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SPECIAL SECTION: Color Wisconsin! Drawings and verse for children of all ages

WISCONSIN NATURAL RESOURCES

December 1989 Volume 13, Number 6 \$3.00



Winter reds
Harken the trumpeter's call
The little town that could (and did!)

A black-capped chickadee is perched on a vertical branch covered in a thick layer of white snow. The bird has a black cap, a white face with a black collar around its neck, and a yellowish-brown body. It is facing left, looking slightly down. The background is a soft, out-of-focus blue-grey sky.

Guess who's coming to dinner?

Maureen Mecozzi

A familiar sight late on a wintry Wisconsin afternoon is that of a black-capped chickadee (*Parus atricapillus*) scouting backyard feeders for the proverbial free lunch. Neither snow nor sleet nor impending dark of night stops this intrepid winter survivor from making its appointed feeding rounds.

Shrugging off icy gusts as if they were the breath of summer, the chickadee appears oblivious to the elements. While the wind howls, the tiny bird may pause on a feeder to crack a sunflower seed in its beak, then hop to a tree branch, hanging upside down on a twig to probe the bark for insect larvae, a rare winter treat. Then it's on to the suet ball next door.

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Black-capped chickadee

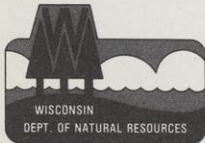
GREGORY K. SCOTT

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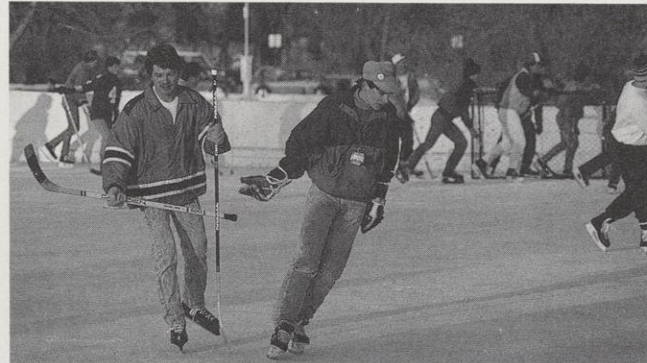
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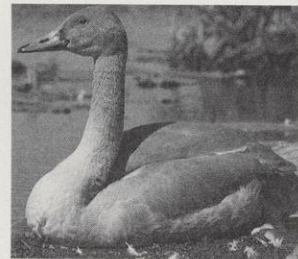


ROBERT QUEEN

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Thomas G. Jackson

The Land & Water Conservation Fund has been building ball parks, trails and community spirit for 25 years.



SUMNER MATTESON

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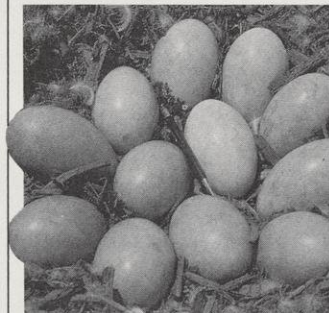
Sumner Matteson

Hard work and innovation could bring trumpeter swans back to Badgerland.



MOLLY O'SULLIVAN

FRONT AND BACK COVER:
Fox Sparrow by Michael James Riddet c 1982



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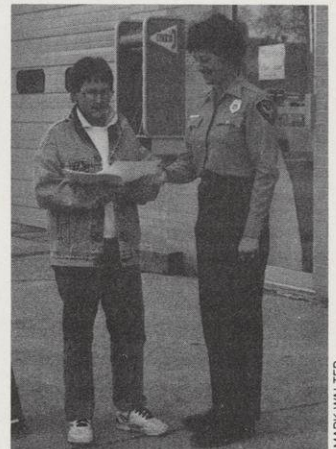
Anita Carpenter

Search the winter scape for splashes of red.

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Investing in our playtime

For 25 years, the Land and Water Conservation Fund has fostered outdoor recreation that bolsters community spirit, athletics, aesthetics and economic development in Wisconsin communities.



ROBERT QUEEN

Thomas G. Jackson

From a boat launch on Wind Pudding Lake to a diving board in the Trempealeau swimming pool, from Saxon Harbor on Lake Superior to tennis courts in Racine, from Mosquito Hill Park to the Moon Valley wayside, the federal Land and Water Conservation Fund (LAWCON) helps communities and public agencies build the places we play in every county and every corner of Wisconsin.

Just as in the movie "Field of Dreams," LAWCON dollars have carved ball parks out of corn fields and installed lights for night softball; as well as built safe swimming pools near treacherous waters; beautified roadside waysides and invested in nature centers, parks, tennis courts, trails, beaches, hockey rinks, sledding hills, picnic grounds and parking lots.

Since 1965, LAWCON funds totaling more than \$59 million have supported better than 2,000 projects in Wisconsin. Moreover, the money has done double work since each LAWCON dollar must at least be matched by state and local funds.

Throughout Wisconsin LAWCON-funded projects have strengthened the spirits of individual communities and improved the quality of community life.



DNR PHOTO



DNR PHOTO

Well spent LAWCON funds:

top: Converting railroad beds to bicycle trails.

middle: Training communities to plan, build and maintain parks.

bottom: Funding outdoor recreation in city neighborhoods.



The program fulfills the need for playgrounds, swimming and open spaces in cities as well as rural communities.

Southeast — The City of Hartford in Washington County spent LAWCON funds to reclaim the Hartford Mill Pond, dredge it and revitalize it as Centennial Park. The area teems with activity. The City landscaped around the pond and put in a boat launch. DNR's Urban Fishing Program and local fishing groups stock the pond with trout, bullheads and hybrid bluegills so kids can fish year round. Hartford recently added a warming shelter for winter activities. The community's Winterfest and summer art fair now center at Centennial Park, and local kids come here to learn skating in the winter and canoeing and kayaking in the summer. Even the junior high physical education classes use a running path around the pond. Future plans include paving the path so walkers and parents pushing strollers can enjoy it as much as the runners.

West Bend made even more extensive use of LAWCON funds in developing or buying parcels for seven parks.

Northeast — The Hattie Street Bridge spanning the Menominee River does more than unite Marinette, Wis. and Menominee, Mich. LAWCON grants helped build an extremely popular fishing pier just be-

low the bridge where Wolverines and Badgers trade angling tips and commerce.

The seed money LAWCON plants continues to bear fruit. "I think nearly every township in Shawano County has a softball field or park funded under this program," notes DNR Community Services Specialist Jeff Pagels.

"These small towns continue to develop these sites," he added. "It seems like every time I drive by one of these parks there's something new going up, and they didn't need any more state or federal help to make it happen," Pagels said.

North Central — LAWCON aids helped build the 52-acre Little Plover River Park in Portage County. The park has lighted tennis courts, a baseball field, a soccer field, a shelter house, a fishing pier accessible to disabled anglers and is adjacent to a trout stream.

Plover was a fast growing community before Little Plover River Park, but Bruce McMiller, the town's building inspector and zoning administrator says "subdivisions around the area just blossomed after Little Plover opened. I'd estimate 125 houses were built in the surrounding area." McMiller added, "To give you an idea of

how active the park is, over one tenth of the town's 8,000 residents are involved with the Little League program and about 200 participate in soccer."

Future plans for Plover include a multi-purpose trail to connect four other communities with Little Plover River Park while keeping younger bike riders off main thoroughfares.

Northwest — Where do you dunk your feet where there's no safe swimming hole? The towns of Grantsburg, Wood River, West Marshland, Lincoln, Anderson, Trade Lake and Sterling built a community pool with LAWCON assistance where kids can frolic and non-swimming adults can take lessons.

LAWCON hit the peak when Price County got a grant to buy and manage Timm's Hill, Wisconsin's highest spot. The 187-acre park provides ski trails, a picnic area and a lookout tower. The tower vista is especially breathtaking in spring and fall. Take a look.

In Taylor County, Wood Lake has a boat access, a beach, toilets, a local park and excellent fishing thanks to federal grants.

West — Sometimes recreation takes a back seat to land and water conservation. When Solider's Grove relocated its entire downtown to get out of a floodplain, LAWCON funds provided better than \$600,000 to buy and develop a large park for the renovated community.

Eau Claire County preserved Big Falls as a public hiking and swimming area with LAWCON funds. The waterfall park is a popular attraction and a peaceful spot for a picnic.

Southern — The prospect of a federal grant forged a cooperative venture between the Grant County communities of Potosi and Tennyson Park. Steve David, who helped plan the park midway between the two towns, called the original property "barren wasteland." The park is a real

gem. The town fire departments have put in two shelters. Community groups also built a volleyball court and a basketball court. Both pavilions are booked solid year round according to David.

Federal funds are also contributing to a green belt buffer around Madison called the "E-way." Designed to check urban sprawl and provide a natural green corridor around the growing capital community, the E-way will provide hiking paths, ski trails and quiet space for walking and nature study.

A LAWCON-funded ball park in Darlington provided the spark that is fueling an entire facelift for the downtown area. It started with a proposal to renovate downtown lots into softball diamonds. As the park was developed, old fuel tanks were yanked off an adjacent lot and the aging railroad tracks were removed. Sprucing up the neighborhood caught the interest of local businesses.

"When I first started pushing for this project, a lot of people had the attitude that 'you can't save a sinking ship,'" said Darlington Mayor Beverly Anderson. "When they could see that improving parcels one by one could accomplish things downtown, the community developed a new perspective." It has all resulted in an economic turnaround for Darlington. "Parks can lead to economic development," the mayor said.

Duane Hofstetter, DNR recreational grant specialist, backs up Anderson's contentions:

"LAWCON money serves as seed money," he says. "It has provided the incentive for development and community pride in many Wisconsin communities."

Darlington's softball complex is in use every night whether it's T-ball, pony league sports or adult recreation. The Jaycees even built a concession stand which has already more than paid for itself.

Darlington has no intention of stopping there. Next on the agenda is a family park area on the banks of the Pecatonica River off Main Street to improve another rundown down-



Mayor Beverly Anderson at the Darlington ball fields that prompted downtown renovation.

town area. The renovated river area will provide the opportunity for tubing, fishing and a canoe fest. Next to the park the community set up a day-care center to help parents who want to participate in water sports without endangering small children. Mayor Anderson expressed hope that a housing project for elderly residents will situate nearby.

The completed projects LAWCON supports are "a vital resource" to this community, Mayor Anderson said. "I hope LAWCON's importance won't be underestimated."

"This listing only provides a flavor of the community partnerships we've built with LAWCON projects," Hofstetter said. "We take part in public works recreation also. The program has invested in at least 14 waysides with the Department of Transportation, adding amenities, scenic overlooks, picnic areas, nature trails, even a canoe landing to encourage people to enjoy the Wisconsin outdoors when they take a rest from road travel.

"We made a special commitment to the University of Wisconsin system to ensure an opportunity to stretch your legs and appreciate nature right on campus," Hofstetter added. "There's LAWCON money

in Friar Woods and Drumlin Nature Trail at UW-Whitewater, several UW-Green Bay trails, the Putnam Trail at UW-Eau Claire, the Kinnickinnic development at UW-River Falls, the Schmeckle Reserve and Nature Center at UW-Stevens Point, Cedarburg bog, and the UW-Madison Arboretum.

"Practically every state park has made good use of these funds. LAWCON often provides the little 'extras' to make outdoor outings much more enjoyable — paved access roads, ample parking lots, bathhouses and toilets, boat ramps, facilities for disabled visitors and school playgrounds," he explained.

"Moreover, the LAWCON money comes with expertise," Hofstetter emphasized. "This is a partnership in better recreation. Sure, we provide money, but we also help plan the parks, give advice on purchasing equipment, help design ordinances for running parks, show sample contracts for hiring builders and parks staff and we are active participants in the Wisconsin Parks and Recreation Association, which promotes high quality facilities throughout the state."

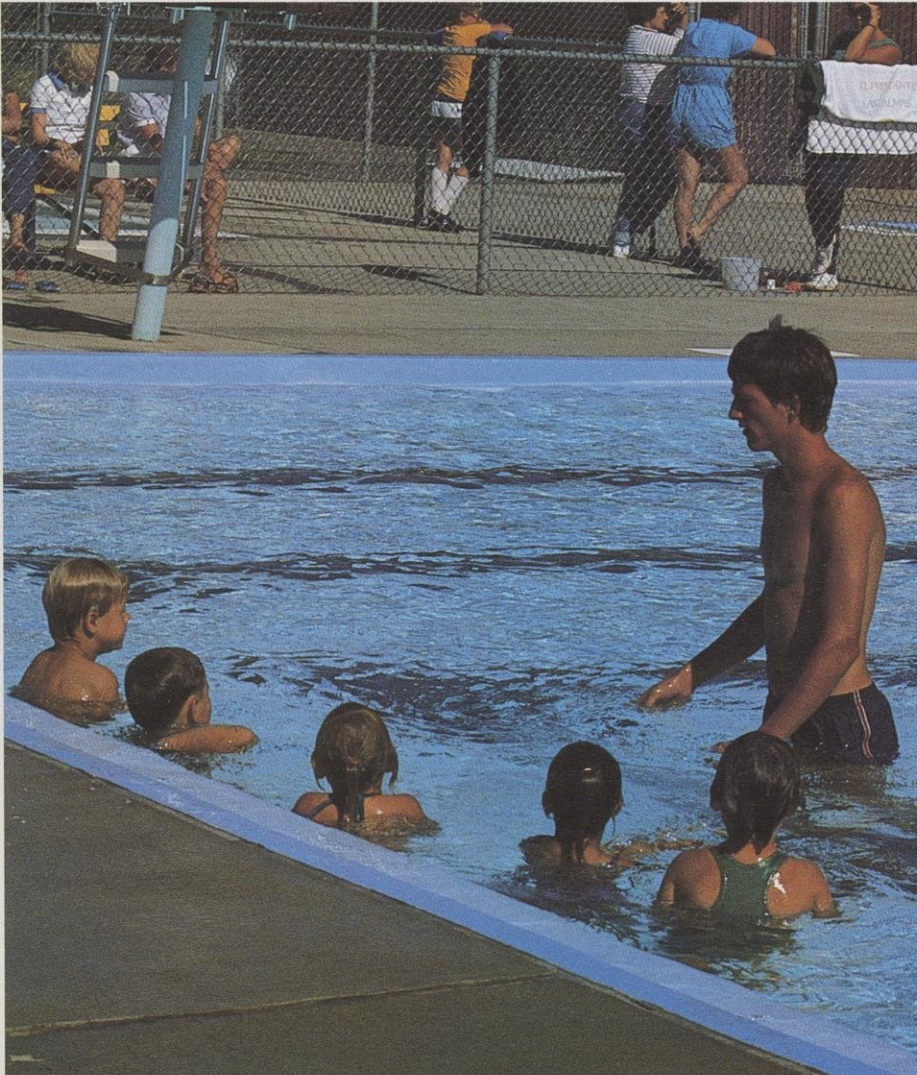
On LAWCON's 25th anniversary, we can reflect on a program true to its original mission as envisioned by its original guide in Wisconsin, Eric "Pete" Jensen: "The program must integrate quality, durability and good planning to provide better outdoor recreation or facilities."

Part of the program's built-in protection is its "conversion clause" — any property acquired or developed with LAWCON funds cannot be converted for any use other than public outdoor recreation without permission of the Secretary of the Interior. If a LAWCON project is converted, replacement land is required. In this way, generations into the future will see tangible evidence of the LAWCON legacy.

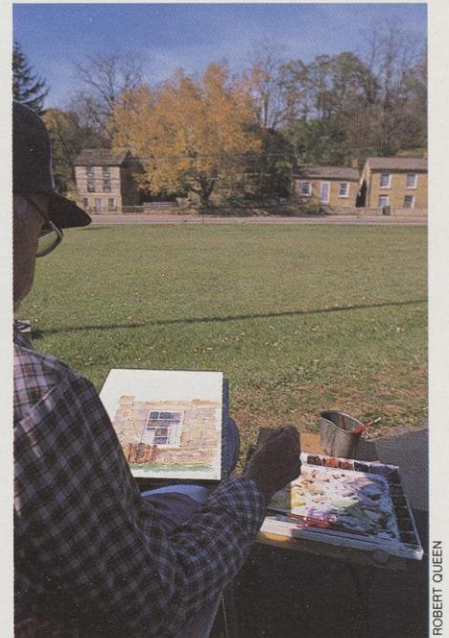
Despite a reason for celebration, there is cause for concern. Throughout the 1980s Congress dropped LAWCON allocations dramatically even though the offshore drilling



DNR PHOTO



DNR PHOTO



ROBERT QUEEN

The federal funds have built whimsical, colorful playgrounds for tots, sponsored community pools where kids can learn to swim safely and provided paved paths and trails where older visitors can equally enjoy the outdoors.



ROBERT QUEEN

Whether investing in ball parks or boat launches, LAWCON funds have helped every community enjoy the richness of outdoor experiences.



ROBERT QUEEN

taxes that largely fund the program are intact. Nationwide, LAWCON now funds about \$17 million in projects per year, as compared to an annual \$125 million average between 1965-80. Wisconsin's share peaked at \$7.1 million in 1979. This year we received \$350,000, in spite of the fact that communities are as interested as ever in this cost-sharing program. In 1987, Wisconsin was authorized to distribute only \$140,000 for local projects despite \$4 million in community requests. It is especially frustrating considering Congress has \$900 million to authorize for the fund.

Previously, LAWCON projects were funded on a first come-first served basis; now, LAWCON only funds projects for recreational facilities that will be used for several functions by a lot of people year-round.

To provide more stable funding for outdoor recreation projects, Rep. Morris Udall (D-Ariz.) and Sen. John Chafee (R-R.I.) introduced legislation to create The American Heritage Trust. Interest from the trust combined with the Urban Parks & Recreation Recovery program and the Historic Preservation Fund Act would furnish \$1 billion annually for approved projects.

This stable future would continue a nationwide commitment to outdoor recreation so eloquently described by President Kennedy when LAWCON was first proposed:

"How we Americans spend leisure time might seem to have little bearing on the strength of our nation or the worth and prestige of our free society. Yet we certainly cannot continue to thrive as a strong and vigorous free people unless we understand and use creatively one of our greatest resources - our leisure."

Thomas G. Jackson works with Wisconsin Natural Resources magazine while pursuing a graduate degree in English at the University of Wisconsin-Madison.

Harken the trumpeter's call

Bringing back the trumpeter swan
will take trial and error,
time and determination.

By Sumner Matteson



©SKYLAR HANSEN

For centuries, brilliant white swans unfurled seven-foot wingspans, descended onto large, shallow waters and heralded early spring in Wisconsin's marshes. (continued on next page)



SUMNER MATTESON



SUMNER MATTESON

The largest of North American waterfowl, trumpeter swans returned to nest here after wintering in the lower Mississippi River Valley.

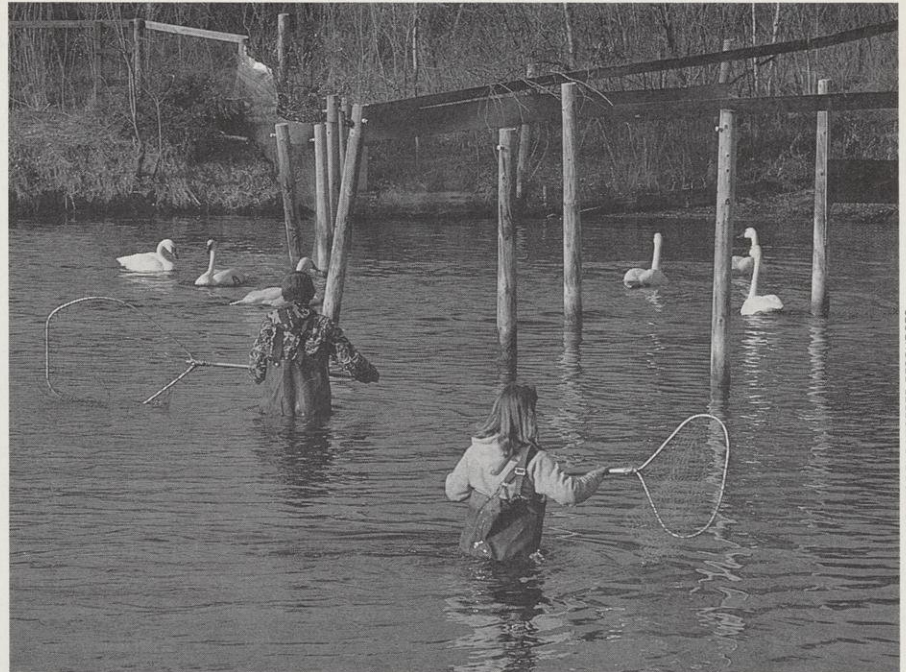
The trumpeter's blare no longer echoes across our wetlands on clear mornings, but it could. Restoration efforts plan to return the majestic bird to the upper Midwest.

A sad but familiar story

In the late 1700s, the Hudson's Bay Company began to harvest swans to meet a growing demand for swansdown. Even naturalists got into the act. John James Audubon prized trumpeter quills above all others for his fine, detailed sketches. Once a prominent feature of Wisconsin's wetlands, trumpeter swans disappeared from the state in the late 1800s as hunters for the millinery trade shot birds for their feathers (to adorn fashionable women's hats in Europe) and skins (to make powder puffs). Pioneers shot the birds for meat.

Swan populations drastically declined across the bird's vast North American breeding range, which stretched from the northern Pacific Coast east to James Bay in eastern Canada and south to Missouri. Concentrations of trumpeters formerly wintered down the Mississippi River from southern Illinois to the Gulf Coast. Historically, birds also wintered in Chesapeake Bay.

By 1932 only 69 trumpeters were seen in the lower 48 states; these in remote mountain valleys of southwestern Montana, southeastern Idaho, and northwestern Wyoming. Back in the 1930s there was real concern that the species might become extinct. In 1935, the U.S. government



Two-year-old trumpeters are rounded up at an overwintering site in St. Croix County. These birds will be matched with unrelated trumpeters and released at Crex Meadows as potential breeding pairs.

COURTESY OF DNR BUREAU OF ENDANGERED RESOURCES

established the Red Rock Lakes National Wildlife Refuge in southwestern Montana solely to protect trumpeters. Their populations grew until they saturated available habitat within a 100-mile radius including portions of the adjacent Yellowstone National Park. Beginning in 1938, wild cygnets (swans in their first year) were transplanted from Red Rock Lakes to national wildlife refuges in Wyoming, Oregon, Nevada, Washington, and South Dakota. Unknown to biologists, a separate Alaskan population of a few thousand birds and a remnant flock in Alberta, Canada survived.

Today, nearly 12,000 trumpeters thrive in Alaska, and approximately 1,750 swans live in Canada and in the western U.S., yet only 250 birds live east of the Rockies.

Trumpeter swan restoration began in the upper Midwest in 1966, when Hennepin Parks in southeastern Minnesota obtained a pair of cygnets. By 1982, Hennepin Parks had restored a flock of 82 birds.

Following in the steps of restoration programs in Minnesota, Michigan and the Province of Ontario, a group of Wisconsin DNR wildlife bi-

ologists, endangered species specialists and researchers crafted a two-pronged plan for rebuilding at least 20 breeding and migratory pairs by the year 2000.

A foster parent program for trumpeters

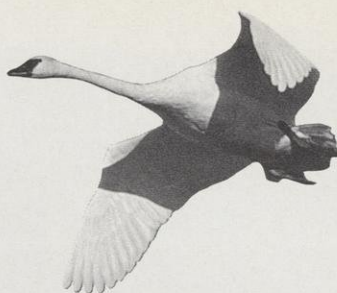
The first prong was an experimental and controversial technique called "cross-fostering." Eggs from trumpeter swans were added to nests of mute swans that would act as foster parents to the young trumpeters.

The technique had mixed success at the Grays Lake National Wildlife Refuge in Idaho, where sandhill cranes fostered whooping cranes between 1975 and 1988. Sandhills successfully raised whoopers, but no breeding pairs established from the cross-fostered whoopers. Many of them died before fledging due to coyote predation, inclement weather at hatch time, and poor habitat and food conditions from extended drought.

Cross-fostered mammals and birds may get confused at breeding age, trying to mate with the foster species

top left: Biologist Becky Abel assisted by Milwaukee Zoo's Ed Deibold collected trumpeter swan eggs at a cooperating Wisconsin game farm. The trumpeter swan eggs were placed in mute swan nests for incubating and hatching.

bottom left: The experiment to test if mute swans will raise trumpeters as their own is called "cross-fostering." Researchers are concerned that cross-fostered birds might interbreed.



Trumpeter swans on the wing.

©SKYLAR HANSEN

rather than their own. It's an issue that remains unresolved for swans. Ontario projects have seen no such cross-breeding in seven years of cross-fostering trumpeter swans on mute swan nests, but this year's breeding season indicates one such unconfirmed pair bond.

Cross-fostering offered an attractive benefit — we could control the exotic mute swan populations while working to re-establish the native trumpeters.

Mute swans nest in much higher densities than trumpeters and can harm wetland plant communities because they uproot large quantities of aquatic vegetation while feeding. Mutes are also less tolerant of other waterfowl than trumpeters.

In spring 1987, 20 trumpeter swan eggs were purchased and sets of five eggs were placed under four pairs of mute swans on Phantom Lake in Waukesha County. Eleven of the cross-fostered eggs hatched, but all of the cygnets died, apparently preyed on by snapping turtles and mammals.

It was a major and painful disappointment, but the year was not a total loss. Ray Whitney of the Dellwood Wildlife Foundation donated six cygnets to the program; the Milwaukee County Zoo purchased a breeding pair that may contribute cygnets, and the Minnesota DNR helped us obtain a pair of Alaskan birds that were placed on Monastery Lake in Milwaukee County in cooperation with the Wisconsin Metro Audubon Society.

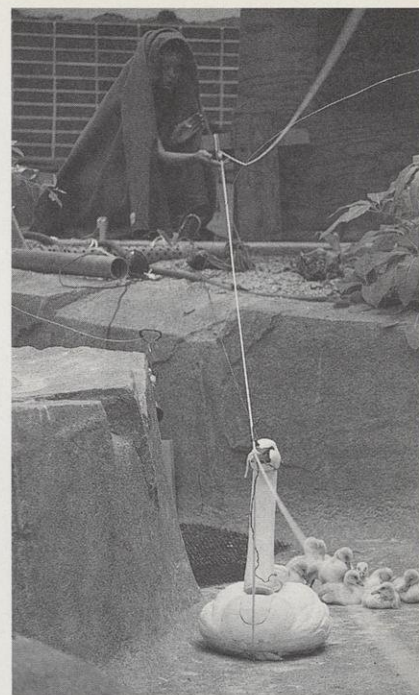
During 1988, we again tried cross-fostering trumpeter swans. Three

weeks before foster eggs were placed, volunteer Doug Zaidel and UW-Milwaukee intern Maureen Gross trapped and relocated snapping turtles from the Phantom Lake nests. Fifteen fertile eggs were purchased from two game farms in Wisconsin.

All 15 eggs hatched. At one nest, an adult male (called a cob; a female swan is called a pen) attacked the newly born cygnets and all eventually perished due to trauma. At a second nest, snapping turtles devoured three cygnets, and the remaining two were transferred to a game farm. At the third nest, we concluded that traps to capture snapping turtles were likely baiting turtles into the area, so the traps were moved. Cygnets found tough times here also: two cygnets apparently starved to death, one disappeared into surrounding aquatic vegetation, and only two cygnets survived to fledging age. (Cygnets can fly at the end of their fourth month.) One of these cygnets subsequently died of lead poisoning, and the remaining cygnet was removed and treated for lead poisoning at the Raptor Center in Minneapolis.

Again, we salvaged the year by obtaining 23 cygnets through purchase and donation from game farms and the Lincoln Park Zoo in Chicago.

What did we learn from the 1987 and 1988 field seasons? We demonstrated that cross-fostering can work and trumpeter swans can be raised to fledging age, but at a great cost. Trumpeter eggs, which captive birds lay three weeks later than mute swans, are heavily preyed upon by snapping turtles. Mute swan cygnets



SEQUENCE PHOTOS BY ROBERT QUEEN



may climb on their parents' backs to escape turtles, but trumpeters generally don't do this. Mute swans fledge earlier than cross-fostered trumpeters, and the difference in fledging periods may cause families to break up before the fostering trumpeters can fly, protect themselves or be led to wintering grounds.

Also, trumpeter swans may be more susceptible to lead poisoning than mute swans because mutes feed more on plant leaves and stems while trumpeters feed more on seeds and tubers. Trumpeters are more likely to swallow lead shot settled on the marshy bottoms. It only takes one or

left: Since wild birds imprint on their "parents" in the first few days of life, researchers only let the young hatchlings see a surrogate parent swan decoy. These trumpeters were flown to Crex Meadows as four-day-olds.

bottom left: Swans that will be raised at managed sites for two years learn to swim and feed in the safety of their zoo nursery.

bottom center: Young trumpeters are kept at the zoo with other family members for five weeks. When they breed as adults, they will seek mates outside their family group.

bottom right: Project managers provided "parent" decoys in the zoo's brooder boxes so young birds would form better social bonds in this artificial situation.

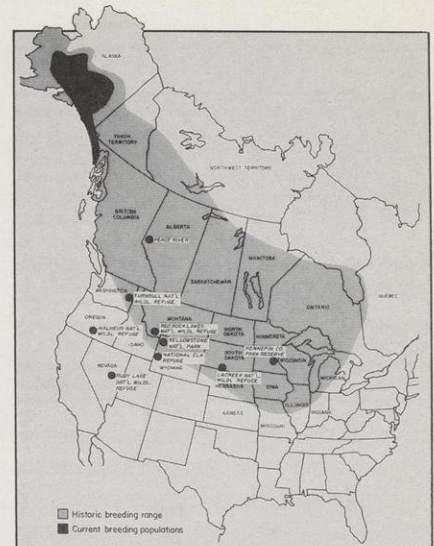
two lead pellets to sicken or weaken a trumpeter swan. Few of the mute swans examined in the Phantom Lake study area had elevated blood lead levels.

By 1989, both Wisconsin and Michigan discontinued cross-fostering; Ontario kept on and suffered its worst field season, losing all cross-fostered young.

the next six years. (See "North to Alaska" in this issue.) The Milwaukee County Zoo will carefully incubate these Alaskan eggs. Once cygnets hatch out, siblings will be grouped together for four months and released to fenced ponds after their flight feathers are clipped.

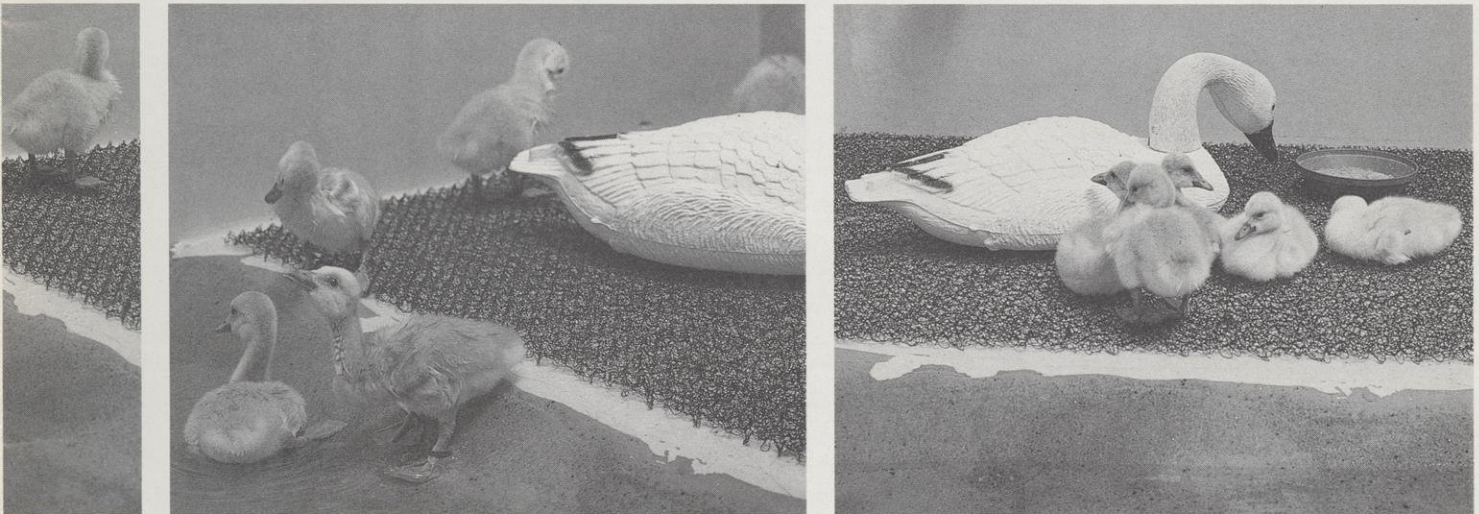
Trumpeters imprint on decoys

To test if captive swans will adapt to wild conditions better and more quickly if they are not exposed to people, UW-Madison wildlife ecologists and DNR researchers are conducting a two-year study. Soon after eggs hatch at the zoo, young cygnets are introduced to a swan decoy. As four-day-olds, these birds are flown



COURTESY OF ALASKAN BIOLOGIST HENRY HANSEN

Trumpeter swans once found food and shelter in a vast band of wetland habitat stretching from Alaska in an eastward arc across Canada and the upper United States. Development and exploitation have reduced their current breeding grounds to those areas shown in black.



Artificial breeding trials

The second prong of the swan recovery plan is an artificial breeding program in which eggs will be incubated and hatched. The young trumpeters will be raised in captivity for their first two years when they are mostly vulnerable to predators and the elements. As two-year-olds (so-called subadults), the trumpeters will be paired and released at selected wetlands.

As planned, at least 30 to 40 trumpeter swan eggs will be collected from Alaskan birds each spring for

to Crex Meadows near Grantsburg and released on marshland. A person hidden from view in a camouflaged float tube pulls a surrogate parent through a marsh, teaching the young swans to feed on aquatic plants, to flock close to the surrogate when an alarm call is broadcast from a tape recorder and to seek nighttime shelter in a predator-proof enclosure. As directed by UW graduate student Becky Abel, the researchers are investigating if young birds so protected until they can fly will survive their first year and better adapt to the wild than birds that are raised by people and released as two-year-olds.

Trumpeters are protected for two years after hatching

Thankfully, with plenty of help, our two-day dash to Alaska produced 38 swan cygnets: 10 were delivered to Becky Abel for research at Crex Meadows; the rest spent five weeks under the watchful eyes of Milwaukee County Zoo staff. At 13 weeks of age, the cygnets were sent to their new homes in southern and southeastern Wisconsin where they will grow for two years before they are paired with unrelated birds from



COURTESY OF DNR BUREAU OF ENDANGERED RESOURCES

Mute swans potentially cross-fostering trumpeters got a check-up and collar to monitor the bird's health and movements.

other sites and released into the wild.

You might think these "starter homes" would have to be isolated wetlands. In fact, the trumpeters will be raised outside a minimum-security prison (the Oakhill Correctional Institution in Dane County) and a suburban business park (the General Electric Medical Systems plant in Waukesha County).

Ricky Lien at Oakhill and Maureen Gross at GE will have their hands full maintaining cygnets that may eat up to 20 pounds of food per day. The swan diet consists of a commercial feed supplemented with aquatic plants until winter, when store-bought greens will be provided. During the summer, Ricky tested and collected duckweed from area ponds and Maureen sifted through aquatic plants to collect sago pondweed, a favorite food of the swans.

With help from many DNR wildlife managers, trumpeters ultimately will be released to wetlands that are somewhat isolated from human dis-

turbance. The wetlands must be relatively free of lead shot or lead sinkers and have stable water levels; abundant aquatic food plants like pondweeds, arrowhead, wild celery, wild rice; nesting cover of cattail, sedges and bulrush; and no power lines within the several hundred yards swans need for "takeoff space" to start climbing to higher elevations.

The next challenge

All in all, it's been a very good year for trumpeter swans in Wisconsin. For the first time in over a hundred years, a pair of trumpeter swans nested in Wisconsin and produced young. The birds flew over from Hennepin County and nested west of Cumberland on a 10-acre beaver flowage. Also, 17 cygnets raised at Crex Meadows fledged.

A key challenge for the years ahead is to teach these artificially-raised birds how to migrate. One idea floated at the recent 12th Trumpeter

Swan Society Conference in Minneapolis is to imprint swans on an ultralight aircraft (already tried in Ontario) and lead the swans down the Mississippi River valley to secure wintering areas. Dr. Stanley Temple at UW-Madison would like to try imprinting swans on a remote-controlled model airplane, the size and shape of an adult trumpeter swan. The plane would lead birds south.

Stop shaking your head. This is what science is all about. This combination of trial-and-error experiments and educated guesses may be the only way that our children and grandchildren will see these elegant birds gracefully descend in our wetlands, and hear the swans' sonorous reveille on a clear morning. We must teach our children to be better stewards in safeguarding the trumpeter, a symbol of nature's magnificence. ■

top right: Trumpeter swans feeding on seeds and tubers from lake beds can pick up spent lead pellets. Ingesting even one or two pellets can poison these large swans.

bottom right: Wildlife biologists hidden in cattail-covered float tubes guide the swan decoys that continue the young cygnets' lessons at Crex Meadows near Grantsburg.

You can help

Efforts to manage, research and re-establish trumpeter swans cannot continue without your support. The program is largely dependent on private contributions. By supporting the Endangered Resources Fund on your state income tax form, or by contributing directly to the Natural Resources Foundation of Wisconsin, Inc., P.O. Box 129, Madison, WI 53701-0129, you can play an important role in trumpeter swan recovery.

Also, be extra careful to identify your target species when you hunt. Accidental shooting of trumpeters continues to be a problem in the Midwest although trumpeters are twice as large as a snow goose and lack the goose's black wing tips.



©SKYLAR HANSEN



SUMNER MATTESON



RANDY JUREWICZ

Crossing rugged Alaskan peaks en route to swan nesting areas.

North to Alaska

A two-day scramble for trumpeter swan eggs took teamwork.

Sumner Matteson

The research at Crex Meadows and the established new rearing sites in Wisconsin redoubled our enthusiasm to collect Alaskan trumpeter swan eggs last summer. Governor Thompson helped us enlist the aid of Terry and Mary Kohler to fly myself, DNR Nongame Section Chief Randy Jurewicz, and Michigan biologist Joe Johnson to Fairbanks in a Windway Capital Corporation jet. Commercial flights would have been riskier because swan eggs need constant care and might not survive all the jostling and delays in stops, layovers and plane changes.

We departed Milwaukee at 2 p.m. on June 5. Twelve hours later, the Kohlers put us safely down in Fairbanks. It felt wonderfully odd to experience daylight at 11 o'clock at night in this Land of the Midnight

Sun. Hardly a soul was around as we unloaded our gear, then took a cab to our motel.

The next morning we flew from the Fairbanks airport in a U.S. Fish and Wildlife Service (USFWS) Cessna 185 float plane, piloted by biologist Rod King. We landed at an island base camp on Minto Flats, a vast wetland complex thousands of acres in size.

A log cabin equipped with a stove allowed Randy Jurewicz to heat hot water bottles we would need to keep the swan eggs warm. Three foam-lined, box-like, black suitcases loaned by the Minnesota DNR would house the 40 trumpeter eggs we would collect and transport back to Milwaukee.

On this trip, I would also collect 20 eggs for Michigan's recovery program. Joe Johnson designed and built two special wooden crates that

Jurewicz would have to keep warm with hot water bottles. When I say "keep warm," I mean that the suitcases and crates had to be kept at a constant temperature in the low 90s.

The weather was relatively warm, in the upper 50s, when we took off on our "egg hunt," but conditions were less than optimal at many nest sites. An extensive spring thaw had melted the deep snows and flooded lowland areas. Several nests, normally about six feet across and two feet above water, were reduced to floating mats or moats, with eggs in standing water.

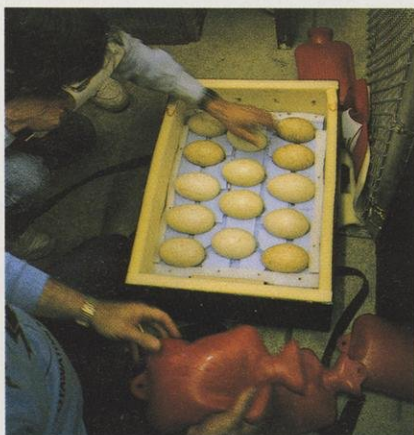
Our Fish and Wildlife Service permit required us to leave at least two fertile eggs per nest. When we came upon a nest with only two fertile eggs among four to six available, we would push on to the next lake. We never saw more than one pair of trumpeter swans per shallow lake.

At each nest Rod King and I would follow the same procedure. He skillfully taxied as near as he could to a trumpeter nest (Rod had marked each nest on a U.S. Geological Survey topographical map well before we arrived in Alaska). As he coasted in Rod would wait for the defending adult to depart before proceeding closer to the nest. I waded towards the nest carrying a small grey suitcase and day pack.

Once I reached the nest, I wrote a letter and number in pencil on each egg. The letters were also written on the topographical map to identify each nest location for future reference. I tallied each letter and number on a data sheet, measured each egg with a metric caliper and wrote the measurements on a data form. Finally, I candled each egg using a coffee can-like device with black rubber stretched over both ends. By holding the rounder portion of the egg up to the sun, I could look through a small hole into the egg. Infertile eggs look opaque or have whitish blotches discoloring a dark embryo mass. If the egg is fertile, a sharply defined line separates the dark embryo from the translucent air cell at the rounded portion of the egg.

After leaving two fresh eggs per

nest, the remaining viable eggs were placed in the styrofoam-lined grey suitcase and shuttled to one of our black suitcases in the float plane. Each egg had its own styrofoam compartment. Electronic digital thermometers strapped to the outside of each suitcase kept accurate temperature readings via heat sensors attached to a cord inside each suitcase.



Eggs were nestled in foam-filled suitcases and warmed with hot-water bottles to incubate them on the 10-hour journey back to Wisconsin.

As the suitcases were filled, King flew them back to base camp and I handed them over to Jurewicz. Randy swapped the full boxes for empty suitcases warmed with hot water bottles so we could continue collecting.

The Alaskan base camp where trumpeter swan eggs were incubated and tended for 13 hours until 60 eggs were collected.



Sometimes, Rod could taxi right up to a nest and I could step off the plane onto the nest edge. At other times, the plane could get no closer than several yards away. This made life interesting! I was suffering from acute air sickness and had eaten a very light breakfast. I skipped dinner the night before. Not smart! I felt a little disoriented each time we touched down on a lake.

Rod had given me a special life vest with a ripcord that would inflate the vest if I fell through a floating bog mat into the water that was reputedly bottomless.

If you've ever attempted to walk on a bog mat, you know the slow trampoline-like feeling with each step, except bogs don't spring much. Since I have a fairly lively imagination, each misstep created images of dropping into a cold, dark liquid abyss.

To my surprise, I only lost my balance once. At that point I jumped for the nest edge and almost landed in the nest cup. It's amazing what a good shot of adrenalin will do.

Many of the nests were nestled in beds of horsetail (*Equisetum*), some were in sedges, a few in upland marsh settings, and one was adjacent to dead timber we couldn't reach. We got stuck here for 20 minutes when the wind nudged the plane onto some tangled timber hidden beneath the surface.

At about 10 p.m. Rod landed the plane about 100 yards from the nest when an adult male flying parallel to us suddenly veered right toward the propeller. Rod turned the plane sharply right to avoid a collision. Twenty seconds later we heard a tremendous thud at the rear of the plane. Rod turned to me and said: "My God, we've just been attacked by a trumpeter!"

Reaching the nest, we both jumped out and looked back. Two adults were swimming side by side about 150 yards away; there was no indication that the bird had injured itself, but damage had been done — the communication antennas at the tail of the plane had been clipped off. We



U.S. FISH AND WILDLIFE SERVICE

Three Alaskan Amigos -- (left to right) author Matteson; Rod King, U.S. Fish and Wildlife Service biologist and Randy Jurewicz, DNR Nongame Section Chief, at the base camp.

had no way to radio the Fairbanks airport to inform them of our situation. At day's end back at the cabin, Rod called his wife on a short-wave radio, and she in turn called the airport to inform them of our expected arrival time.

In all, it took us 13 hours to collect 60 eggs.

In total, I handled 134 eggs at 27 nests; 101 (75 percent) of these were viable, although half the nests contained one or more nonviable eggs.

The trip back to Milwaukee on June 7 was swift but somewhat nerve-racking because we had a difficult time keeping one suitcase warm. The temperature in that box never broke 90°. We had been advised to be careful to avoid overheating the eggs. Not much had been said about chilling them. As it turned out, maintaining the temperature in this particular suitcase in the mid- to upper 80s did not create a problem.

I slept much of the way home while Randy and Joe carefully monitored the eggs and the Kohlers skillfully flew the jet. Every now and then I would wake to hear Mary Kohler offer us sandwiches or coffee and see Randy or Joe with a pen knife per-

forming surgery on the styrofoam lining of a suitcase or crate. Randy also relished the challenge of repairing an electronic thermometer that had accidentally gotten wet. No more than four minutes after he started tinkering with it, the thermometer was functioning again. "There,"

Randy beamed, "back in service."

The flight to Milwaukee took 10 hours. Thirteen hours after I had collected the last egg, 39 of the 40 (one was discovered addled en route) were placed in incubators at the Milwaukee County Zoo. Joe Johnson continued on in another plane with his 20 eggs.

Under the direction of curator Ed Diebold, the Milwaukee County Zoo staff did an outstanding job monitoring the eggs. Thirty-eight of 39 eggs hatched between June 11 and June 27 — a phenomenal 97 percent hatch rate — the highest recorded to date for a swan restoration program. In Michigan, hatching success was equally high — 19 of 20 eggs successfully hatched at the Kellogg Bird Sanctuary in Kalamazoo. The Alaskan trumpeters are now home in the Midwest. ■

Sumner Matteson is a nongame wildlife biologist in DNR's Bureau of Endangered Resources. He also leads DNR's Trumpeter Swan Recovery Project.

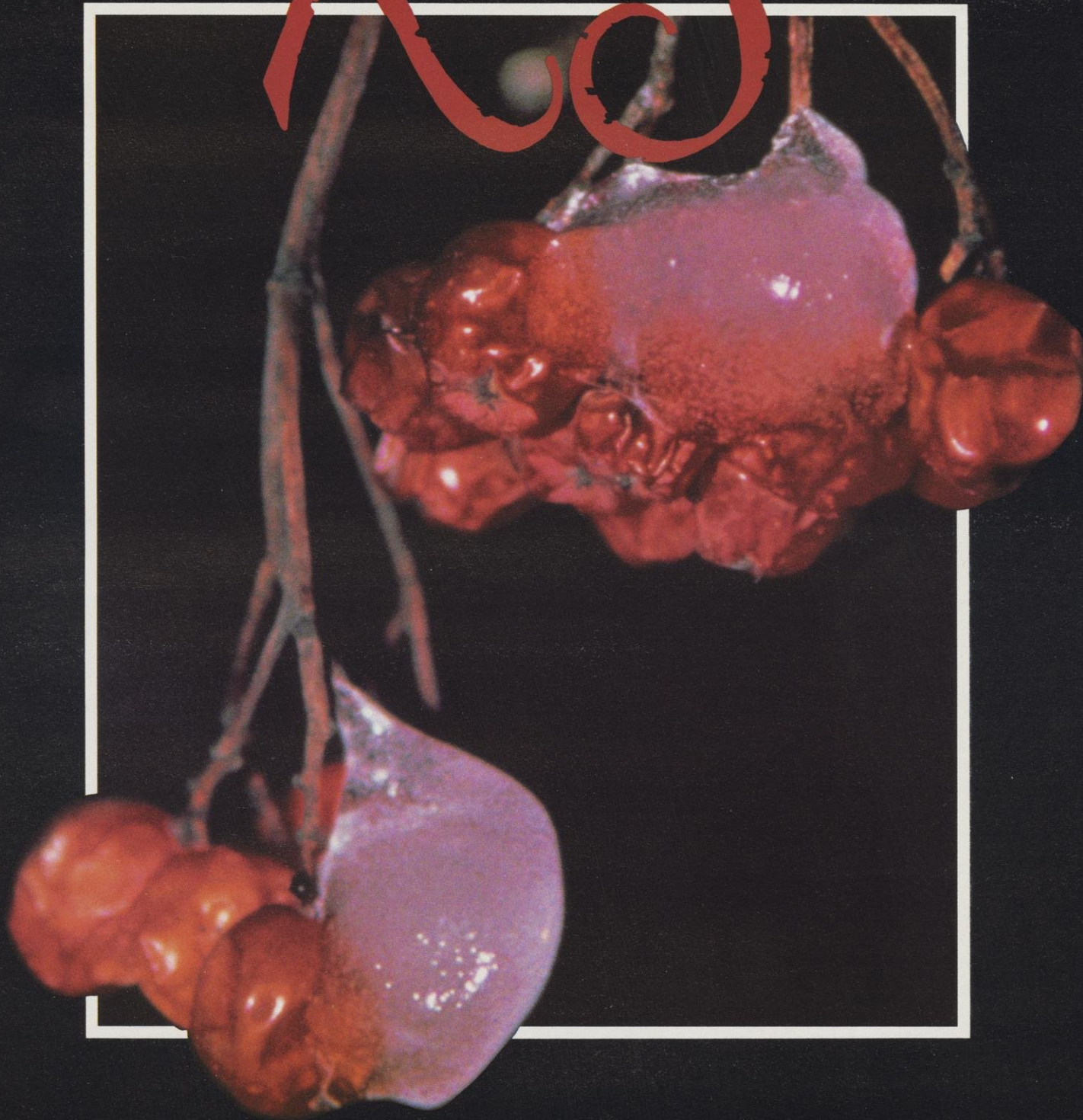
below: The aim of Wisconsin's recovery program: wild trumpeters in native nests throughout their wetland range in the Midwest.



ELDON MCLAURY, USFWS

W I N T E R

Ready



In search of color in the stark winter world.

Anita Carpenter

As the snow swirls and the temperature starts to plummet, it's tempting to just curl up with a good book in front of a blazing fire or watch another football game on television.

Outside, the cold white snowscape is broken by stark, black silhouettes of leafless trees against a blue horizon. Evergreen branches sag under the weight of the most recent snowfall.

Perhaps I'm impatient at being cooped up or maybe I just need an excuse to get out, but I decide to explore nature's winter reds, those bright flashes of rich color that can enliven a harsh winter.

I first glimpse red in a pair of northern cardinals that visit my feeders early each morning. Who has never been struck by the beauty of a bright red male cardinal all fluffed out and perched peacefully in a frost-covered bush? I call "my" cardinal "Mr. Chips" as his repeated chipping call reveals his location. In early January, a month earlier than last year, Mr. Chips burst into song atop our sugar maple, a welcome respite from winter's songless monotony.

Cardinals are not the only red birds of winter. The brick-red plumage of male red crossbills may help you identify them as they visit thistle feeders or deftly extract seeds from evergreens heavy with cones. The red crown of both male and female common redpolls are characteristic of this other winter finch. The dime-sized red spot on the back of the heads of downy and hairy woodpeckers denote the males. And I am thrilled every time I see a red-bellied



STEPHEN J. LANG

top left: High bush cranberry.
above: Red-bellied woodpecker.
right: Rose hips.
below: Red granite boulder.



ANITA CARPENTER

BARBARA MULVANEY





HERB LANGE

above: A male northern cardinal brightens up a wintry morning.
right: A fox squirrel dines on a flowering crab.

woodpecker or hear its distant rattle in the woods. Both sexes have red on their heads; on the males, the red patch extends forward to the base of the bill.

My search takes me to low-lying areas where dense thickets of red-osier dogwood contrast vividly against the snow. Scattered like pick-up sticks thrown in a snowbank, the burgundy-red stems provide cover for cottontails and ring-necked pheasants. If you look more closely, you may find inconspicuous woven nests of the yellow warbler supported by the thin stalks. The stems often come under attack from hungry rabbits. In spring, you can measure the snow depth by looking for the rabbits' gnaw line.

The single-file tracks of an unseen red fox lead me to surrounding up-



ANITA CARPENTER



lands through a clone of tall, twisted antler-like staghorn sumac. Ice cream cone-shaped clusters of scarlet red, fuzzy-covered seeds top each stem. If I had been here in late summer, I could have gathered a handful of the acidic fruits, crushed them and made a pleasing lemonade by adding water and sugar. By winter, the sumac clusters are tough and dry. Something must eat these, but I have yet to see a creature nibble even one.

In the upland woods, a slender, agile flash of red scampers to the tree top. This perky red squirrel had already announced my approach with a loud rolling chatter, but now he is intent on plucking an unopened cone. Returning to his favorite branch, he snaps open the cone scales to extract the nutritious seeds, then discards the inedible parts in an ever-growing mound on the ground.

As I watch the red squirrel, a thin, high-pitched tinny "enk-enk-enk" alerts me to the diminutive red-breasted nuthatch spiraling about on a nearby tree trunk. This little bird in constant motion permits only brief glimpses of his rusty-red breast.

Under a canopy of evergreens, I brush aside the insulating blanket of snow hoping to discover the small



top: Red osier dogwood stems. A favorite winter food for many animals.
inset: A yellow warbler nest among the dogwood.

ANITA CARPENTER

red berrylike fruits of wintergreen. The aromatic fruits should remain on this ground-loving plant until spring unless ruffed grouse, mice, or white-tailed deer discover the tasty treats.

Close to the ground a few burnt-red, shriveled rosehips are all that remain of a large patch of last summer's wild pink roses. Hungry rabbits have nipped clean many stems and enjoyed the vitamin C-rich rosehips.

Red fruits may still be found on the rough winter landscape. Purplish-red flowering crab apples sustain cardinals, starlings and fox squirrels during winters with deep snow cover. Those crab apples the others don't eat will be stripped by robins when they

return to a Wisconsin buried under a foot of snow. Red highbush cranberries hang in clusters on ten-foot shrubs. Often touted as a favorite food of birds, the cranberries seem shunned by the birds I see and remain available throughout the winter. The berries are sometimes eaten on the northerly spring migration when little other food is available. Barberry shrubs are again laden with quarter-inch cardinal-red fruits. Last year, cedar waxwings slipped into the seemingly impenetrable thorn-covered bush to devour every last fruit.

Looking up, I see the dark red buds of silver maples. Am I imagining that the tiny buds are starting to swell? Hungry fox squirrels balance precariously on the outermost branches to dine on these succulent morsels.

I start back home along a fencerow piled with red granite boulders. My cheeks are red from exposure to the chilly temperatures as day slips into early night. A glorious sunset backlights my shadow in many shades of red as I open the door and face the warm, glowing fire. Winter isn't so cold and colorless after all. ■

Anita Carpenter forwards nature notes from her Oshkosh home.

The little town that could (and did!)

One town leader's dedication and drive
provides an environmental tale for our times.

*Julia Riley
and Kim Walz*

This is the story of a small town that did a big deed, one person who made a great difference and the final chapter of an environmental era whose closing we can all celebrate. Surprisingly, it's also a tale of sewage.

The Town of Pence, population 200, is located in northern Iron County near the Gile Flowage, Hurley and the Montreal River that forms the border between Wisconsin and the Upper Peninsula of Michigan. This is a land of woods and water. It is part of the scattered mineral belt stretching from Northern Minnesota through the UP where industrialists mined for iron in the west; iron, zinc and copper in the east.

Pence was a thriving residential area located right on the edge of active iron deposits. The mines have been closed since the mid-1960s, but the Town of Pence survives despite economic hardships.

A simple sewerage system was first installed in Pence by the Works Progress Administration during the



Sweating the details. Pence Town Chairman Earl Brackett reminds construction workers of curb and gutter specifications that will reduce seepage under new sidewalks after the interceptor sewer is completed.

great public works projects of the Great Depression. The town was underlain with 12-inch concrete pipes that converged in a large poured concrete tank. This so-called Imhoff tank was designed to settle out and digest some of the feces and grit before wastes were discharged to an adjoining wetland. Imhoff tanks were com-

monly used to provide the basic wastewater treatment called "primary treatment."

The simple system served the people of Pence for over 50 years, but three things happened to make the system obsolete. First, the concrete pipes began to age and crack. As the cracks grew, more and more groundwater infiltrated into the sewer. Manholes topped with brick and underlain with cement also leaked, draining rain water and melting snow into the system. On rainy days, clear water streamed into the sewerage system, wastes had no time to settle in the Imhoff tank and raw sewage flowed into the wetland.

Second, history taught us we had to

improve our sewage treatment practices to better prevent waterborne diseases like cholera, typhoid and diarrhea. We had to improve sewage treatment technology to protect human health, fish, wildlife and other downstream water users.

Third, in 1972, Congress passed the Clean Water Act that set national

goals to "restore and maintain the chemical, physical and biological integrity of the Nation's waters." Consequently, all sewage treatment managers were required to install "secondary treatment" systems that used bacteria, physical and chemical treatment to further remove organic wastes before wastewater was discharged to rivers and lakes.

Building a modern wastewater treatment plant is fraught with pitfalls. For most small communities, sewer construction is the largest and most expensive public works project the town will ever undertake. To a certain extent, larger communities have a distinct advantage because the basic construction costs are about the same whether you build a sewage treatment system for 200 or 400 people, but larger towns can spread construction costs among a larger population. Also, installing sewage pipes is a major, disruptive project for a community, not at all like stringing a few power lines or installing cable TV. Building a sewer is tantamount to building a pyramid, only it's all underground where few will ever be awed by the intricate construction. Finally, few community leaders have the expertise to review blueprints, hire crews, contract materials and oversee construction.

In spite of the risks, Pence clearly needed a better way to manage its sewage. In 1980, the town board received a \$22,771 grant from the Wisconsin Fund to start planning the new wastewater treatment plant. Public response to proposed plans were mixed; residents were worried that the new construction was too expensive.

Amid the controversy, a lifelong resident, Earl Brackett, stepped forth and recommended that the town board set up a special sewer committee to study the technical plans. Typically, officials in small towns are volunteers who also work a full-time job aside from their civic responsibilities. Since few are trained to review technical engineering plans, Brackett reckoned that each committee member could study a small portion of the

First grants, now loans to invest in cleaner communities

Since its inception in 1978, the Wisconsin Fund administered by the Department of Natural Resources awarded 761 community grants investing \$955 million to build community wastewater treatment facilities. The Town of Pence was one of the last small communities to receive a Wisconsin Fund grant.

Although the grant program ended, the governor and legislature authorized \$243 million in state bonds to set up a revolving loan fund called the Clean Water Fund. Rather than grants, this program will provide low-interest loans to communities for improving and maintaining wastewater treatment facilities. The first Clean Water Fund loans will be awarded after April 1, 1990 to continue Wisconsin's tradition of community investment and commitment to maintain a cleaner environment for all to enjoy. For more information about the fund, write DNR's Bureau of Community Assistance Management, 201 East Washington Avenue, Room 271, Madison, WI 53707 or telephone (608) 266-7555.

plan and discuss it with the rest of the committee. Once the whole group really understood the options and compared costs for each choice, the sewer committee could make sound recommendations to the town board.

When the town chairman unexpectedly resigned in 1984 and others did not appear interested in overseeing the work, Earl Brackett again stepped forward and volunteered for the job. He already had a "regular job" running a local gravel crushing business in town, but Brackett was determined to proceed with the project that was already four years in the making.

"The key is you don't want to lose control of your project," Brackett emphasized.

He is clearly paying close attention. Walking down a torn up street in Pence with Earl, past backhoes digging sewer trenches and construction workers laying pipe, Brackett stops to chat with the crews. He reminds the workers laying the new curb and sidewalks that the old curbs were rounded at the pavement level to reduce runoff and seepage under the sidewalks. Brackett says the new curbs should look like the old ones. The workmen agree even though they will have to change some of the cement forms.

Everyone who passes by the construction site waves to the town chairman. As bystanders, we really get the feeling that he practices what he preaches.

Town officials have to take the project personally, Brackett says. It's too easy to defer important decisions to the attorneys and civil engineers you hire as contractors. Since town officials are ultimately responsible for the final project, you need to remember that lawyers and engineers are only advisors: The community that lives with the project should make the decisions.

"People will always see roadblocks, and we had lots of difficult times when residents started asking 'What if this occurs?' or 'What if that happens?' Ultimately, you just have to go forward with the resolve to make it work," Brackett concluded.

When you ask, he has a tough time calculating how much time he's spent on the project. But Brackett admits he shut down his gravel business many times to take care of the pressing sewer construction project — work for which he neither charged nor received one dime from the town. He also admits that the project ate up a good deal of his free time. Right from the beginning, Brackett visited several communities to see for himself

how their wastewater treatment systems operated. He talked with many officials who had already been through the construction process.

Moreover, Brackett contributed quite a bit of manual labor to make sure the project was constructed as planned. Brackett and another town official marked the property lines during the planning stage. When the soil needed to be tested to evaluate which sites might be suitable for a treatment plant, Brackett and a local resident experienced in soil sampling completed the work. Tests showed that the soil in Pence was inappropriate for waste treatment on land. For more than two months, Brackett took daily readings at the wastewater flow monitoring station to document just how much sewage and water was being discharged to the wetland. His records

showed that actual flow was much greater than the engineers had estimated in the facility plans. That discovery prompted repairs to further cut groundwater flow into the sewerage system and, consequently, cut the amount of wastewater that would have to be treated.

Although Brackett will talk about his contributions, he equally credits Town Supervisor Bob Olson and Town Clerk Virginia Giacomino for their hard work.

This fall, rehabilitation work on the Pence sewerage system was completed and a new interceptor sewer started carrying the town's wastes to a sewage treatment lagoon in neighboring Montreal, Wis.

Brackett estimates 80 percent of town residents are satisfied and believe the massive project was worth

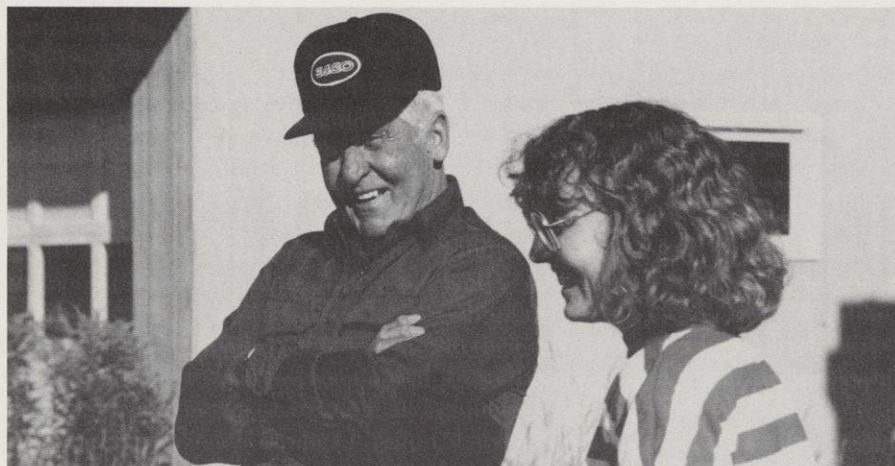
the work. Some people still hold that the project was too expensive. Final project costs were \$758,000 of which the Wisconsin Fund covered \$413,600 and a Farmers Home Administration grant covered \$138,300.

What role will a modern sewerage system play in Pence's future? Characteristically, Brackett is upbeat. He notes that young people are starting to buy up lots and houses as they become available. They see Pence as a nice place to live. He senses the town will continue to be a quiet, residential community with hardworking people who pay their bills.

That's not idle chat. When the revised sewer bills containing the first adjustments for the new system were issued, Brackett thought he and his wife, Gloria, should be the first ones to pay their bill as a sign of good faith. But when Gloria arrived at the community hall to square up their bill, someone else had gotten there first!

The Pence project is more than a local success story, it's a milestone for the whole state. You see, the Town of Pence was the last Wisconsin community solely served by a primary wastewater treatment system. Now, every municipal sewage system in Wisconsin is designed to meet secondary treatment or better. We've collectively come a long way towards meeting the ambitious goals of the Clean Water Act.


Why did this project succeed? Well, you can't underestimate the value of good engineering, a workable plan, cooperation among state and local communities, financial assistance and community support. You should also recognize and celebrate the enormous environmental contributions that local officials like Earl Brackett make every year out of concern for their community's future. Dedication and commitment by a few people in each community turn the best laid plans into reality.



PHOTOS BY DAVID RILEY

above: The engaging Brackett recounts Pence's project with co-author Julia Riley.

below: Brackett guided Pence's massive sewer project as an unpaid community volunteer. It's too easy to defer important community decisions to attorneys and engineers, he says. "The community that lives with a project should make the decisions."




THE WISCONSIN FUND

TOWN OF PENCE

WATER POLLUTION CONTROL PROJECT

\$ 758,000 Sanitary Sewer Improvements
 \$ 23,300 Local Share
 \$ 13,600 State Grant \$ 138,300 FmHA Grant \$ 182,800 FmHA Loan



Julia Riley is a community services specialist with DNR's Bureau of Community Assistance Management. Kim Walz is an environmental engineer with DNR's Bureau of Wastewater Management.



DECEMBER 1989

INSIDE

Winter driving tips

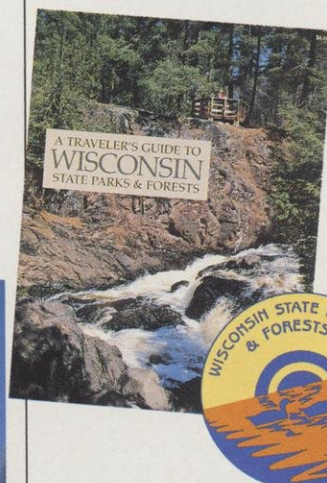
Doggone races!

An unbearable event

Celebrate a Christmas past

VOLUME 1 NO. 5

Gift package eases parking!



Stuck on what to give Mom and Dad, your kids, Uncle Skeeze, Cousin Pearl, your boss, your mechanic, the mail carrier, baby sitter, butcher, baker or candlestick maker for the holidays? Try a **1990 Wisconsin State Parks Sticker!**

For a mere \$14 (resident vehicle) or \$28 (nonresident vehicle) you can present your giftee with trillium-trimmed hiking paths and clear, clean lakes; panfish for the catching and birds for the watching; challenging ski trails; pastel sunsets; hearty campfire songs beneath the pines; soft, sandy beaches, rugged coasts ... in a word, Wisconsin at its finest.

Now, you wouldn't send a loved one (except Uncle

Continued next page

Brrrr-town!

Like autumn in New York and April in Paris, there's no time as special as January in Milwaukee. Rather than hibernate for the winter, the residents of Wisconsin's largest city enthusiastically embrace the ice and snow, reveling in a non-stop round of festivals, sporting events and arts performances.

Want to join in the fun? Put on your mukluks and head for the southwest shore of Lake Michigan. (If you get lost, consult a beer connoisseur for directions.) Keep walking until you reach ice — lots of it. That's the lake. Now turn around. The lights, the excitement, the people ... that's Milwaukee!

Your Milwaukee winter adventure begins to take shape on January 10-13 at the Milwaukee County Zoo, 10001 W. Blue Mound Rd., where more than 45 three-person teams will chip, shave, saw and scrape 10-ton cubes of snow into glistening replicas of Mt. Rushmore, Miss Piggy, Trump Tower and whatever else captures their fancy at the **U.S. National Snow Sculpting Competition**. (It's a great opportunity to discuss your theories on three-dimensional impressionism with the polar bears.)

Winners progress to the **International Snow Sculpting Competition**, held on January 23-27 at Milwaukee's Performing Arts Center, 929 N. Water St. Fifteen nations represented by 20 teams vie for glory in this artistic "cold war." The real winners are the spectators. Teams in both competitions sculpt from 9 a.m. to 4:30 p.m. each day.

Continued on page 4



The chance to create art from snow draws people from all over the world to Milwaukee.

Barb Kelly

Wheeling in winter

Wisconsinites love winter sports, but do we really need hockey pucks on our highways?

The "hockey pucks" are actually electronic sensors, part of the Department of Transportation's 25 new remote weather systems located on high-volume highways. The pucks send back site-specific, hour-by-hour information indicating when pavements freeze, when snow starts accumulating, and whether chemicals are needed to melt the snow.

The pucks measure pavement temperature instead of air temperature, which allows maintenance crews to make better decisions about the treatment of highway surfaces. For best results, salt is applied when the pavement temper-



Clearing the way: Plowing crews keep Wisconsin highways safe for winter travel with the help of electronic road sensors.

Wisconsin Department of Transportation

ature is between 20-32° F. Salt alone is not effective below 20° F; highways at that temperature get a dusting of salt and chemicals. Below zero, only sand is used.

"We're using less salt with good results because of more accurate timing," explains Ted Stephenson, DOT's highway maintenance chief. "Our winter maintenance activities are more environmentally

area at (608) 246-7580 and Milwaukee area at (414) 785-7140. Travelers in other parts of the state and from bordering states may call 1-800-ROAD WIS (762-3947).

2. *Travel with a full tank of gas.* If you're stranded in your vehicle, you'll have fuel to run the engine and heater. Keep a window open an inch or two to avoid carbon monoxide poisoning.







sound, cost-efficient and reliable."


About 1,600 snowplows will be out on Wisconsin's roads to clear the way for you this season. Avoid driving in stormy winter weather if you can, but if you can't, follow these driving tips:


1. *Plan ahead!* Road condition information is available for the Madison

3. *Pack a winter travel kit and keep it in your car.* The kit should include:

-  two or more blankets (that old sleeping bag with the broken zipper could be put to good use here)
-  extra clothing: parka, boots, socks, caps, mittens
-  sand or strips of carpeting for tire traction

 flashlight, batteries, jumper cables, snow shovel, ice scraper

 candles, matches


 high-calorie, nonperishable food like candy, nuts, dried fruit

4. *Don't hit the skids!* Some sections of roadway with bridges and underpasses can be icy when other nearby surfaces are wet. Remember, ice is more slippery at 30° F than at 10 or 15° F. The colder and dryer the ice, the better traction you'll have.

5. *Be a careful driver.* To slow down, pump your brakes so you won't lock the wheels and skid. If your wheels are spinning, let up on the accelerator and straighten your wheels. Accelerate slowly with wheels straight, then turn in the direction you want to go.

6. *If you use snow tires, put them on the drive wheels.* The tires belong on the front if you have a front-wheel drive vehicle, in back if it's rear-wheel drive.

7. *Buckle up!* Wear seat belts winter, summer, spring and fall.

 Department of Transportation, (608) 266-3581.


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Skeezix, maybe) out to climb Mt. Everest without a Sherpa, would you? Of course not. So, when you give a 1990 Wisconsin State Parks Sticker as a gift, be sure to tuck *A Traveler's Guide to Wisconsin State Parks and Forests* into the package. It's a 128-page book with color photographs and articles about each state park, forest, trail and recreation area, plus tips on vacation planning, photography, winter outings, fishing hot spots and more.

When purchased with a parks sticker, this outstanding recreational compendium costs only \$7 (if you buy it in person) or \$8.55 (if you order by mail). Like the chickadees say: Cheep!

 Stickers and guidebooks can be purchased at any state park or by writing DNR Parks and Recreation/TRV, P.O. Box 7921, Madison, WI 53707.



Going to the dogs: A sled team heads for the horizon in a northern Wisconsin dogsled race. *Joseph Butsick*

The paws that refreshes

Spend a brisk winter day baying at the hounds during a northern Wisconsin dog sledding competition! You'll find hearty refreshments and lots of canine/human camaraderie at the finish lines. Mush!



Huskies make a mad dash to the finish line. *Joseph Butsick*



December 30-31: **Empire 130 Dog Sled Race**, Solon Springs, Douglas County; 6- and 10-dog races start at 9 a.m. and the return route follows the Empire Trail. (715) 378-4419.



January 6-7: **Crocker Hills Sled Dog Race**, Polar, Langlade County; 40-mile mid-distance race and sprints begin at 9 a.m. (715) 627-7736.



January 13-14: **Sled Dog Races**, Lakewood, Oconto County; 3-, 6- and 10-dog races begin at 11 a.m. (715) 267-6091.



January 20-21: **Mosquito Hill Sled Dog Race**, Mosquito Hill Nature Center, New London, Outagamie County; 3-, 6- and 10-dog classes start at 11 a.m. (414) 778-6433.



For a statewide winter events listing, call 1-800-432-TRIP or write Wisconsin Tourism Development, P.O. Box 7606, Madison, WI 53707.

Seasonal stress?

Winter visitors to Wisconsin can witness the annual outbreak of cabin fever among the populace beginning at 1 p.m. on January 1 at Sheboygan's Northside Beach, when over 350 daring swimmers brave Lake Michigan's icy waters for the **New Year's Polar Bear Swim**. Some wear costumes, others don't wear much of anything at all. Hardy souls armed with picnic baskets gather at 11 a.m. at the Sheboygan Armory for a pre-swim "shore lunch." Anyone who yells "How's the water?" promptly will be tossed onto an ice floe. (414) 457-9495.

Children are not immune to *le malaise du cabine*. It strikes hard in the Chippewa County town of Bloomer, where the kids and the adults reach the end of their ropes during the **30th Annual Speed Rope Jumping Contest** on January 27 at Bloomer Junior



High School. Preliminary "jump-offs" start at noon; the finals begin at 7:30 p.m. Destined to become an Olympic demonstration sport! (715) 568-3751.



R.S.V.P

"I'd like a queen-size bed of pine needles under a canopy of stars, please." Such a request is easy to fill when you get your Wisconsin state park or forest campsite reservations in early. Reservation applications for the 1990 season (May 1 through the last weekend in October) will be accepted by mail or in person at the park where you'd like to stay beginning Tuesday, January 2nd. For an application, call DNR Parks and Recreation at (608) 266-2181 or 266-2621.



Enjoy a Christmas past

It's a December dusk. Earlier, you contemplated the Mississippi River from nearby bluffs, and now you've arrived at the outskirts of a small Wisconsin village, hoping to find some local color and a cup of hot cider.

Stonefield Village, says the sign. There's a gentle glow illuminating the snow-cloaked square, no doubt from the Christmas lights shining on the antique holiday decorations in the storefronts of the dry goods shop, the smithy, and the office of the Stonefield Gazette. Carolers are singing old favorites as they circle 'round the Christmas tree in the square. A horse-drawn sleigh deposits laughing children in front of the confectionery; the kids crowd inside for rock candy and gingerbread cookies, and suddenly, it's not 1989, but 1899, and you feel that you've taken a giant step back into the past.

And so you have! On Saturday and Sunday, December 16 & 17, the merchants and residents of **Stonefield Village in Cassville** welcome you to celebrate the holidays the old-fashioned way. The re-created turn-of-the-century village, decorated for the season, will be open from 4 to 9 p.m. for sleigh rides. You can sample the goodies on sale in the confectionery, or browse in the bookstore for last-minute gifts.

You'll want to return to Stonefield on Saturday, December 30, for a festive Christmas party complete with live music and entertainment in the saloon!

Admission to the village is free; sleigh rides, 50 cents.

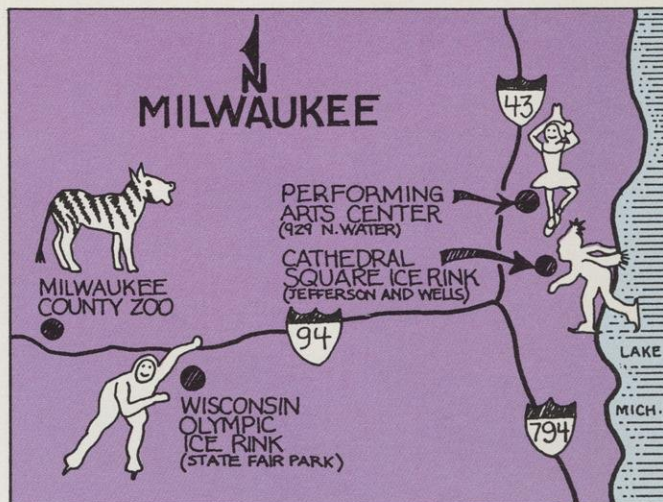


Stonefield Village, Highway VV, Cassville. (608) 725-5210.



Santa of yore: Perhaps you'll meet him at Stonefield Village!

State Historical Society



Continued from page 1

The snow art is part of **Icebreaker, America's Winter Festival**, a six-weekend celebration scheduled for January 6 through February 11. Each weekend has a theme: Opening Ceremonies, Ice Sporting Events, Comedy, Milwaukee on Ice, the Arts and, as they say north of New Orleans, Mardi Thaw.

During Icebreaker, you can don your long johns and trot through downtown Milwaukee with similarly-dressed crazies in the **Red Flannel Run** or cheer wildly while the top speedskaters in the U.S. zoom around the Olympic Ice Rink at the **National Outdoor Pack-Style Speedskating Competition**. Let nationally-known jokesters tickle your fancy on the Icebreaker Comedy Stage one weekend; on the next, take in dramatic performances by notable Milwaukee theatrical groups all around town.

The centerpiece of the festival will be the new Olympic-sized ice skating rink in Cathedral Square, at the corner of Jefferson and Wells. Designed to maintain ice in temperatures up to 60 degrees and lit for nighttime skating, the rink is sure to be a hit with amateur gliders and



Spectators thrill to the excitement of speedskating. M. Voss

professional blades alike. Leave those rusty skates at home — you can rent a pair at the rink! After a spin, stop at the warming tent to thaw your toes while you sip hot cocoa and drink in the fun of winter in Milwaukee.



Greater Milwaukee Convention and Visitors Bureau, 1-800-231-0903; U.S. National Snow Sculpting Competition, (414) 771-3040; International Snow Sculpting Competition, (414) 272-5235; Icebreaker Festival, (414) 273-2680; Olympic Ice Rink, (414) 475-7465. For a copy of Wisconsin's Winter Adventures, call the Division of Tourism at 1-800-432-TRIP.

Readers Write

ROADSIDE REQUESTS

The roadside prairie story in your August issue reminded me of drives home from college, early this spring. I-90 from Eau Claire to Madison seemed void of the usual trees and shrubs of rural Wisconsin.

How would one go about planting trees in quantities to fill roadsides? Who would give the 'okays' for such a project?

Related addresses and phone numbers to projects like the prairie flower program would be helpful, too.
Jason Howard
Milton, Wis.

"Roadside revival" in the August issue appeared informative and historical. The sightings list should be clipped and kept with the Wisconsin road map. A few other pieces of information might have accompanied this piece: a contact within the DOT public affairs office, a listing of key wildflower/grass types used in these projects and regional or county offices where one might volunteer to assist in this work. The only thing more fun than reading *Wisconsin Natural Resources* magazine is contacting the source. Keep up the good work.

Taylor Ambrose (from Wisconsin)
U.S. Marine Corps
Laurel Bay, S. C.

Generally speaking, the State Department of Transportation has authority to plant and maintain vegetation along the 11,800 miles of the Interstate system, U.S.- and state-numbered highways in Wisconsin. Indi-

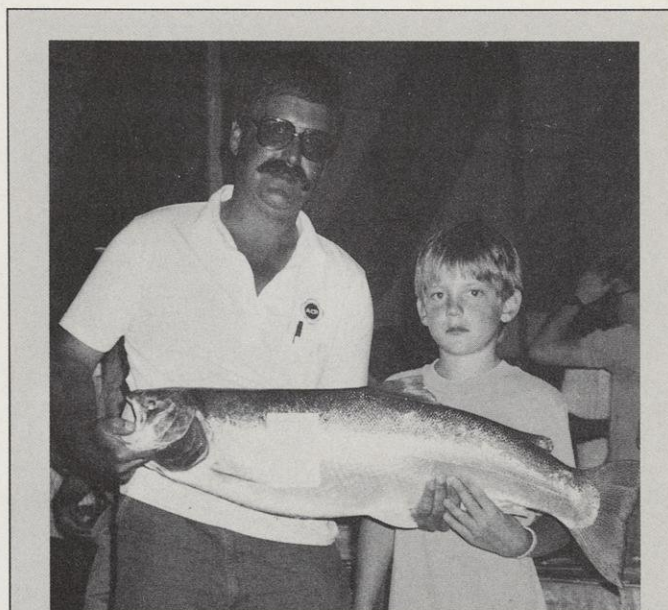
viduals or organizations interested in volunteering to beautify a particular stretch of public road can contact Mr. T.E. Stephenson, State Maintenance Engineer for Highways, P.O. Box 7916, Madison, WI 53707, call the DOT district offices listed on the state highway map or contact one of the garden clubs already working with this program. All proposals for roadside improvements need to be reviewed and formally permitted before proceeding.

Individuals are discouraged from stopping along highways and plunking a few trees along the roadside for safety reasons. Highway designers want to ensure that the road edges are free of hazards (leaves, branches, falling fruits and the like can obstruct traffic on the freeway), provide easy access for snow plows and tow trucks and discourage wildlife from wandering too close to cars.

A WAY WITH GARBAGE

To continue your June discussion of composting (Heaps & Windrows), I suggest that only biodegradable materials be picked up by weekly garbage collection. Individuals would be responsible for depositing all other materials at pick-up stations for recycling. These recycling stations could be set up at stores or other public places and supervised by public employees or volunteers.

The biodegradable wastes would be shredded, blown into a hopper and



PUMPED UP FOR STEELHEAD

The summer piece on steelhead was right on the money. These rainbow trout provide great fishing action. Look at this beautiful 36-inch, 20.2-pound steelhead caught in the Sheboygan Coho Derby last August. The fish was caught by nine-year-old Jonathan Gabrielse of Sheboygan shown here with his dad, Greg.

Mike Coshun
DNR Lake Michigan Biologist, Milwaukee

emptied into a composting silo or directly dumped into clay soils which would be improved by compost. This would eliminate the need for landfills and soils would be improved naturally.

People have to be educated to take responsibility for their own wastes — cigarette butts, tin cans or whatever. We are knowledgeable about the water cycle and we need to learn about the waste cycle. These ideas mean changes. They may take extra labor, but in the long run we will make better use of waste materials and make fewer polluting landfills.

Melvin W. Opgenorth
Sheboygan Falls, Wis.

BACKYARD BIOLOGIST

My great grandson and I enjoy *Wisconsin Natural Resources* magazine very much. We really liked the mushroom piece in the August issue. After a rainfall, we found 16 different ones just in my backyard! I've lived here 59 years and have never noticed so many kinds.

When he's here, he has toads, walking sticks, worms of all kinds, moths, butterflies, etc. in jars all over the place. He also knows all the different fish by name and loves fishing. I just had to brag a little.

Evelyn Gorres
Amery, Wis.

Readers Write

NOTES FROM THE WATERS

#1 I am a calm, relaxed fisherman of inland lakes, primarily for panfish.

#2 I fish the Grand River area — Grand Lake, Dates Pond, Buffalo Lake, Bark Lake, Shawano Lake and Pine Lake near Crandon.

#3 My wife joins me nine out of 10 fishing trips and usually outfishes me. That's why I leave her home one out of 10 trips.

#4 I'm unhappy with speedboaters because I've had many experiences where they come too close to my boat.

#5 I find Wisconsin fishing good and have practically eliminated trips to Canada.

#6 I feel the DNR has overplanted muskies at the expense of panfish. Most anglers fish for panfish and the younger set enjoys panfishing much more than muskie fishing.

May the weeds go down in the fall and your fishing remain good all year.

George Akers
Hales Corners, Wis.

MYSTERY of the SPHINX MOTHS

The August issue of WNR could not have arrived at a better time. My daughter was visiting and had described a hummingbird or moth she had seen in her garden. I told her about seeing a similar one in my garden years ago. While we were still discussing it, I picked up the mail. On the inside cover of your magazine was the very thing which we had been talking about! It was a thrill to see and read about the sphinx moth.

I learned that certain worms that I had seen on my tomato plants were ac-

tually sphinx moth larvae. It was interesting after all these years to find out what the worms and the moths were.

Madge Cronk
River Falls, Wis.

WNR IN CZECHOSLOVAKIA

Many thanks for permission to send *Wisconsin Natural Resources* magazine to Czechoslovakia. This has made many people there very happy.

Thanks also on behalf of hundreds of Czechoslovakian teenagers who will benefit from your help in selecting [quality environmental] books.

Mrs. F.A. Bogataj
St. Germain, Wis.

Editor's note: WNR can only accommodate foreign subscriptions to Canada. Several special issues were forwarded to Czechoslovakian students for use in school projects.

STUMPED NO MORE

I enjoyed reading the August issue of WNR and was particularly interested in the photo on page 30 which shows a small tree growing out of a rotting stump. As other readers have pointed out, the young tree is a hemlock, and the stump is from a white pine or hemlock.

In the forests of the Apostle Islands, I have aged similar young hemlocks that are anywhere from 20 to over 80 years old. Regeneration on rotting stumps or logs is a common mode of reproduction for hemlock.

Albert M. Swain
Ecology/Paleoecology
Verona, Wis.

Continued from page 2

Without a daily feeding, small birds like chickadees, juncos and tree sparrows can survive the 14- to 15-hour-long winter nights in the northern states if the temperature drops no lower than five degrees above zero. At 20 degrees below zero, the birds may live only 10 hours; at 30 degrees below zero, only seven hours, or about half the night.

How, then, does a chickadee survive winter to trill the joys of spring? The key is a carefully-timed early-evening repast. If the bird has fed heartily late in the day, it will have enough fuel to keep itself warm throughout the coldest of nights. All the seeds, suet and nuts the bird consumed in the hours prior to darkness provide energy to keep the chickadee's tiny heart — weighing less than an ounce — pumping blood through the bird's body. As food fuel is burned, the bird is warmed from beak to tail. A sheltered spot where the bird can sleep out of the wind helps conserve body heat.

Such a small, light creature cannot store large amounts of body fat in reserve to draw upon when the weather turns cold. The chickadee must "stoke up" every day to prepare for the chill of night. Fill your feeder or mix suet with bird seed, sunflower seeds, cracked corn or nuts and keep feeders filled during winter. Each evening you'll be rewarded with a regular visit from some inquisitive, colorful dinner companions. ■

Maureen Mecozzi is associate editor of Wisconsin Natural Resources magazine.

NEXT ISSUE: Snow camping Ice caves of cornucopia Tales from the 1989 deer hunt



CORRECTION

The October Hunters' Almanac incorrectly stated conditions for claiming landowner preference when applying for a hunter's choice permit. You can qualify for hunter's choice preference if:

- You are the owner of record of at least 50 acres in one parcel or you are the buyer under a land contract of at least 50 acres in one parcel. The 50-acre parcel must be located in whole or in part in the deer management unit for which you are seeking preference. Mem-

bers of the landowner's immediate family cannot claim this preference unless they are listed as owners on the property deed. Only one person can apply for landowner's preference for one parcel of land during one season. People owning larger parcels may not divide the property to qualify more applicants for landowner preference.

- You are a permanent resident of the county or an adjacent county in which the parcel is located.



MARK WALTER

Rockbridge Elementary School students decided to investigate Richland County deer hunting traditions as the students prepared for their first hunt.

Tally doe

Budding hunters sharpen their math and science skills while learning about local hunting traditions.

James Korb

Teaching at a small, rural elementary school provides many interesting opportunities to build outdoor experiences into children's education. Four acres of wooded land behind our building in northeastern Richland County have inspired my classes to study various environmental concepts, spiritedly plant trees, build a nature trail, cook our lunches over an open fire, and even dig out snow caves when the weather cooperated. New teaching materials help, too. Through the past few school years, programs like Project WILD and other resources are stimulating teach-



MARK WALTER

ers to incorporate natural resource issues into more standard subjects such as mathematics, science and social studies.

When you've been teaching the same grade for a few years, you tend to miss a chance to see some of the stages children in other grades go through. Last September while teaching a class of sixth graders instead of my usual fifth graders, a rite of passage was quickly approaching for many of my students. A good portion of my class was participating in a hunter's education course. The 12-year-olds who passed the course

SURVEY RESULTS -

ROCKBRIDGE ELEMENTARY SCHOOL 253 TOTAL DEER INCLUDED IN THE SURVEY.

1988 Gun - Deer Hunt Survey ☒ Check as you go.

ROCKBRIDGE ENVIRONMENTAL STUDIES GROUP

Deer taken : Buck 181 174 29 6 3 6 14 6 6 3
 Doe 72

Date taken : November 19 20 21 22 23 24 25 26 27

Time of day taken : 200 A.M. 53 P.M.

Approximate weight : lbs. Approximate age : years

Spike to 6 points : 95 More than 6 points : 76

Are you a Richland Co. resident? Yes 148 No 103

On the day taken, were you : Not 80, Moderately 112, Highly 58 selective of the deer's size before shooting?

Were you hunting in a Group 162 or Alone 91?

Do you feel that you hunted in a hunter congested area? Yes 61 No 188

Deer was taken from : Ridge 135 or Valley 92

Deer was taken from : Open 63 or Woods 143

Satisfaction with the length of the 1988 hunting season:
 Not satisfied 11, Moderately satisfied 70, Very satisfied 171

Satisfaction with the regulation of the 1988 hunting season :
 Not satisfied 18, Moderately satisfied 90, Very satisfied 145

Comments : SURVEY STATIONS :
 CHET'S FEED AND SEED - RICHLAND CENTER
 POLICE STATION - RICHLAND CENTER
 BOSSTOWN STORE - BOSSTOWN
 NATURAL BRIDGE STORE - ROCKBRIDGE
 EAGLE'S NEST - BLUE RIVER, MUSCOTA

Thank you for your cooperation,
 Rockbridge Elementary School

* NOTE - IF SOME TOTALS DO NOT BALANCE, IT IS DUE TO SOME QUESTIONS NOT BEING RESPONDED TO ON SOME INDIVIDUAL SURVEYS.

Using survey techniques similar to those that wildlife managers and researcher might use to gauge public opinion, the sixth graders got insights into local hunters' habits while they learned about statistics and polling techniques.

would be eligible to hunt later in the fall, so they eagerly anticipated the gun deer season.

They were anxious to join family and friends in this annual hunting tradition. Most of their discussions centered around the safety course topics, pros and cons of "old reliable" hunting techniques and the general outlook for the November hunt.

To help channel all of this newfound enthusiasm and focus my students' interest productively, we developed the Rockbridge Elementary School Deer Hunt Survey. With some

help from Janet Cook (another Project WILD-trained teacher) and a core group of curious young deer hunters, we started to investigate a variety of deer hunting concepts.

First, we discussed basic facts about Wisconsin's deer-hunting season, such as the laws and regulations by which all hunters must abide. We then talked about ethics and values of hunters, non-hunters and anti-hunters who criticize the hunting season. Our conversations dealt with comments from friends and family members who would influence the type of

hunt these new, young hunters experienced.

After debate and lively discussion, we decided to survey hunters around our community. We started to draft a set of questions that reflected the students' growing curiosity. They wanted to find out the basic facts about each deer taken by hunters: the deer's sex, rack size, approximate age and weight. They also wanted to question each hunter's strategy in choosing hunting habitat. Finally, we wanted to gauge whether hunters were satisfied with their hunting experience.

As we developed the questionnaire, the students had to keep in mind that most hunters would only give us a short amount of time to complete the survey. If we were going to get enough respondents the format had to ask short questions whose answers could be quickly checked off.

When the questions were completed, and the survey formed, we planned its distribution. Five Richland County deer registration stations were selected and the people who staff them were very willing to help with the project. Since these stations are far apart and students couldn't staff the stations during the school day, the students couldn't personally distribute the surveys to hunters. So the students had to contact the places where deer are typically registered — service stations, farm markets, taverns, meat processors and sports shops as well as DNR offices — to explain the research and ask for community help to gather information. In a cooperative spirit, each station agreed to hand out the surveys when hunters stopped in to register their deer. By the close of the nine-day hunt, 253 surveys were completed and returned.

Now my students faced the task of tabulating and analyzing collected data. Project WILD lessons infuse so easily into most academic areas that we worked on the data as a part of our math and computer studies. The students calculated totals and averages the old-fashioned way with pen-

cil and paper. They also entered the survey into our computer, to get percentages and bar graphs with the push of a button. Either way, the data analysis enhanced a variety of math skills.

Professional number crunchers would no doubt say we had not collected a "statistically significant" sample but, given our county-wide sampling, the students felt that our data would give them some insights into local hunting practices and opinions. Students found out that most of the respondents hunted in a group and took more deer from woods and ridges than from open areas and valleys. The average hunter surveyed in Richland County does not feel that he or she is hunting in a congested area. Also, most hunters surveyed were satisfied with length and regulation of the 1988 hunting season. Although this deer hunters' survey did not represent hunters well enough to be used as scientific data for wildlife biologists, it did help students feed a budding interest about hunting and instill a broader view of hunting ethics and attitudes. Moreover, the combined enthusiasm of students, Janet Cook, the registration station personnel and the hunters who cooperated with the survey show how talents and skills can be combined to investigate a natural resource issue.

I believe the students who worked through this survey will look at their sport with wider and wiser eyes. I also think students better appreciate that managing wildlife includes understanding the people who observe and hunt animals. ■

James Korb teaches fifth grade students at Rockbridge Elementary School in Richland County.



above: Community businesses chipped in. They encouraged deer hunters to take the time to fill out the survey and share in this school project.

below: Project WILD offers many ways to include concepts about managing wildlife in grade school, middle school and high school curriculums. Like these Richland County students, your students and children can enjoy learning about natural resources with these innovative programs.



