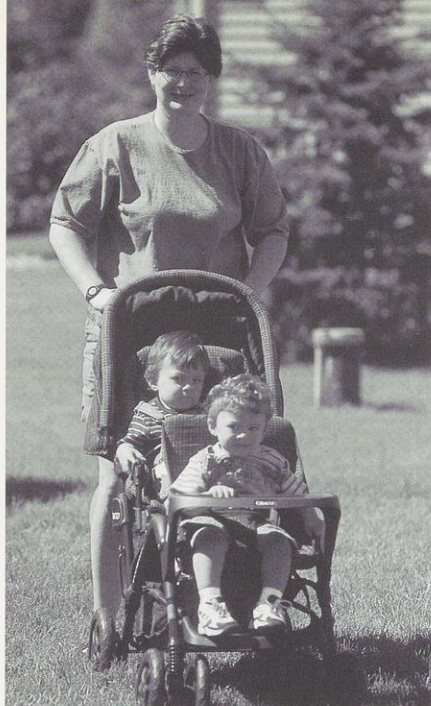
By September 1999, the Kings were part of a DNR program that is testing how different treatment devices can reduce arsenic exposure. The experimental systems are installed in private homes where arsenic levels can be checked monthly. In the King house, an ion exchange system now removes arsenic at one spigot. The Kings wanted a system to treat all the water in the house. Such a system was installed, but broke once and pipes leaked in two



ROBERT QUEEN

# TROUBLE BELOW





ROBERT QUEEN

(previous page) Kelley O'Connor, DNR water supply specialist in Oshkosh, regularly tests household water to track changing arsenic levels.

(left) Like many families drawing well water from bedrock where arsenic occurs naturally, the King family monitors and treats their water supply.

The Stilsons use bottled water for cooking and drinking, and have gotten regular medical checkups. Still, experts can't guarantee that using arsenic-contaminated water for bathing won't cause health problems. "They think it's OK," said Stilson, "but they can't give me one hundred percent assurance. That bothers me."

### A natural element set free by the pressures of development?

Arsenic (As) is a tasteless, odorless element that occurs naturally in soil, bedrock, groundwater and the oceans. It is found in both organic and inorganic forms. Organic forms found in ocean fish and seafood are relatively nontoxic. However inorganic arsenic, the form found in many Wisconsin wells is a potent poison; ingesting small doses over many years has been associated with a variety of cancers, nervous system damage, diabetes and blood pressure changes.

Because arsenic is a natural part of our environment, everyone is exposed to trace amounts in foods, wood and coal smoke, tobacco products and dust from some industrial processes. Normally, arsenic is excreted from the body within a few days. Medical problems are usually associated with long-term exposure to moderately high amounts of arsenic, though short-term exposure can also cause health problems if levels are high enough.

There are pockets of arsenic contamination statewide, but wells drilled into bedrock layers called St. Peter Sandstone and Galena-Platteville Dolomite in northeastern, southeastern and southwestern Wisconsin appear to contain higher levels of arsenic. These layers are the primary sources of drinking water in Outagamie, Winnebago and portions of Brown counties. More than 20,000 private drinking water wells and 434 public water systems draw water from these rock formations.

Arsenic-contaminated groundwater is a relatively recent discovery in Wisconsin. In fact, DNR scientists first became aware of the problem in 1987 when arsenic was detected in water samples drawn from groundwater near a proposed landfill site.

Researchers believe that this arsenic, trapped in bedrock for millions of years, may be released into groundwater as a consequence of increasing water use in the growing region. Water withdrawals are lowering the water table from one to three feet per year, and the demand is increasing rapidly with

*"No one else seems to have a problem. Arsenic contamination is very sporadic and levels fluctuate so widely. I wish I'd done more research."*

places. The family was left with a water supply that corrodes the copper pipes and causes appliances to rust. The family is planning to drill a third well, using funds recently approved from the state's Well Compensation Program.

After learning of the problem, Mrs. King urged her neighbors to have their water tested for arsenic, too. "No one else seems to have a problem," she said. "Arsenic contamination is very sporadic and levels fluctuate so widely. I wish I'd done more research."

The Stilson family, who built in the area in 1995, knew there were regional concerns about arsenic, but their builder assured them their well was drilled and cased deep enough to bypass the problem. Then, earlier this year, Kevin Stilson noticed that ice from the ice maker was turning orange. A test confirmed his suspicions: high levels of iron and arsenic at 330 ppb in their water, almost seven times the level deemed acceptable. The Stilsons contacted the DNR and were offered an experimental whole-house water treatment system. Because inorganic arsenic tends to attach itself to iron, removing the iron has successfully reduced arsenic as well.

*"They think it's OK, but they can't give me one hundred percent assurance. That bothers me."*

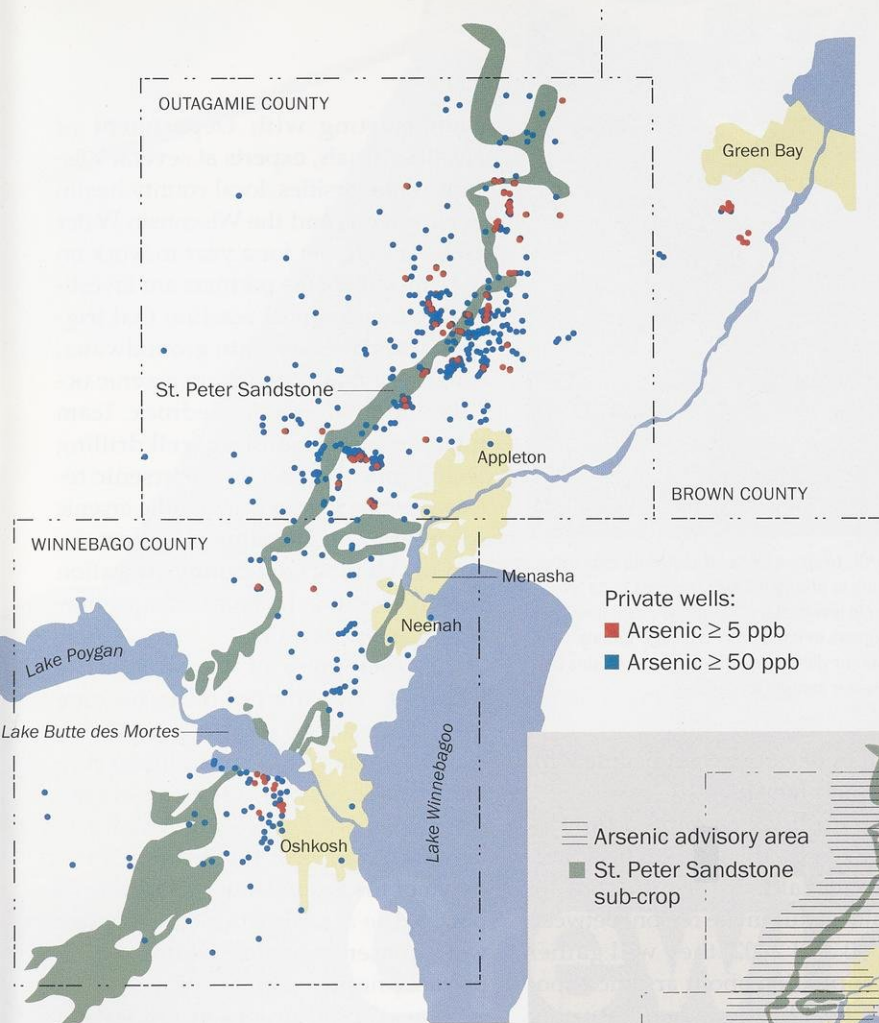


ROBERT QUEEN

A treatment system removes iron and arsenic at the Stilsons' house. Like many, they are drinking and cooking with bottled water until longer-term solutions are developed.

roughly 1,000 new wells drilled per year in Winnebago and Outagamie counties alone. An untested theory is that more openings in the bedrock layers may let more atmospheric oxygen seep into the aquifer, slowly oxidizing sulfide minerals in the rock and releasing iron, arsenic and other trace ele-



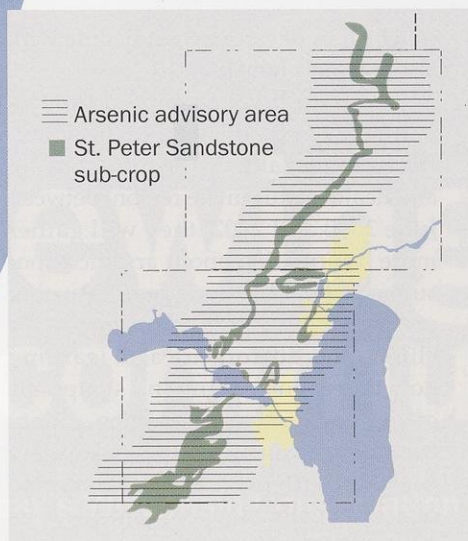


(above) Private wells where arsenic has been detected in drinking water in relation to the bedrock formation where arsenic occurs more frequently.

(below) Just below these men in a bedrock quarry west of Oshkosh, you can see the St. Peter Sandstone where arsenic is trapped in the rocks.



THOMAS RIEWE

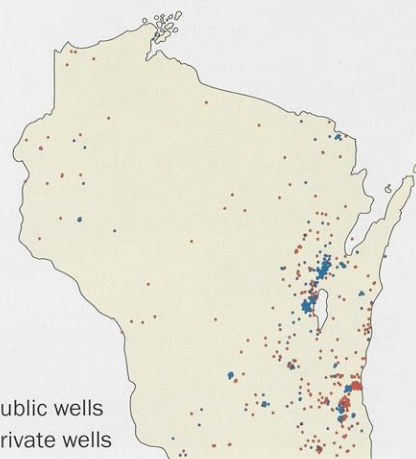


ments. The process is similar to what happens when a wet piece of iron begins to rust.

The methods used to construct and disinfect wells may also add oxygen into the aquifer. Air-rotary drill rigs pump huge amounts of air into the bedrock. Chlorine products used to disinfect wells, may trigger chemical reactions that release arsenic from bedrock. Current research has neither confirmed nor disproven these theories.

Arsenic concentrations in area wells are highly variable, ranging from no detection to one well with 15,000 ppb — a level that can quickly lead to stomach upsets, diarrhea and nerve damage. Unfortunately, because of the way arsenic exists within this bedrock, there is no

Public wells  
Private wells



(above) A statewide look where arsenic has been detected in public and private drinking water supplies.

(below left) Within five miles of either side of the St. Peter Sandstone, new wells are cased deeper and strategies are enforced to try and reduce the likelihood of arsenic infiltration into water supplies.

way to accurately predict whether water from a new well will pose a risk of arsenic exposure. Two out of three wells drilled in the area don't show signs of arsenic contamination and 95 percent of wells tested in the last 13 years have concentrations of less than 50 ppb, the current standard for public water supplies. Even wells drilled across the street from each other can show wildly different levels of arsenic in the drinking water.

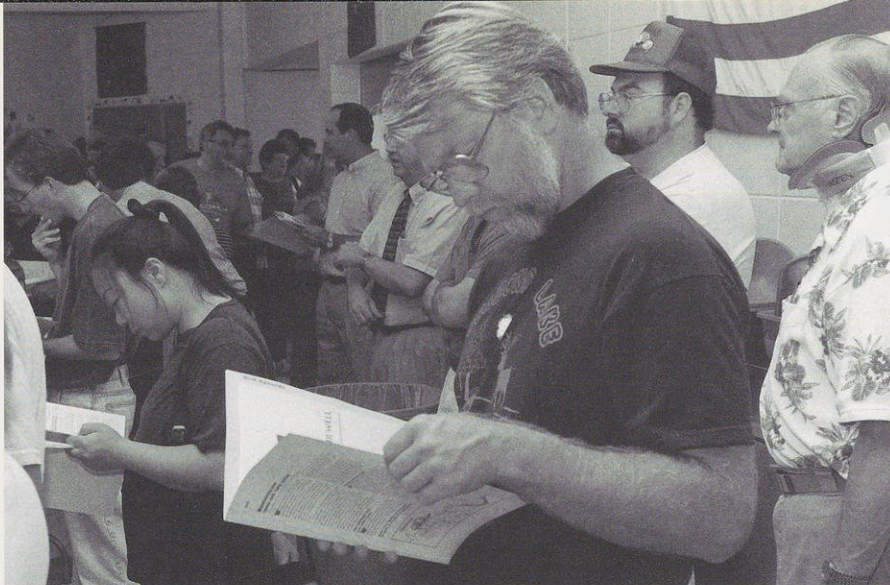
Although there are still more questions than answers, water supply experts, the health community and homeowners are taking this problem quite seriously. The Department of Natural Resources designated an "Arsenic Advisory Area" in these counties in 1993. Research showed that within the advisory area, it made sense to case new wells deeper.

"As a first step, research showed it made sense to drill and case new wells deeper through more rock in order to tap a different aquifer. The strategy is to avoid bedrock layers with arsenic by extending the steel casing deeper so water can be withdrawn from bedrock layers below the arsenic contaminated zones," explained DNR Water Supply Hydrogeologist Tom Riewe.

These recommendations seemed to solve the problem for a while, but time

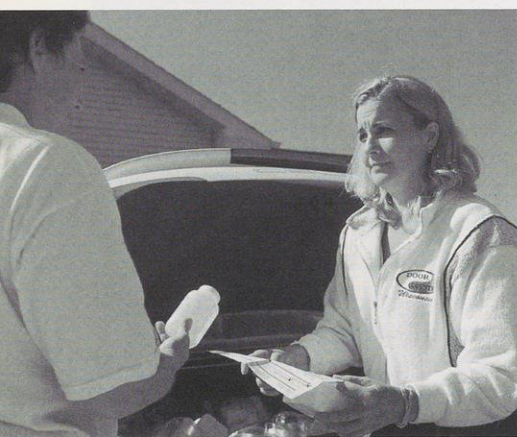
MAPS BY MOONLIT INK FROM DNR DATA





ROBERT QUEEN

(above) DNR, towns, health officials and labs offer homeowners in affected areas low-cost tests to track arsenic levels. Here, results are explained at a Town of Algoma meeting in Winnebago County. (left) O'Connor visits homeowners and explains how to draw a water sample for testing.



ROBERT QUEEN

is showing these steps may not be sufficient, as even deeper wells like the Kings' and Stilsons' are producing water with higher levels of arsenic.

## Evaluating personal exposure and community health

Experts calculate that drinking water containing 50 ppb arsenic that is consumed over a 70-year period would increase a person's chance of getting cancer by as much as 3 cases in a population of 1,000.

In 1993 the Wisconsin Department of Health and Family Services started working with local health officials to gather information about people who may have been exposed to higher levels of arsenic in their water for several years. Health surveys were collected from 1,838 people who drew their water from private wells in the region. Analysis showed that people who drank water containing more than 50 ppb arsenic for 10 years or more were seven times more likely to report skin cancer, and five times more likely to report

other types of cancer than people with lower arsenic intakes.

These findings prompted the Department of Health and local health officials to reevaluate arsenic exposure and health status in the region. Between June 2000 and 2002, they will gather more information about arsenic exposure and health among families using private well water in the region. Area clinics and doctors are also learning how to recognize signs and symptoms of arsenic exposure. In addition, county health departments and townships are working with private laboratories to offer convenient low-cost arsenic tests (about \$30) for residents.

## New standards and research expected

The U.S. Environmental Protection Agency has proposed lowering the arsenic standard in public water supplies from 50 ppb to 5 ppb based on health concerns from prolonged exposure. These tighter standards would also be used to advise private well owners. The serious health risks warrant annual water testing for all wells in the advisory area.

Families whose water contains high levels are advised to discuss possible effects of exposure with their family physicians.

Experts from the DNR's drinking water and groundwater program have

been meeting with Department of Health officials, experts at several Wisconsin universities, local county health departments, and the Wisconsin Water Well Association for a year to work on the problem. Some partners are investigating the chemical reaction that triggers arsenic release into groundwater, others are mapping where arsenic occurs within Wisconsin bedrock. Team members are examining well drilling techniques that can lessen arsenic release, testing methods to handle arsenic wastes trapped in treatment equipment, and developing community education programs across the state to share information about arsenic.

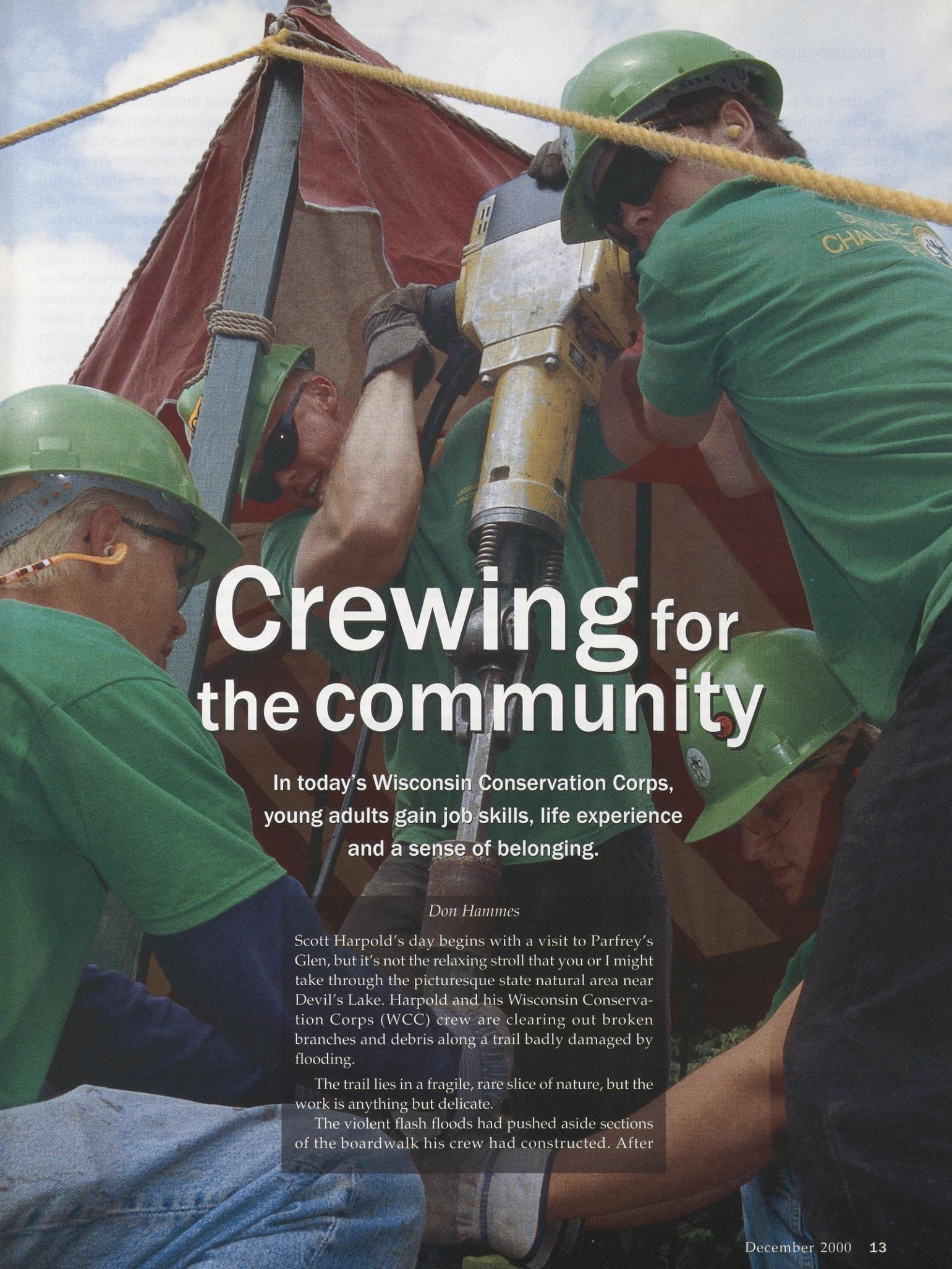
Another piece of the solution is working with the public to become more water-wise and less wasteful. While Wisconsin has an abundant supply of water, it needs to be managed properly in order to ensure enough safe drinking water for the future. Draw-down of the groundwater table may be part of the arsenic problem — better water conservation may become an important priority.

Several pilot programs are testing various treatment systems and determining how to keep the costs of arsenic monitoring and treatment affordable. Eventual solutions may include special well construction methods, setting wells with deeper casings, and whole house treatment systems. Private well owners may choose to form community water systems, group wells or neighborhood cluster wells. The leader of the work group, DNR Groundwater Chief Mike Lemcke, likens the investigation to having only 400 pieces of a 1,000-piece jigsaw puzzle on the table and not knowing how or if they fit together.

"We discovered the arsenic problem earlier in Wisconsin," Lemcke said, "and we're not waiting for others to find solutions that protect the health of private well owners. We decided to actively pursue our own, new research to come up with workable solutions in a reasonable timeframe."

*Megan Matthews writes about environmental issues for DNR's Drinking Water and Groundwater programs.*



A photograph of four Wisconsin Conservation Corps crew members working together. They are wearing green hard hats and green t-shirts. One member in the center is operating a large yellow and black jackhammer. They are positioned around a structure that appears to be a tent or a large tarp, with ropes and wooden poles visible. The background shows a clear blue sky with some clouds.

# Crewing for the community

In today's Wisconsin Conservation Corps, young adults gain job skills, life experience and a sense of belonging.

*Don Hammes*

Scott Harpold's day begins with a visit to Parfrey's Glen, but it's not the relaxing stroll that you or I might take through the picturesque state natural area near Devil's Lake. Harpold and his Wisconsin Conservation Corps (WCC) crew are clearing out broken branches and debris along a trail badly damaged by flooding.

The trail lies in a fragile, rare slice of nature, but the work is anything but delicate.

The violent flash floods had pushed aside sections of the boardwalk his crew had constructed. After



clearing the paths and pulling out the debris by hand, Harpold and crew bring in new lumber, realign and re-anchor railroad ties to shore up the trail. Trained young men and women use chain saws to cut through a large fallen tree trunk pinning one section of boardwalk against a rock. Other crew members use pry bars to extricate the boardwalk and move it back into place over the stream.

Foot by foot and section by section, the WCC crew stationed at Devil's Lake State Park learns what teamwork is all about.

### The program's scope

For 17 years the Wisconsin Conservation Corps has helped young adults learn job skills, build self-confidence and accomplish meaningful work for their communities in projects related to forestry, wildlife, fisheries, natural areas and energy conservation.

The forestry work focuses on timber stand improvement — brushing areas, thinning or pruning trees, and creating

optimal conditions for mixtures of species to grow. Crews also plant trees, create firebreaks and collect seeds for nursery tree production.

Many WCC crews assist in tagging and banding programs for fish, game and nongame species. Crew members work side-by-side with field researchers from the Department of Natural Resources, the U.S. Fish and Wildlife Service and the U.S. Forest Service to band osprey, geese and ducks or conduct population surveys of ducks, deer, snakes, fish, wolves and upland game birds.

Crews stay busy summer and winter creating and improving fisheries habitat. Last winter many of our northern crews cut logs and lashed together between 300 and 400 fish cribs, which were left on the ice to sink to lake bottoms during the spring thaw. The cribs provide cover and artificial structure in lakes where natural shelter is scarce. Crews also build and install half-log structures, brush shelters and anchor tree drops to harbor baitfish and small game fish.

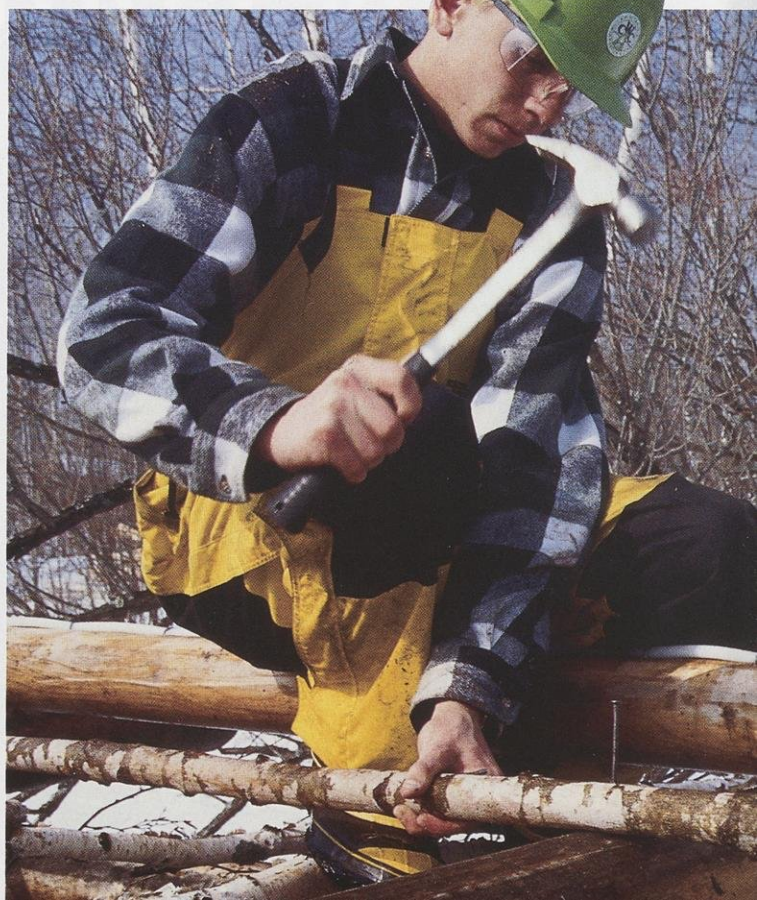
WCC crews install rocks and wooden structures to help trout streams stay cool, narrow, deep and free of silt. They also place boom covers, lunker structures, brush bundles and riprap. To protect streams from cattle and flood waters, corps members install stream-bank fencing, floodgates and cattle crossings.

In natural areas WCC crews restore prairies, cut exotic plants, conduct prescribed burns, and plant trees, shrubs and grasses.

Seven of the 55 WCC crews help rehabilitate low-income housing. In the Milwaukee area, crews are sponsored by the Social Development Commission, TransCenter, Esperanza Unida, and the Social Development Commission. Outside of Milwaukee, WCC crews helped the Wisconsin Coulee Community Action Program (CAP) in Vernon County, the Housing Partnership of the Fox Cities, and Project Help-Northwest Homes in Polk County with housing projects. Crew members learn construction skills using

(below) Corps members gain outdoor experiences and job skills. Here, a corps member assists in an osprey banding project.

(below right) Winter work includes assembling fish cribs along lakeshores. These will provide cover and nesting habitat for fish when the cribs nestle on lake bottoms in spring.





hand tools and power equipment to construct garages, stairways, interior walls and roofs, and work side-by-side with experienced electricians and plumbers to master basic wiring and plumbing skills.

WCC energy conservation crews repair or replace doors and windows, blow insulation into walls, blanket water heaters and wrap pipes with insulating tape. They also caulk cracks, install weather stripping and repair roofing. Following a year with the Corps, many members use their WCC and/or AmeriCorps education grants to attend a technical college where they become certified in a construction trade. Others choose universities and seek a broader education.

### Skills for lifelong learning

Once a means to hire the unemployed and complete conservation projects, the WCC is now dedicated to training young adults and helping them gain self-confidence and direction. Some Corps volunteers come from difficult, unstable family situations and have not



Energy conservation crews insulate houses for community improvement projects.

finished high school. Others are high school graduates who need help setting their sights on attending a technical college or university. WCC tries to help them all.

The Corps' FOCUS (Future Opportunities, Career Understanding and Success) program is a self-directed curriculum that members spend four hours a week completing during their workweek. The WCC education program provides:

- computer work stations at each crew site to promote computer literacy, key-

boarding skills and learning through computer-based training;

- direction to help members complete high school. In the past two years, more than 25 corps members obtained their certificate of General Education Development (GED). Many others completed one or more of the five GED tests;

- training modules to learn equipment safety, basic tool skills, background on job assignments, and life skills;

- help in building resumes and portfolios to document job skills learned and training courses taken;

- support for job hunting efforts;
- partnerships with Wisconsin technical colleges, including an advanced standing credit agreement with one college, which enables corps members to receive up to four credits for their year of service with WCC.

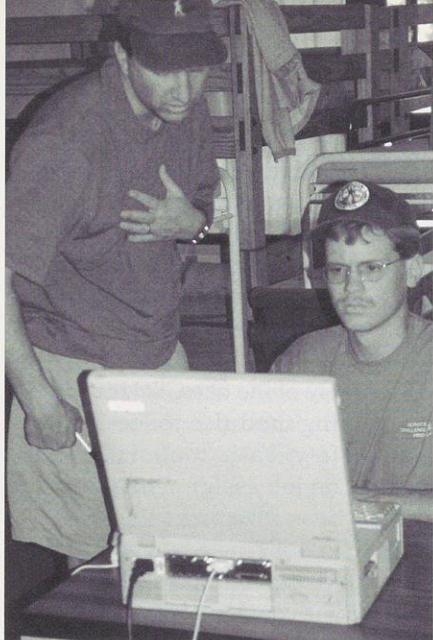
### Serving the community and recreating history

WCC is also involved in community development and service projects. For the past several years, WCC crews have

Crews install log structures in trout streams to increase water flow and provide shelter.







WISCONSIN CONSERVATION CORPS

Online coursework and training modules give crew members regular experience in using computers for problem solving.

(below right) Crew members learn skills alongside professional plumbers, electricians and builders.

helped Fishing Has No Boundaries prepare for weekend fishing events for disabled anglers in Eagle River, Hayward and Madison. Crews set up large food and equipment tents, made sure the piers and approaches were safe for participants and got the grounds ready for events. Crews have also manned the boats, worked the bait stations and maintained fishing equipment.

WCC crews staff Special Olympic events, local blood drives and the governor's *Wisconsin Cares About Kids* tent at the Wisconsin State Fair. These people-helping-people events create an atmosphere of friendship and camaraderie shared by participants, other volunteers and corps members. Nearly all go home from these events with new feelings of self-worth and accomplishment.

Each March, the D.C. Everest School District of Marathon County invites approximately 500 fourth graders from six elementary schools to visit the Twin Oaks Environmental Center just east of Wausau to learn about making maple syrup and candy from sap. From October through December 1999, WCC crews from the City of Tigerton, Portage County and the U.S. Forest Service in Medford built the center a new 16' x 32' sugarhouse that included a room for boiling sap and another for finishing syrup and other products.

Crews work with communities across the state to complete parks pro-

jects, construct affordable housing and install erosion controls. On any given day you can see corps members building park shelters, concession stands, skiing and hiking trails and shelters, boardwalks, bridges, ballparks, dugouts and bleachers. Housing projects include constructing porches, stairways and accessible ramps; installing drywall, siding and roofing; and laying concrete walks and driveways. Counties and cities employ WCC crews to fence streambanks, build retaining walls, create grass waterways and water diversions, build and install sediment barriers and riprap banks to stem erosion.

Many crews build new, but some find their job is to save the old. Crew Leader Don Mead and the Bayfield County WCC crew had a rather unusual project on its work schedule: They were asked by the Town of Bell "Save the Boats" Committee to help restore and protect three old fishing boats. The boats were part of a commercial fleet that employed 22 fishermen around the small city of Cornucopia, where at one time fishermen produced one million pounds of trout, herring and "longjaws" (cisco) per year valued at \$65,000.

The three old boats, each one about 40 feet long, rest on a Lake Superior beach just outside Cornucopia. A popular tourist attraction, the dilapidated boats also held many memories for local residents.

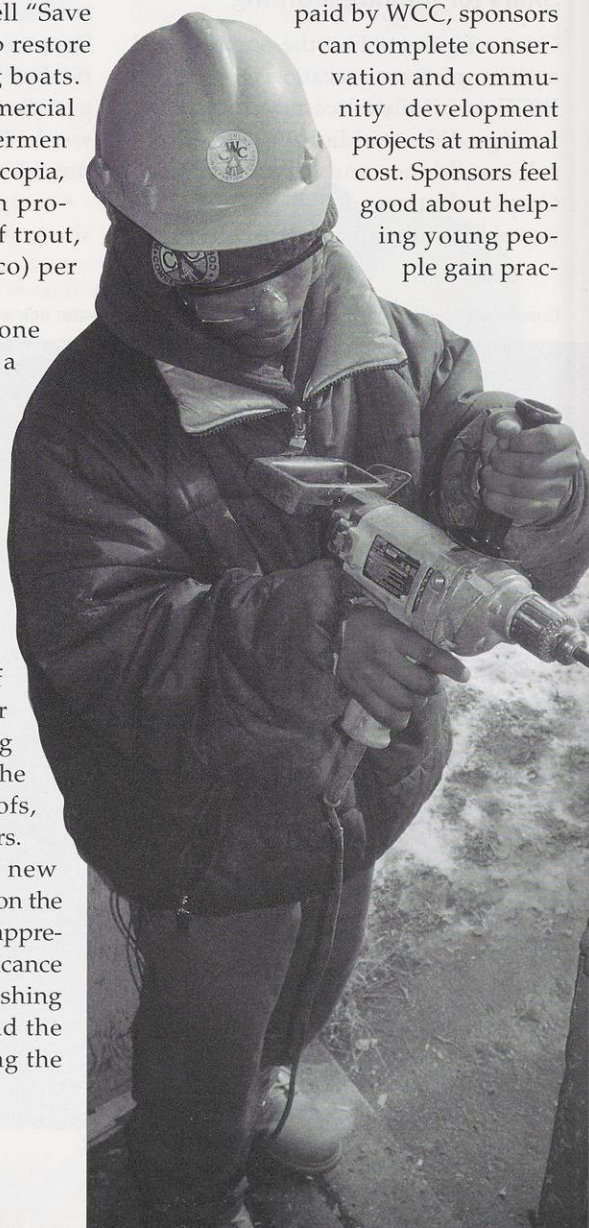
The Bayfield County crew first replaced some of the old broken and rotten trusses and ribs inside the hull of the *Twin Sisters*. They then stripped off the old roof and added a layer of 3/4-inch plywood, roofing paper and tar. The *Ruby* and the *Eagle* were also given new roofs, caulking and other minor repairs.

Besides learning some new skills, corps members working on the old fishing boats gained a real appreciation for the historical significance of the boats, the commercial fishing tradition of Lake Superior and the people who made a life fishing the waters near Cornucopia.

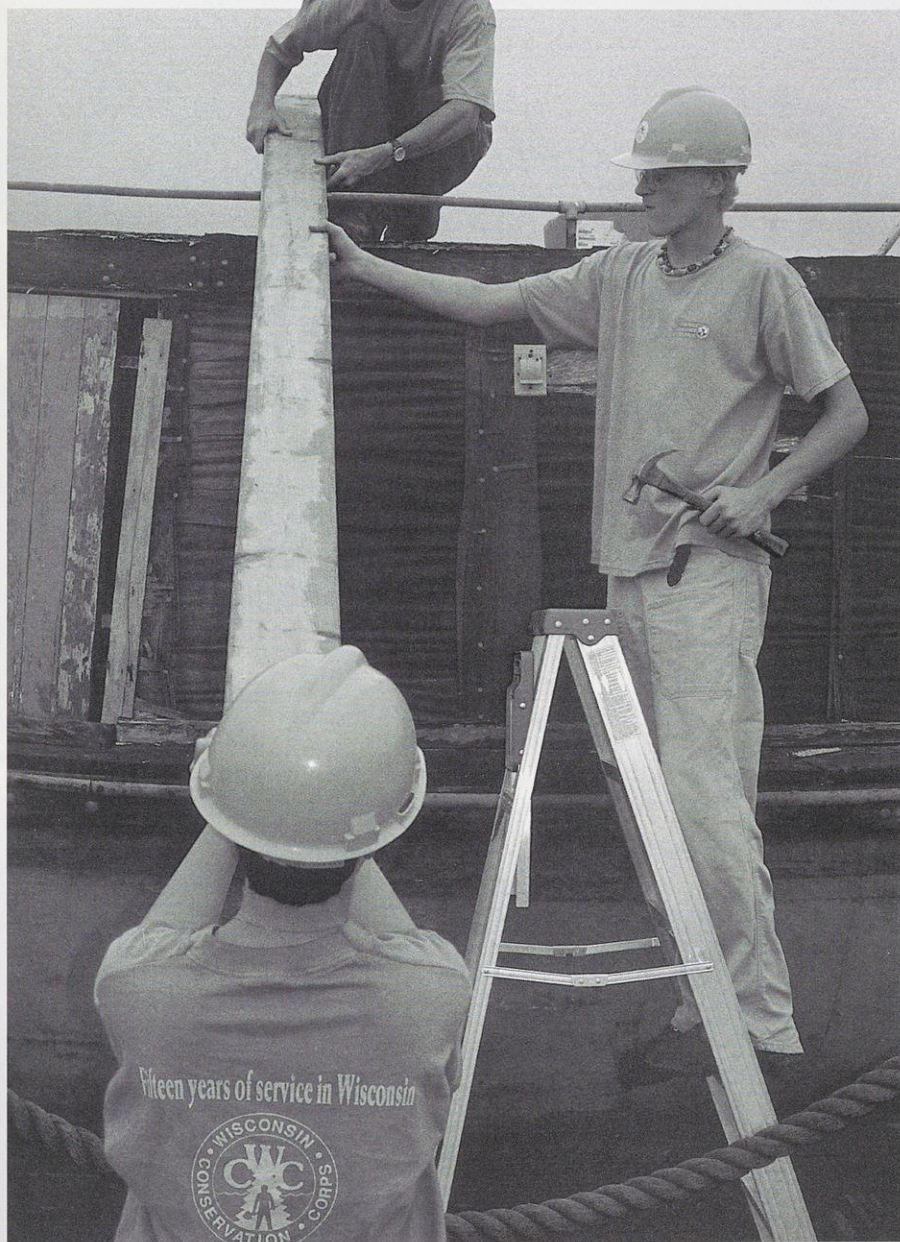
## Constructing a WCC crew

Each WCC crew is made up of five to seven members who are sponsored for one year by one or more government agencies, nonprofit organizations or a combination of the two. Sponsors agree to provide work projects, construction materials, necessary equipment and transportation. If one sponsor doesn't have 52 weeks of work, then co-sponsors or minor sponsors from the same area are invited to join in the work plan. Towns, school districts, lake associations, sporting clubs, environmental groups, the DNR, the U.S. Forest Service and town, county or city governments are customary sponsors.

Sponsors benefit in a number of ways when they sponsor WCC crews. Because corps members' wages are paid by WCC, sponsors can complete conservation and community development projects at minimal cost. Sponsors feel good about helping young people gain prac-







Construction projects can include work on new buildings, renovations and historical reconstruction. In Cornucopia, a WCC crew restored old commercial fishing boats that were a local tourism draw and a source of community pride.



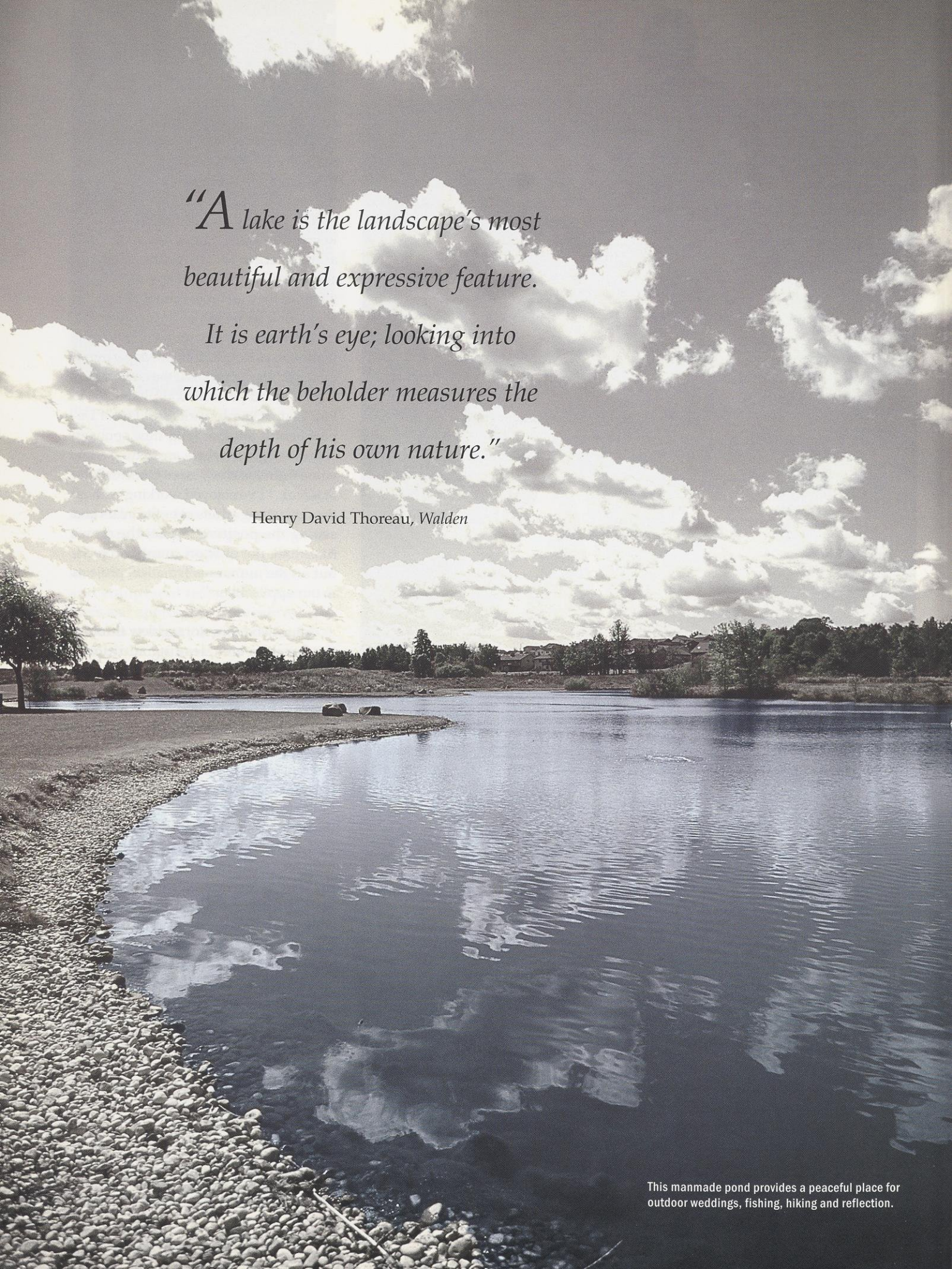
tical job skills, further their education, and take an interest in their communities. Sponsors know improvements made by WCC crews make communities stronger, happier and a better attraction for tourism dollars.

The Waupaca County Parks and Recreation Department has sponsored a WCC crew for 16 years. "It's the achievement of the corps members, whether they go on to school or acquire skills for a better job in the community, that makes sponsoring a crew worthwhile," says Roger Holman, department director. "In the process, the county gets a lot of good projects completed." The Eau Claire County Parks and Forest Department is another long-time sponsor. "Obviously, we feel we are getting a fair value from the crew," says Director John Staszczuk. "I've enjoyed working with all the fine young adults over the years and seeing the positive impact the crews have had, not only on county projects, but on the numerous [smaller] projects in our applications."

After two more storms blew through the Baraboo area, leaving additional clean-up work at Parfrey's Glen, the DNR-Devil's Lake crew finally finished their job in August 2000. The boardwalk was back in place, cleaned off, anchored solid and ready for visitors once again. Spring water was gurgling freely through the stream with no branches or limbs to impede its flow. Even though the crew was tired of the mud, mosquitoes and repeated visits to the glen, they left the work site with a great deal of pride in the work they'd accomplished. Nature's persistent efforts to keep Parfrey's Glen closed to the public were successfully defeated by an equally persistent and determined Wisconsin Conservation Corps crew.

*Don Hammes is the communications coordinator and publications editor for the Wisconsin Conservation Corps in Madison.*



A photograph of a manmade pond with a rocky shoreline in the foreground. The water is calm, reflecting the sky and clouds. In the background, there are trees and some buildings. The sky is filled with large, white, fluffy clouds.

*"A lake is the landscape's most  
beautiful and expressive feature.*

*It is earth's eye; looking into  
which the beholder measures the  
depth of his own nature."*

Henry David Thoreau, *Walden*

This manmade pond provides a peaceful place for  
outdoor weddings, fishing, hiking and reflection.



# A WALDEN OF ONE'S OWN

**Building a pond can be a pleasant project — or lead to a swamp of complications.**

*Lisa Gaumnitz*

**R**esidents and visitors alike have found the same inspiration and entertainment in Wisconsin waters as Thoreau found on his woodland pond near Concord, Mass. Now they're seeking those same qualities in their backyards.

A strong economy and the short supply and spiraling cost of lakefront property have sent Wisconsinites on a pond-building spree. In the last 10 years alone, the number of people seeking permits to build ponds has swelled four-fold.

Bob Langjahr, president of Aquatic Biologists Inc., a Fond du Lac-based firm specializing in pond design and management, has seen his business grow in 20 years from a handful to 2,220 ponds and lakes a year. "What used to be a quarter-acre pond is now an acre," he says. "And people are building 10-, 15- and 18-acre private lakes."

As ponds crop up in cornfields, wetlands and just about every other setting imaginable, homeowners have discovered — some the hard way — that pond stewardship demands careful consideration and ongoing commitment. A properly designed and built pond can become a valuable natural asset to the local landscape. If the job was poorly planned from the outset, however, the result can be a disappointing watery mess that can have disastrous consequences.

**Dug by man, governed by nature and law**

Langjahr's biggest challenge, and perhaps his most important, is helping clients understand that a quality pond takes much more than digging a hole and filling it with water. A pond may be manmade, but it's bound by the laws of nature and the state.

"Design is so important," he says. "You need to focus your time and energy up front. I've seen too many ponds that were maintenance nightmares as built."

Langjahr, who worked as a DNR fisheries technician and biologist in the late 1960s and early '70s, counsels his clients to work with nature. He begins by discussing expectations. "We talk about what they expect that pond will be like 1, 5, 10 and 25 years later," he says. "I let them know if their plans are realistic for their site. Everything is site-specific, and everything is based on what the customer's realistic goals are — and I underline realistic."

Potential pond owners need to match their goals to the lay of the land on the site and the soil type under the pond, particularly if they want a swimming or fishing pond. The pond's contours should be shaped to keep runoff from entering. If there's a beach, it should be placed in a spot where winds infrequently blow, to prevent the build-up of sediment and decayed vegetation. Porous soils may require a liner, which boosts construction costs.

The water source, land uses near the pond, and drainage from the entire watershed must be considered. Ponds filled with groundwater stay cooler and are better protected from runoff. Phos-

phorus, sediment and other substances that dissolve as rainwater flows across land will affect ponds filled by rain. Runoff from the entire watershed will find its way into a stream-fed pond.

Many people think about building ponds attached to streams or in existing wetlands, where there's a ready water source and soils that hold water. Such sites are more complex from a regulatory and biological standpoint, and mistakes carry a greater risk to natural ecosystems.

"When you take a stream or wetland nature created and try to install a man-made system in it, you can create all kinds of problems," says Dan Helsel, a DNR water regulation specialist. "You can degrade water quality and shift the fish and wildlife community by changing habitat. You may introduce an exot-

## Do I need a permit?

A DNR permit is necessary if the prospective pond is:

- in a wetland and an Army Corps permit is required
- connected by a channel, pipe or by any feature that confines or directs flow to or from a navigable waterway
- within 500 feet of a navigable water
- an existing pond that you want to drain to compact sediments and in some cases control aquatic plants by drying out the bed
- created by dredging, grading or constructing a dam in a navigable waterway



## Location + law = type

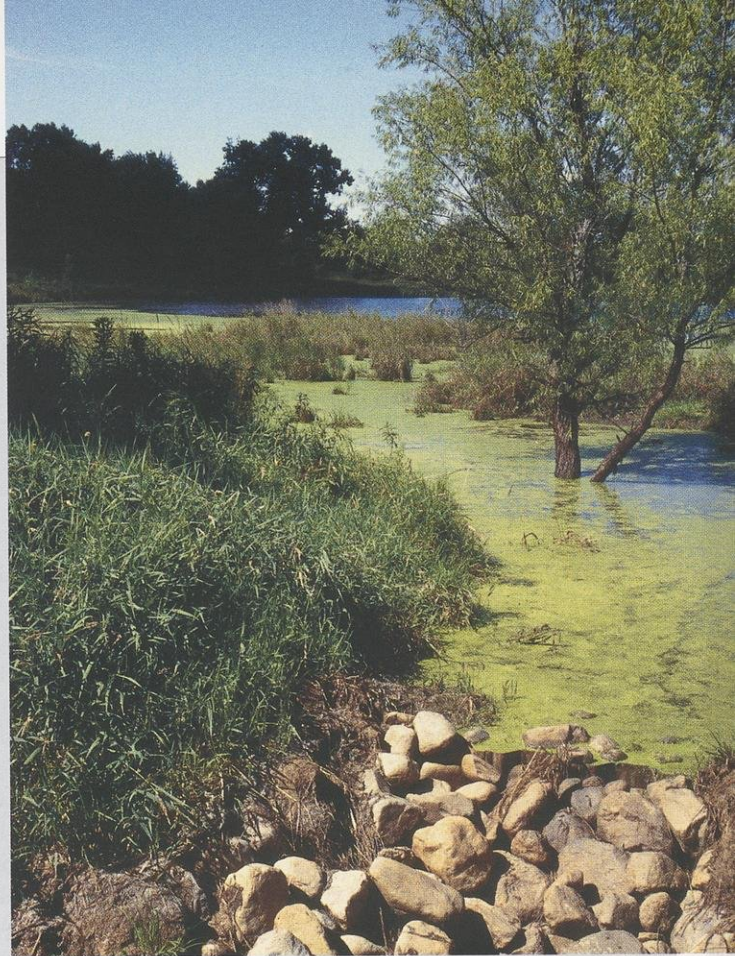
**T**he natural conditions of your site and regulatory restrictions will determine the type of pond you can build.

**Wetland ponds:** Some wetland types, for example sedge meadows, forested wetlands, cedar or alder swamps, provide critical habitat that should not be converted to open water. In other settings, wetland ponds can be easily constructed and maintained if they conform to the natural setting. With shallow depths and gradual side slopes surrounded by natural vegetation, these ponds will attract deer, waterfowl, songbirds, frogs and turtles. However, wetland ponds often have very fertile sediments, which encourage rapid growth of aquatic plants and algae. In summer, nighttime respiration by plants and algae depletes the water of oxygen, making water conditions unsuitable for cool water fish. In winter, oxygen is used up when large quantities of plants and algae decompose, causing “winterkill” conditions. Federal, state and local regulations that apply to wetlands also apply to wetland ponds.

**In-stream ponds:** With a dam and some excavation, ponds can be created on an existing stream or at a spring head. Such a pond has the potential, over time, to distort the stream’s quality by trapping nutrients and sediment, warming water temperatures and reducing oxygen. Ponds built “online” usually require an intensive permit review process and in some circumstances, may be declared public waters by the Department to protect the public rights associated with all waters of the state. Permits for ponds constructed on navigable streams are reviewed by fish, wildlife and water quality staff, and also require the preparation of an environmental assessment and publication of a newspaper notice.

**Upland ponds:** Ponds built in upland areas can meet many different uses provided a good water source can be found. Upland ponds will also require some sort of bottom layer — usually natural clay or a manufactured pond liner to prevent water from seeping out.

Many upland ponds are fed by rainfall that runs into the pond, or by surface runoff. Runoff can provide good water

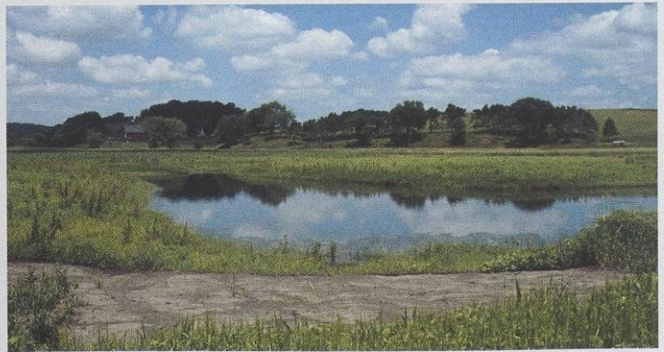
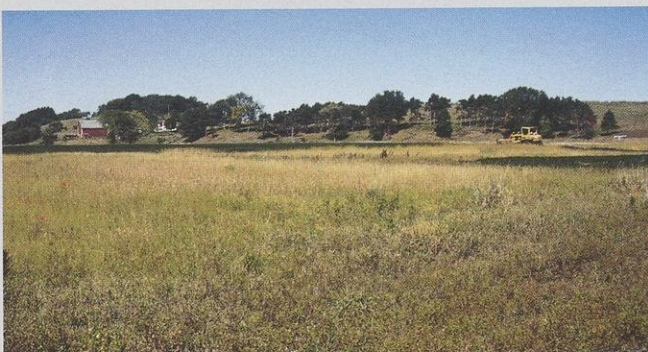


Pond projects may enlarge existing waters. Here, a backwater ditch was plugged and filled to extend water from a wetland and stream. It provides both fish and wildlife habitat.

quality if natural buffer strips along the shoreline filter it first. If the runoff feeding your pond flows over heavily fertilized lawns, drains farm fields or residential subdivisions, you can expect nutrients, sediments and contaminants to limit your pond’s water quality.

Groundwater wells or diversions from nearby streams may be higher in nutrient levels (phosphorus, nitrogen, etc.) or lower in oxygen levels than your pond can handle — so have the water tested first. Depending on the type of well or the type of diversion, federal, state and local permits may be required. — *Dan Helsel, water regulation specialist, DNR Bureau of Fisheries Management and Habitat Protection.*

Before and after photos of wetland restoration in Iowa County. State and federal agencies offer technical expertise and will share costs for constructing some ponds for fish and wildlife, but landowners must still submit plans and secure permits before starting such projects



ART KITCHEN, US FISH AND WILDLIFE SERVICE



ic species or favor one that's environmentally damaging if a pond is stocked with fish that escape to a connected natural water body. The changes can ripple through the ecosystem."

To prevent such damage, state, federal and local governments require permits and approvals to construct, stock and maintain most ponds. Waterways and ponds that are in wetlands, near or connected to any other waterway will likely require permits from the DNR, even if the pond is placed on private land.

The state permit application automatically will be forwarded to the Army Corps of Engineers to review for a federal permit. For a Corps permit to be valid, the DNR must either issue its own permit or certify that the pond will not significantly impair the function of

wetlands, and that options that would not affect the wetlands are not available.

"Assume you need a permit from one agency or another," says Gregg Breese, a DNR water management specialist based in Milwaukee who issues 200 to 300 permits a year for recreation and stormwater detention ponds. "Clearly identify your goals and we (DNR) can either tell you parameters to use in your design, or tell you there are problems."

If the applicant doesn't address the problems or fails to get the proper permits, the permit holder — the property owner — is on the hook. Violations can result in forfeitures and a requirement that pond owners restore the lake, stream or wetland to its original state, Breese says.

Langjahr advises people to get all

approvals from all agencies in writing, and to make notes on any concerns the agencies have. "If you really want the pond, you can address those concerns," he says.

### Maintenance is a must

Dan Helsel says pond builders must make decisions about the type of pond they want. "Too often people expect a pond to do it all: provide good swimming, fishing, aesthetics, and a place for wildlife. You need to prioritize which qualities are the most important to you, because you're not going to get them all."

The murky, peaty soil of a wetland may provide plenty of nutrients to feed aquatic plants — nice for waterfowl, but not so pleasant for swimmers. Fish

## A pond's purpose

Ponds are generally classified into the following types: Wildlife, Fishing, Swimming, Commercial and Stormwater. Each type is suited for different uses. The table below highlights types of ponds most suitable for different natural conditions.

Pond Type	Characteristics	Aesthetics	Boating	Fishing	Swimming	Wildlife
Wildlife	Heavily vegetated with buffer strips. Generally shallow (<3 feet) with irregular, gently sloping shore.	••	••	•	•	•••
Fishing	Moderately vegetated (30–50%) with steep drop-offs. Generally deeper than 15 feet although with groundwater or surface flow, may be < 5 feet.	••	••	•••	••	••
Swimming	Weed coverage < 10% with gradual slopes and firm bottom. Typically mowed shoreline or beach in swimming area with major buffer strips on rest of pond to limit runoff and sustain water quality.	••	••	•	•••	•
Commercial	Ornamental pond or cooling pond with < 40% vegetation and variable depths and sizes.	••	•	•	•	•
Stormwater	Designed to catch and hold runoff from subdivisions, parking lots, roads and other urban areas, normally has an outflow.	••	•	•	•	•

Key: Best suited ••• May be suited •• Less suited •



and wildlife don't often work together in the same manmade pond. Fish need colder, deeper water and wildlife need shallower ponds with warmer temperatures and more algae, aquatic plants and nutrients.

"You'll no sooner have your pond dug than nature will begin to stock it," Thoreau wrote. Seeds and fragments are carried in on the wind, the feet of waterfowl, or on the tufts of fur-bearing animals. Despite an owner's best efforts to keep certain species out, nature brings life to all ponds — plants, bacteria, eggs and insects — and ongoing maintenance will be needed.

Karl and Carol Ralian knew their three-acre pond near the Bark River in Waukesha County would require some attention, but they weren't quite prepared for how much time and effort pond maintenance would take.

After a frustrating, three-year struggle to build the pond, which included working with three different contractors, filamentous algae quickly took over. "It was like the sorcerer's apprentice — we'd pull it out and it kept coming back in thicker than before," Karl says. "And when you put it up on shore, boy did it stink." This year, the couple spent three weekends battling

## Can anyone else use my pond?

As a state with a strong water recreation tradition, most surface water in Wisconsin is public. If you construct a pond so that you can paddle to your nearest lake or stream, you must allow others to paddle up to your pond. If your pond is completely surrounded by private property, no one can use the pond without the property owner's permission to cross the land. Other new ponds installed after 1988 are private unless your DNR permit declares otherwise. Constructed ponds may be declared public if they will have an ongoing effect on public waters. If your pond was built between 1961 and 1988 and it required a DNR permit, state law automatically made it public water.

dense floating mats of curly pondweed and Eurasian water milfoil.

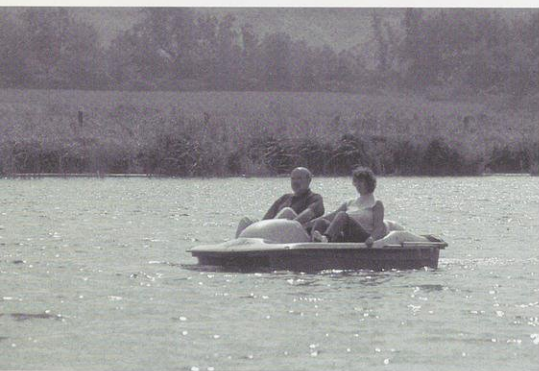
Despite this backbreaking work and other drawbacks, the Ralians say the pond has turned out better than they expected given the travails of getting it in the ground. They kayak and row, swim, and enjoy watching the deer and waterfowl that flock to the pond. "It's just so relaxing or I should say, can be, when we're not working on it," Carol says.

Bernie Ziegler's West Bend pond represented 25 years of dreaming, months of careful planning, and knowledge gained from previous ponds on the 300-acre property that didn't hold water because the soil was so porous.

Ziegler, his wife Liz and their three daughters began planning for this particular pond by holding a family talk about what they wanted. "The kids and my wife voted for a swimming pool. I said no way — but I'd come as close to a swimming pool as I could." Fishing

## Resources

- Website with pond permit requirements [www.dnr.state.wi.us/org/water/fhp/waterway/index.htm](http://www.dnr.state.wi.us/org/water/fhp/waterway/index.htm)
- "Managing Wisconsin Fish Ponds," UW Cooperative Extension, #G-3693, \$10, (608) 262-3346 or (877) 947-7827.
- "Management of Aquatic Plants and Algae in Ponds," DNR Publications #FH228. Contact Wisconsin Lakes Partnership (715) 346-2116.



ROBERT QUEEN

(left) The Ralians of Waukesha County paddle around the three-acre pond they excavated. (below) Karl Ralian inspects an aerator. The couple has gotten plenty of exercise battling milfoil, algae and pondweed that invaded portions of their pond.



ROBERT QUEEN

would be a secondary goal.

He hired Langjahr to help him design the pond to meet those goals. "I took Bob's lead as to what it would require to have a clean pond and ecological balance," he says.

A contractor excavated a valley to create a one-acre, 25-foot-deep pond and slope the shores back steeply to keep out runoff. The pond was lined, a spillway installed on the northeast shore to collect and more easily get rid of surface debris and algae, and the pond was stocked with fathead minnows and hybrid bluegills. Seeds of native plants were sown on the field above the pond to attract deer and turkey. Irises and bulrushes were planted at the far end. Now as Ziegler surveys the finished pond from his deck, he sees a tropical blue oasis ringed with colored rock. A paddleboat rests on its pea gravel beach, and a swimming raft bobs nearby. Not a leaf, a weed, nor hint of algae mars the pond's glassy surface.





ROBERT QUEEN

## The right ingredients


Consider the following when planning your pond:

		Beneficial for wildlife	Beneficial for fish	Beneficial for swimming
WATER SOURCE	Cold groundwater (spring fed)	•	•	•
	Watershed runoff	•		
	Coldwater stream	•	•	
	Warmwater stream	•	•	•
SHORELINE ATTRIBUTES	Natural buffer	•		
	Rock riprap or brick			•
	Manicured lawn			•
	Sand or pea gravel bottom			•
	Soft or mucky bottom	•	•	
POND SHAPE	Round			•
	Irregular	•		
	Shallow with gentle side slopes	•		
	Deep with steep side slopes		•	•

Bernie Ziegler looks out on the artificial upland pond constructed behind his West Bend home. The carefully designed pond came out “better than I anticipated.”

“It’s better than I anticipated,” Ziegler says. “When you sit up there and look out, you’ve got it all there.”

He was on the site every day to make sure everything went according to plan, and he believes that made a big difference. “I looked at this as more of a hobby, a personal project, than a construction project,” he says. “My advice to people is do your homework. Get educated. And team up with people who complement your needs.”

Dan Helsel puts it like this: “Sure, you can build a pond that doesn’t conform to the location, or you can try to make a wildlife pond when the site’s better suited to fish. But if the location does not match your desired pond type, you will continually be battling Mother Nature.” And she usually wins in the end. 

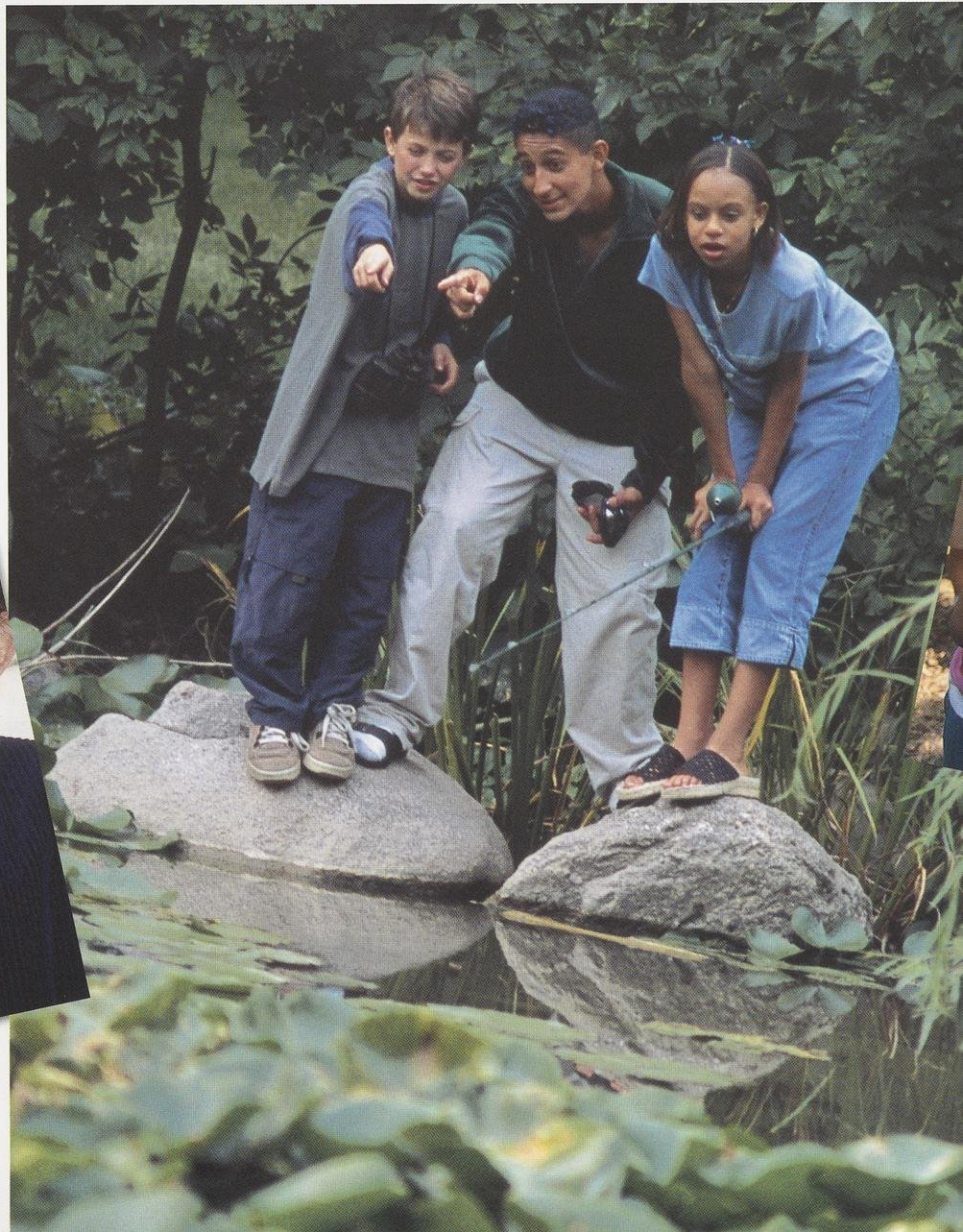
*Lisa Gaumnitz is Public Affairs Manager for DNR’s water programs.*



# Into the Outdoors

A new TV show  
tunes-in to  
outdoor fun.

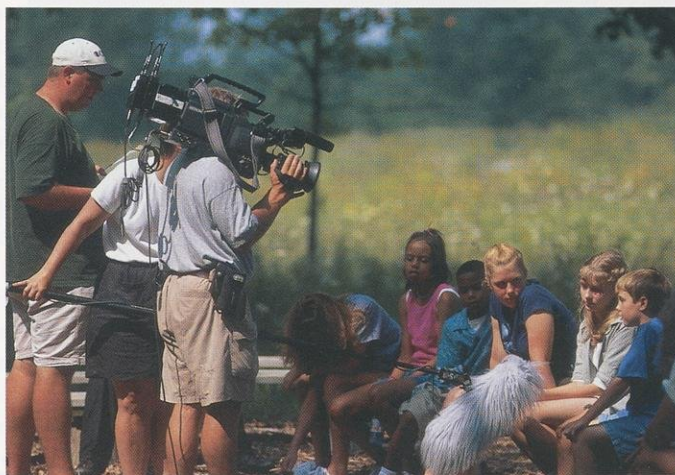
*Mark A. McNease*





Coming to the airwaves near you: "Into the Outdoors," a dynamic television program that shares enthusiasm for outdoor fun, exploration and environmentalism with younger viewers.

Each half-hour program opens and closes with comments from two kids, sandwiched around four live-action segments. Our hosts, Annie and Henry, met at a fishing clinic in Milwaukee. Since that time prior to the show's first episode, they've communicated by computer. Their focus, as well as the show's, is exploring Wisconsin outdoors: nature, spiders, fish, birds of prey, activities like snowshoeing, the list goes on. We join them each week as they hook up to decide where the adventure will begin. One week they join a friend



ROBERT QUEEN

## When and where it airs

"Into the the Outdoors" will be shown on the following stations at these times:

Duluth, MN — WDIO, Channel 10, Sundays, 7-7:30 a.m.  
 Eagle River — WYOW, Channel 34, Sundays, 9-9:30 a.m.  
 Eau Claire — WQOW, Channel 18, Sundays, 7-7:30 a.m.  
 Hibbing, MN — WIRT, Channel 13, Sundays, 7-7:30 a.m.  
 Green Bay — WGBA, Channel 26, Sundays, 7:30-8 a.m.  
 La Crosse — WXOW, Channel 19, Sundays, 7-7:30 a.m.  
 Milwaukee — WISN, Channel 12, Saturdays, 6:30-7 a.m.  
 Madison — WKOW, Channel 27, Saturdays, 10-10:30 a.m.  
 Wausau — WAOW, Channel 9, Sundays, 9-9:30 a.m.



A new TV show encourages kids to explore the outdoors.

(opposite far left) Patsy provides the outdoor scoop.

(left) Henry, Mac and Annie explore a wetland pond.

(above) Annie and naturalist Richard chat at the environmental center.

(top right) Some segments are filmed at DNR's Havenwoods Environmental Awareness Center.

who's tracking wolves by airplane to study this magnificent animal in Northern Wisconsin; another week they'll yank invasive plants at Peninsula State Park. From each initial adventure, they're off on three more, each as dynamic, educational, and active as the last.

A little about the characters: Annie lives in Milwaukee with her grandparents and widowed father. She's vivacious, sharp, with a keen sense of adventure. Her best buddy Henry lives in Eau Claire, geographically apart but together in spirit and technology.

Henry lives with his younger sister, Patsy, an aspiring television reporter who shows up in several episodes "getting the scoop" on mosquitoes, ticks and bees, or the "dirt" on pollution. Henry's dad is a travel writer and his

mom teaches at the university.

There's a strong inter-generational tie, with Annie's father and grandmother turning up from time to time, and Henry's family built into the show through Patsy's reporting and his parents' participation in outdoor activities. Aside from appealing to kids and enticing them outside, this sense of connected families that stay involved and pass on their experiences to the next generation is an important element of the show.

Adding to Annie and Henry's adventures is a naturalist named Richard, who shows us all about habitats, wetlands, environmental issues and wildlife. Richard is Annie's friend and she visits him often at the environmental center, taped at DNR's Havenwoods Environmental Awareness Center in Milwaukee. He leads Annie and her small group of local friends outdoors, where the natural world

around them comes alive.

Amelia is everybody's neighbor. Her home is her garden where she shows kids different nature-related crafts they can make at home. These include leaf-printing on T-shirts, making bug traps to study crawling critters, crafting an eagle mobile, and more. Amelia has a warm, engaging personality that invites all viewers, child and adult alike, into her world of hands-on crafts and exploration.

Finally, there's Mac, an older kid from Brooklyn, NY whose relatives live in Stevens Point. He's been to Wisconsin and loves it, making as many trips back as he can. In the meantime he provides fascinating scientific information in short 90-second clips when Annie and Henry turn to him for the lowdown on topics such as tracking devices, fishing lures and tapping sap from maple trees. Mac likes to dress to fit the topic and lets his silly side shine through,





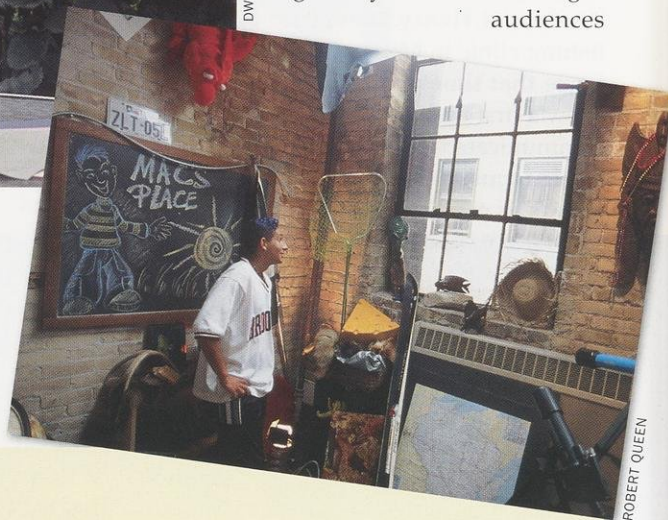
(above) Amelia crafts hands-on projects in her garden.  
(right) At Mac's place, viewers will get a little science and a lot of fun.

complementing his scientific nature.

Why watch? Because the show brings Wisconsin's outdoors to life for children. It shows the outdoors is accessible to all kids whether they live in rural homes or urban apartments. Viewers get to see and learn about a range of outdoor fun from a young rural boy who goes turkey calling with his parents, to a program for city kids that takes them to a game farm to learn about hunting dogs. Even Richard explores gardens at Havenwoods in Milwaukee, since gardening may well be the closest experience in the outdoors that some viewers will get.

**Educational** — By having specific educational goals, "Into the Outdoors" stands apart from much of children's programming, putting it in the company of the best children's TV shows. It encourages kids to think, do and explore. Each segment provides something for the young viewers to think about and learn, from the different calls of a loon, to seeing a bear cub returned to the wild, showing the viewers how, what, and why the outdoors works. The environment, so much a part of Wisconsin's identity, is presented truthfully, including problems such as measuring mercury levels in the rivers and streams, and managing deer populations. Sometimes the answers are tough,

and "Into the Outdoors" keeps it honest, never glossing over a difficult solution, and never as-



## Why TV?

In casting an eye toward the future, DNR Secretary George E. Meyer decided the time is right to invest in a television show for youngsters about the state's outdoors and environment. His strategic aim? To build a natural resources ethic in today's youth — tomorrow's citizens — by using television, a medium that kids enjoy, while satisfying demand for quality children's programming.

The decision to help produce "Into the Outdoors" acknowledges a sober truth: Wisconsin won't maintain a quality environment and abundant natural resources if future citizens don't know or care about nature's bountiful, but vulnerable, assets.

That reality already is evident. Social and economic changes nationwide continue to move each generation a little further from the land, while technology and population growth place more pressure on it. A generation ago, youngsters could more safely and independently explore the outdoors. Environmental topics were rarely taught during the school year, but more kids lived in rural areas or had close relatives who took them berry picking on a dry hillside, fishing for bluegills in a nearby lake, or just exploring woods, fields and streams.

Now the reverse is true. Thanks to committed teachers, strong curriculums and supportive parents, young people learn a lot about the environment in school, but they have fewer opportunities for outdoor experiences. To suburban and city kids, nature seems more distant even though outdoor fun may be just blocks away at a waterside park or bike trail. Busy, two-income households and more single-parent families need all the help they can get to find convenient outdoor getaways to enjoy with youngsters. — Wendy Weisensel, DNR Public Affairs Manager.

suming the viewers won't understand.

**Entertaining** — The show's creators knew from the start that the only way to reach an audience is to keep them interested and engaged. In today's world of 70-channel cable choices and entire channels devoted to kids, the need for fast-paced, entertaining television is crucial. "Into the Outdoors" keeps this need to be entertaining always in mind. Younger audiences



can identify with the hosts. Their personalities are strong, their relationship solid and often funny. Patsy, Henry's sister, adds a strong and engaging character who takes her investigative reporting very seriously. Amelia captivates with her gentle world in the garden. Richard draws us in as he leads us around the pond or through a habitat. And Mac provides solid scientific information while injecting some wackiness to the mix when he shows up in a wet-suit to talk about frogs or a skull cap and beak to rap about raptors. This human element combines with original music, graphics and editing to produce a fast-paced, entertaining show that will hook kids from the start and keep them watching.

**Engages adults too** — Much hand-wringing occurs in today's culture about the lack of mentorship and adult involvement with kids. The creators of "Into the Outdoors" remain keenly aware of this. The show never abandons its child viewers to a television set overrun by cartoon characters or an entirely young cast. It covers a wide age range in its characters, from the hosts, to Mac, to Richard and Amelia, adults who exude comfort and respect in the presence of kids. The families of the hosts remain always near. We see Henry and Annie's families in the show. We hear their voices. We know they are close by, ready to lead and support these kids. Once we dive into the live action segments, adults are everywhere: DNR employees show the kids brown-fields, water snakes, loons and milkweed monitoring stations. Using a range of DNR naturalists and educators, the show continually highlights children interacting with adults, and these interactions are two-way: the adults often learn as much by being with the kids as the kids learn from the adults. Whenever possible the live action segments are told from the point of view of a single kid on an adventure, such as Keenan, the boy who goes wolf tracking, and Maggie, who checks out bird watching at Bong Recreation Area.

**Wisconsin specific** — This show breathes, sees, eats and *does* Wisconsin. It takes viewers all around the state exploring new places and giving exam-

## EEK! — digging deeper online



Television can be so fast-paced that it's hard to get in-depth information you'd like. After watching "Into the Outdoors" (ITO), visit *EEK!*—*Environmental Education for Kids*, (<http://www.dnr.state.wi.us/eeek/>), the Department of Natural Resources' website where kids can learn more about Wisconsin's natural resources.

*EEK!* has added a special section where TV show viewers can "Go Deep

Into the Outdoors" to get additional information on stories that have aired. If a segment on wolf tracking leaves you wanting more, visit *EEK!* to read about wolves in Wisconsin. Couldn't quite follow Amelia's origami instructions? *EEK!* will give you step-by-step directions to fold your paper on the Amelia "Right Under Your Nose" pages. When you're done surfing the ITO section, check out other parts on *EEK!* for more information on plants, animals and the world around you. Test your knowledge with *EEK!*'s games and quizzes. Teachers who want to bring ITO into their classroom will find special hands-on activities to go along with the television show on the *EEK!* Teacher Pages.

An "Into the Outdoors" website (<http://www.ito.com>) lists air dates for the shows, information on the characters, special outdoor events and provides an address where you can e-mail your ideas for future episodes.

Both the television show and *EEK!* encourage kids to learn more about the natural world and then do it — put their shoes on, grab their coats and go outside to experience all the great things the outdoors has to offer. — *Carrie Morgan, DNR Environmental Educator.*

ples of why Wisconsin has a national reputation as environmentally enlightened. The outdoors are truly important to the people of Wisconsin, and that message comes through clearly in this show. Map locators identify the location of each and every segment. Cities, parks, recreation areas, lakes, rivers, and streams are all identified and identifiably Wisconsin. The characters love where they live and have more than enough to explore and discover within the state to keep them busy for years to come.

And *that* is "Into the Outdoors." A show created by Discover Wisconsin Productions and the Wisconsin Department of Natural Resources. It's designed to reach kids across the state, get them up and out, looking under rocks, kayaking in wetlands, using their hands and their minds to uncover the world, as Amelia says, "Right under your nose." "Into the Outdoors" awakens

children to the air, the water, the land, the teeming wildlife all around them. It provides an excellent vehicle for kids to begin and continue exploring the natural world with each other, with their friends, and with their families. The outdoors is for everyone, from kids in wheelchairs roaming a park to families speeding out for a day of charter fishing on Lake Michigan. They learn through this show that they're a part of this natural world, that it requires stewardship and respect, and that learning all this is an adventure of the highest sort. The title itself says it all: an exhortation to get "Into the Outdoors," right now, today, it's all there just waiting for a curious kid to take a look. ■

*Mark A. McNease is the "Into the Outdoors" co-creator and the program's head writer.*



# WISCONSIN NATURAL RESOURCES

We annually publish a subject index of our stories each December. A cumulative index of our stories 1977–1999 is also available as a file you can download from our website: [www.wnrmag.com](http://www.wnrmag.com). Please note this is a large file (more than 350,000 bytes and in excess of 100 pages), so browse before you print!

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Barred owls are distinctive in their own right and are easily identified. Rich, dark brown eyes are their most distinguishing characteristic. Only the rare endangered barn owl (*Tyco alba*) also has brown eyes; all others found here have yellow eyes, or more accurately, yellow irises with black pupils. Bright lemon-yellow eyes give the great horned owl its soul-piercing, aggressive look. The softness in the barred's eyes project a nonthreatening, quiet and retiring demeanor. Don't be fooled. Barred owls are very effective hunters preying on rabbits, squirrels, mice, snakes and smaller birds.

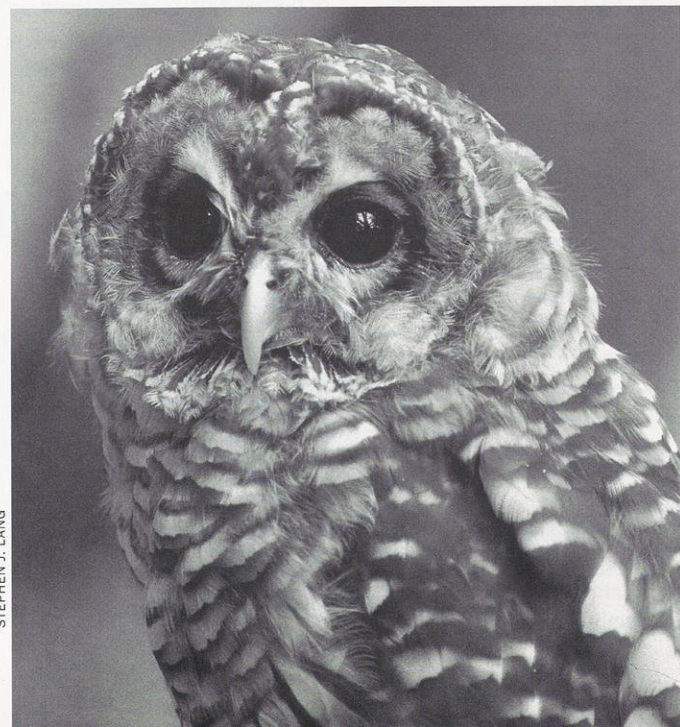
These owls are heavily feathered and look chunky. The absence of ear tufts gives their heads a smooth puffiness. Concentric circles of darker feathers in the facial disks accentuate their dark eyes and rounded look. Fluffy, horizontally-barred feathers under the facial disks make the neck region appear swollen. Dark vertical streaking highlights the creamy belly. Squarish brown and white spots on some of the back feathers give the barred owls their snowy pine cone look, good camouflage for hiding in the forest.

Barred owls establish territories in February, court in March and lay eggs in April. Their clutches of typically two white unmarked eggs are laid in an unlined cavity, usually well hidden in a big, old tree or perhaps an abandoned hawk or crow's nest. Good nesting sites may be used for several years. Incubation, usually by the female, lasts about 28 days. The attentive parents remain with the young owls well into late summer or longer.

Although barred owls are essentially nonmigratory, some individuals wander during late fall and early winter. They may show up in backyards, even in the city, to quietly perch and rest for the day. If you see one, pause a few minutes to gaze into its soft, beautiful eyes until the barred owl slips away.

Anita Carpenter writes from Oshkosh.

The boreal barred owls may wander into town during winter. Listen for them.



STEPHEN J. LANG

## READERS write

### SMALL IS BEAUTIFUL

As a person who likes to pick up a hammer and saw to do a little work on the house or volunteer to help a friend, your "Building Transformation" article on green building in the June issue was interesting and probably long overdue.

However, I was surprised that the question of how big a house should be was not in the equation. I would think that one of the first questions/issues to be addressed would be: What size of home do I really need?

It seems as average family size has decreased, home size has increased almost exponentially. This has a large impact on land use, resource depletion and energy consumption, not only in construction, but living in the home, especially in our climate. On our lakes in the North, the problem is further aggravated by the trend of demolishing and landfilling modest homes to replace them with castles with price tags in the hundreds of thousands of dollars. Resources going into many homes today are enough to construct several homes very suitable for today's family size. "Green building" has a long way to go!

Gary Dunsmoor  
Spoonerville

In fairness to author Sherrie Gruder, house size is a factor she discusses in planning green construction. We only gave readers a taste of the dialogue Sherrie encourages in her talks, booklets and radio shows.

### CANARY GRASS HAS ITS PLACE

Reading the August article on reed canary grass ("Grappling the green giant") brought back memories of when it was first introduced to this part of Wisconsin. This was during the drought years of the early 1930s, and its benefits were seldom realized.

A few weeks before reading your article, I went along on a

boat ride one fine Sunday afternoon from the boat landing near Weyauwega to Freemont. Turbulence and huge wakes caused by many boats with powerful motors were quite evident. Less evident were the thriving stands of canary grass along the shoreline in the low areas. Without this dense stand of canary grass, erosion of the shoreline along this important river would have been disastrous. Here is one area where we can thank God for canary grass.

Don Rhone  
Chetek

*Botanists wouldn't disagree about the value of shoreline buffers and anchoring grasses. These days they would just recommend different species than the invasive reed canary grass.*

### COYOTE WAYS

Could you carry an article about coyote habits? On the farms up in Ogema and Calloway, Minn. where we were raised, we had coyotes. One used to howl right under the window when my baby sister was going to bed. That howl scared her so much that she dropped a glass of water. I remember once near our country school that the teacher called all of us back inside so we wouldn't be attacked by a coyote that was going by. We had one go alongside our barn too and I used to walk that road every day when I went to school. I never did see a coyote but wondered if they lay in the tall grass. When I think back, I didn't realize how close to danger I was.

Luella M. Hacht  
Fort Atkinson

*Ms. Hacht, you likely were not in any danger. Most coyotes are curious but will avoid direct contact with people. As we discussed in our December 1999 piece, "A howl over coyotes," interactions with people are increasing as development pushes*



into the countryside. Coyotes are smart opportunists and will use the food sources — like garbage or pet foods — that people leave outdoors if they are available. We doubt that those coyotes so many years ago posed much threat.

## BADGERS AROUND?

Someone suggested we might have a badger living near our home. We live in the country among oaks, pines and open fields. Lately, we've found small dead animals, raccoons and a woodchuck buried shallowly in the ground with loose dirt mounded onto them. Is there a back issue on badgers or could you recommend a good reference book?

Kate Kinas-Warren

We carried "Still at home in the Badger State," in December 1999 discussing badger habits and abundance. You might also enjoy the write-ups in *Mammals of the Great Lakes Region* by Allen Kurta, University of Michigan Press, 1995 or *Mammals of Wisconsin* by H.H.T. Jackson, University of Wisconsin Press. Both are available through bookstores and libraries.

## PEACEFUL ANGLING

I just finished reading Roger Drayna's short article describing his brook trout fishing experiences ("Don't breathe a word," August 2000). His descriptions of the sights, sounds and smells of a getaway-from-it-all adventure were expertly written. I've been there, done that, and the serenity is hard to match.

I strongly question whether bass tournament fishermen in their ardent quest for the most

fish, biggest fish, trophies and money can even comprehend the benefits of a day of solitude.

I hope Mr. Drayna has a son or daughter to pass on his passion for the quiet places.

Jim Cox  
Lodi

## FISHING TIPS

One day last summer I wanted to go fishing but had no bait. A huge earwig presented itself, and in less than three minutes, I caught five nice bluegills.

Eugene Bostian  
Janesville

I've fished bluegills since the early 1940s, mostly in late winter and spring, but now I go out in the summer too. I still think bluegills are the best-tasting fish. I still fish with angleworms, no bobbers and simple rods and reels. I had my grandson along recently and saw him catch his first bluegill. I sure liked your article about panfishing ("Panfish 101," June 1999), but I can't get by with my wife mowing the lawn.

Arlen H. Wahl  
Bemidji, Minn.

## LANDSCAPING ADVICE

I'm a big fan of the magazine's helpful, informative articles. I read with great interest "Less work, more beauty, better protection," in the April issue. I'm about to embark on some landscaping of my own, but I'm not lucky enough to live on a shoreline as described. I'd still like to follow the principles illustrated using native perennial grasses, shrubs and flowers around the yard. Can you share any resources?

Todd Dembroski  
Green Bay

Many books and other resources are available to help the landscaper who wants to "go native." I heartily recommend visiting the University of Wisconsin-Extension office in your county. There

are many handouts about planting techniques, recommended varieties of perennials for each part of the state and a Master Gardener program that can put you in touch with like-minded gardeners in your community. Also, more and more nurseries are stocking native perennials for uses in home gardens. Most offer free lectures and seminars about planning your planting strategy based on your landscape, soil type, light conditions, rainfall and your desires. If part of your goal includes attracting wildlife to the property, we have used "Landscaping for Wildlife," by Carrol L. Henderson, sold by the Minnesota Department of Natural Resources, 500 Lafayette Road, St. Paul, MN 55155-4040.

## FREE FISHING?

When free hunting and fishing licenses were offered through the county clerks' offices, both my wife and I received our licenses. That was many years ago, and mine is almost in tatters. Is it possible to renew it and at what cost?

Melvin Guenther  
Stratford

Senior Citizen Recreation Cards used to be offered for \$11 and covered small game hunting for waterfowl, pheasant and turkeys, fishing and entry fees at state parks. The program was discontinued in 1991, but people who had applied for and received the cards can purchase a duplicate at DNR Service Centers for \$2.75 by presenting an old card and proof of identification. Nothing has replaced this program for seniors, however, if you are a Wisconsin resident and were born before 1927, you may fish free-of-charge by carrying proof of your date of birth.

## NATURAL JAMS

I am pleased that inquiries are coming in regarding my article on making wild berry jams. I found the following recipe for no-pectin wild strawberry jam in

a very old cookbook. You can use as many cups of berries as you have keeping the same proportion of berries to sugar as is called for in the recipe.

## WILD STRAWBERRY JAM

1 cup wild strawberries  
¾ cup sugar  
Sprinkle of cinnamon

Mash about ¼ cup of strawberries in the bottom of a saucepan to make some liquid so the mixture won't burn. Add the remaining berries, sugar and cinnamon.

Stir constantly while you bring to a boil over medium-high heat. Continue to boil, over medium heat, stirring occasionally for 20 minutes or until the mixture begins to thicken. Pour into sterile jars and seal.

Note: I have sprinkled in cinnamon with blackberries, raspberries and blueberries. Cinnamon and ground cloves with blackberries are very good. I don't have an exact measurement, but I use cinnamon like I would salt and ground cloves like pepper. I just sprinkle as if I were adding a bit of flavor. I start with ten cups of berries and because I don't like a lot of sugar, I have decreased the amount to ½-cup sugar per cup of berries. I have always been creative and never seem to be satisfied with one way of doing things.

You can add rhubarb (about ⅓ cup finely chopped) to each cup of strawberries or raspberries. I have added cooked plums (the small yellow-orange plums you find in the wild along roadsides) and June berries to raspberry jam, both delicious. I like white wine (about ½ cup to a 8-10 cup berry recipe) with raspberry and a red wine for the blackberry and blueberry jams. It is fun to experiment.

Hope this helps.

Barbara Estabrook  
Rhinelander

## COMMENT ON A STORY?

Send your letters to Readers Write, WNR magazine, P.O. Box 7921, Madison, WI 53707 or e-mail letters to [sperl@dnr.state.wi.us](mailto:sperl@dnr.state.wi.us).



# Heritage for the holidays

**T**RAVELER has a theory: Cold weather makes people more aware of who they are and where they came from. Why? It could be that the brisk rasp of a 15-below-zero breeze induces a certain clarity of mind. Then again, perhaps it's just the brandy/rum/whisky in that hot toddy.

Whatever the impetus, December seems to be the time to reconnect with one's ethnic heritage and history. Wisconsin, so rich in cultures from across the globe, offers many opportunities to get back to your roots. Here are just a few:

Put a little *oom-pah-pah* in your week! Enjoy a real German winterfest featuring professional ice sculpture, snowshoe races, a Christmas parade, community concert, caroling and more during Mayville's **Holiday Heritage Fest**, December 8–10. From 9 a.m. to 5 p.m. Mayville's downtown streets will be filled with the sweet aroma of freshly baked *stollen* and the pungent tang of savory *rouladen*. How can you resist? 920/387-1167.

Those in search of history might find a stop in Markesan fruitful. There, on December 9, the town will host **A Home-spun Holiday** to bring back the flavors of old. You can find a

Kick up your heels with the Irish dancers at the Milwaukee Public Museum.



MILWAUKEE PUBLIC MUSEUM

copy of your favorite holiday dessert recipe (could it be that *someone else* also



possessed Great Aunt Zephira's secret for chocolate figgy pudding?) and compete to win top prize at a holiday bake-off. 920/398-3031.

Recite the sagas of yore with pride and celebrate **Finnish Independence Day** on December 9 in Brantwood. Finns and friends can sup on a big bowl of *mojakka* (beef stew) cooked outdoors in a large kettle. Finnish poetry and music will ring through the Brantwood Community Center from 4:30 p.m. to midnight. 715/564-2525, 715/564-2251.

Hear tales of *La Befana* — the kindly old woman who brings gifts for good children and cinders for wicked little *ragazzi* — during an **Italian Christmas Dinner** on December 9 and 10 at Old World Wisconsin in Eagle. Enjoy holiday decora-

(BOTH PHOTOS) OLD WORLD WISCONSIN



Wintry weather adds to the charm of St. Peter's Church at Old World Wisconsin dinners. Keep a watchful eye for bearded visitors.

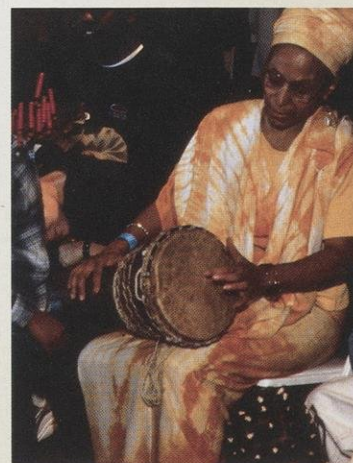
tions in the 1880s Wisconsin village, then dine on a traditional ethnic meal fol-

lowed by music and entertainment. Please call for times; reservations are required. 262/594-2922. On the web: [www.shsw.wisc.edu/sites/oww](http://www.shsw.wisc.edu/sites/oww)

Pick and choose your **Holiday Traditions** at the Milwaukee Public Museum from December 18–20. First, take in a performance of Serbian, German and Irish dance and song. Then make an ornament: A Danish paper heart, Polish *swiat*, or Scandinavian yarn doll. Free with museum admission. 11:30 a.m.–2:30 p.m. Friday and Saturday; 10 a.m.–1 p.m. Sunday. 414/278-2702. On the web: [www.mpm.edu](http://www.mpm.edu)

After all the paper hearts have been folded and the yarn dolls tied, the museum will open its doors on January 1 to celebrate **Kwanzaa**, the

African-American holiday corresponding with African harvest festivals. Food, dance, music,



MILWAUKEE PUBLIC MUSEUM

Kwanzaa colorfully celebrates the harvest, dance and culture in Milwaukee.

arts and crafts, cultural exhibits and a ceremony honor the day. Free with museum admission. 10 a.m.–7:30 p.m. See phone and website to the left for more details. ❧



## *Wisconsin, naturally*

### NEW HOPE PINES STATE NATURAL AREA

**Notable:** A forest of red oak, white oak and red maple stands beneath a canopy of towering white and red pines, a remnant of the vast forests that once covered this part of Wisconsin. Though the 173-acre stand is relatively young with only scattered old growth, the white pines are more than 100 feet in height and range to more than 2 feet in diameter. New Hope Pines lies in an area of steep, irregular topography — a legacy of the past glacier.

**How to get there:** From the intersection of State Highway 66 and County Trunk Highway A on the east side of Rosholt (Portage County), go south on A 1.5 miles, then east on County Trunk Highway T 1.3 miles, then south on Sunset Lake Road about 1.5 miles to a parking area on the west side of the road. *Wisconsin Atlas*: page 65, grid D6.



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