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WISCONSIN NATURAL RESOURCES

December 2003 $3.50

Boot up for
snowmobile
safety

Building better
building blocks

Winter
woodworking
for wildlife

Share your
hunting camp
traditions and
superstitions

Standing out from the crowd

White birch grabs your attention in all seasons.

Anita Carpenter

In a winter lineup of leafless Wisconsin trees, white birch, *Betula papyrifera*, would be the most readily recognized and identified because of its smooth, white bark.

Although commonly found in northern Wisconsin, white birch is primarily a Canadian species whose range extends north to the tree line and east to west from coast to coast. Within its range, white birch thrives in a variety of habitats from well-drained sandy soils to moist areas along streams and bogs. Often it is found in the company of pines, oaks, and aspens, but pure stands can be found.

White birch is a pioneer species, one of the first to colonize a new or disturbed area. Colonizers are fast-growing, short-lived, sun-loving trees that lose their zest for survival and perish as other trees invade, eventually dominate the area, and close in the canopy. A few lone but hardy white birches may survive in a maturing forest and grow to old age. A 140-year-old white birch would be an ancient relic compared to a 140-year-old bur oak that would still be in its youthful prime.

Fire is important in regenerating white birch because fire opens up an area and removes competing trees and shrubs. Birch seeds won't germinate in the shade. Once they find the sun, they will sprout and grow in the nutrient-rich ashes fires leave behind. Thus fire can ultimately contribute to pure stands of the stately white trees. White birch also will sprout from burned or cutover stumps, growing into the elegant multiple-trunked clumps we so admire.

continued on page 29

WISCONSIN NATURAL RESOURCES

December 2003
Volume 27, Number 6

JEREMY SOLIN

DEAN TVEDT

ROBERT QUEEN

FRONT COVER: Snowmobiling is fun when you learn to ride safely. DNR now offers safety certification as a CD-ROM course.
RJ & LINDA MILLER, La Crosse, Wis.

BACK COVER: Pickerel Lake Fen State Natural Area in Walworth County, courtesy of the Wisconsin chapter of The Nature Conservancy.
GERALD H. EMMERICH, Jr., East Troy, Wis.

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Booting up for

CD course helps new snowmobilers stay on the trail to safer sledding.

David L. Sperling

I watched as the approaching snowmobiler on a bright red and yellow sled stopped on the snowy trail and stuck his left arm out in front of him. He was wearing a black snowmobile suit with a racing flag checkerboard design on the sleeve. He made a motion as if he were throwing a snowball over his left shoulder then repeated it several times. He wasn't commenting on my driving skills, but was signaling me that he was traveling in a group and more sleds were following behind. Nothing unusual about that, except that it was August, about 85 degrees, and the only cold chill was in the glass of iced tea beading up beside my computer. I was taking a CD-ROM course on snowmobile safety and learning hand signals for the trail from the comfort of my home.

"As we often say, recreational safety is no accident," said DNR Snowmobile Safety Coordinator Karl Brooks, "and the easier we make it to teach newcomers or remind seasoned sledders about safe travel tips, the better off we are on the trails come winter."

Brooks developed the CD-ROM training course with advice from safety instructors, students and the help of DNR computer trainers with video skills. The course makes it easier for people who are comfortable using computers to get safety training at times and places at their convenience rather than taking classroom instruction.

"Our volunteer snowmobile safety instructors continue to do a good job and have taught an impressive 1,200 classes since 1971," Brooks said. "They reach an average of about 8,000 students a year, but the challenge is that the number of people who want or need to be trained increases every year, and we simply can't reach them all in classes. The demand for certified instruction is great and we need more tools to train people before they decide to go snowmobiling."

ROBERT QUEEN

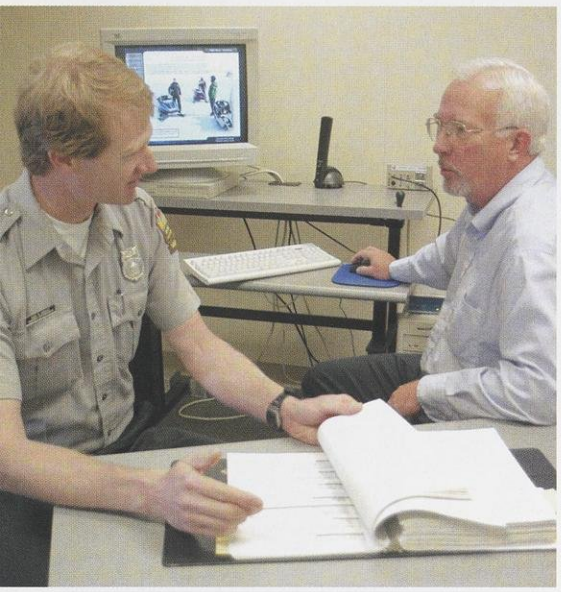
New snowmobilers have a lot to learn including understanding hand signals, *(right)* interpreting trail signs and trail conditions.

Odd weather, faster snowmobiles, and risky behavior on the trails have combined to make the last several winters more dangerous for snowmobiling. Last year 26 snowmobilers in Wisconsin died in snowmobile accidents, up from the 10-year average of 22 deaths annually. Mild winters with little snow have been an issue the last two winters, as more of the state's 209,000 registered snowmobiles hit the trails on fewer days. Accidents are more likely to happen at night, but there is no question that excessive speed combined with alcohol consumption and poor ice conditions contributed to accidents and fatalities. Snowmobile instruction, whether on CD-ROM or in the classroom, emphasizes the need to control speed, abstain from all alcohol use and show extra caution when riding at night.

Dr. Thomas Gabert, an emergency room physician at the Marshfield Clinic, sees too many of those snowmobile tragedies unfold.

"We don't have data to suggest that snowmobile injuries change as speed increases, but there is plenty of data in other activities (boats and cars) that speed makes things worse. The reaction time from threat to action (as in 'I see the tree, I have released the throttle') is 1–1.5 seconds. At 60 miles per hour, that is 88 feet per second. Trails are 12 feet wide, so you can be 88 feet or more into

safety



ROBERT QUEEN

Snowmobile Safety Coordinator Karl Brooks *(left)* and Ron Anderson, DNR multi-media training specialist, produced a CD-ROM course so students can get certified in safety basics before getting on-trail experience.

the woods before you can get your hand off the throttle. We also know that the force of injury doubles with each 10 mph increase in speed."

Snowmobile safety instruction aims to help experienced riders and especially new riders learn to reduce those risks.

State safety laws require that anyone born on or after January 1, 1985 take snowmobile training and pass a safety course before they can legally ride a snow machine. "The group that must be certified is now 18 years old or younger," Brooks said. "Most of these kids are familiar and comfortable with computers and interactive CDs. Many of them would just as soon take safety courses on their own time and at their own pace as attend a series of afternoon, evening or weekend classes, and they are not alone. Adults also want to take the training, a lot of them are computer literate and they are willing to use the computer as a training tool."

CD training offers other advantages as well. Children as young as 12 can be certified to ride snowmobiles in Wisconsin, and it is challenging to design courses that are geared and paced to a mixed audience of 12-year-old and adult students. Though adults want the training, some are reluctant to attend classes where the students are primarily

MARSHFIELD CLINIC

The reaction time from threat to action (as in 'I see the tree, I have released the throttle') is 1–1.5 seconds. At 60 miles per hour, that is 88 feet per second. Trails are 12 feet wide, so you can be 88 feet or more into the woods before you can get your hand off the throttle.

Dr. Thomas Gabert

teenagers and vice versa. Students can also repeat the CD lessons as many times as they would like before taking quizzes at the end of each section. They can also tailor the course to their schedules fitting in a half-hour between homework and dinner or working on it an hour before the Packer game starts. Moreover, children read at their own speed. Several people we spoke with said they liked the fact that students could pick their own pace in learning and reviewing the material instead of being tied to another class schedule and class deadlines.

"We were grateful for the CD," wrote Marion Moeller of Fox Lake. Her son, Kevin, took the CD course last December when a family vacation kept them out of town when local snowmobile clubs offered certification courses. Both she and her husband are avid snowmobilers and are active in the local club. "If we could not have done the CD course, Kevin would not have been able to snowmobile last year," Moeller said.

"In our case, we had missed the date for the safety course sign-up," said Deb Hack, who lives south of Hartford. " We heard about the CD and said, 'Hey, let's try this and see.' The CD course worked out better for us than classes. This was the perfect thing for our son, Nathan. That age group (12) is into technology and wants to do things on the computer. He sat down and did the whole CD by himself in about a week's time. I had gone through the material, so I knew what he'd be getting into. I told him to keep notes for the test and he went through everything. My husband asked him several questions when they were actually on the trail about identifying markers and using signals as they were stopping and going, and Nathan had learned all the answers."

"We had heard rumblings that kids needed to attend the class to discuss issues like alcohol use on snowmobiles, but we didn't find that to be the case," Hack said."Kids 12–16 aren't into that anyway, and we were impressed with how the alcohol and drug use information was presented. This CD course is really a cool thing."

"It was convenient for me," said Alex Dailey (17) of Superior. "I fit it into

my schedule over a three-week period when I could do it. I didn't have to worry about missing a class or making up a lesson if I was busy. You had to study the material, but you could do it on your own time."

It takes time to build a track record

CD-ROM instruction is no panacea, and it has its critics. Many of those who teach recreational safety classes would prefer to see students in the classroom where they can hear each others' questions, take part in discussions, get answers to their questions and learn from each other. Some of the instructors also provide on-sled practice as part of their safety classes, and those are popular sessions. The Association of Snowmobile Clubs is on record in Wisconsin supporting instructor-led classes rather than online certification for children under 16.

"We feel that children between the ages of 12–15 especially need that interaction in the classroom," said Donna White, president of the state Association of Snowmobile Clubs. "The CD is a good tool and a good supplement to classes, but our volunteer safety instructors, many of whom are teachers, believe that younger learners need that classroom interaction and that personal touch if they have any questions. That classroom experience is especially important for children who do not come from a snowmobiling family. Their families might not have the background to understand and answer their questions if the family doesn't have that snowmobiling experience."

It's a touchy issue, said DNR's Brooks. The volunteer snowmobile safety instructors would have to teach classes of 50–80 students to reach the number of new snowmobilers who want and need to be certified. "CD instruction helps to take the pressure off having such large classes, and it is just more convenient for some students both young and older."

I asked Brooks if new snowmobilers taking their safety courses on CD miss hands-on trail instruction from classes. It turns out that most of the classes do not include on-trail instruction.

"Like all the other recreational safety classes, we don't require hands-on road tests or physical skill tests as a component of whether students pass or fail the class to qualify for a safety certificate," Brooks said. "Moreover, given that many snowmobile safety courses are taught before there is snow on the ground, practical lessons are more difficult.

"We'd never advise that the student who has a certificate is suddenly an experienced rider with good skills and judgment," Brooks said, "any more than a student driver who has a learner's permit is ready to handle a car on the highway on his own. The certificate is just a starting point for learning physical skills, trail judgment and getting behind-the-wheel experience with guidance."

A safety course, whether on CD or in the classroom, reviews skills and judgments that ought to be reinforced by family or group instructional rides. *(below)* **Crossing bridges and roads,** *(right)* **interpreting trail maps,** *(bottom)* **riding safely with a group.**

ROBERT QUEEN

ROBERT QUEEN

Brooks noted that most students get that practical experience from their families and some snowmobile clubs offer group rides to have a good time while getting snowmobilers used to the trails.

Both the Moeller and Hack families described how they are readying their children for the trails now that they have earned safety certificates.

"We are big snowmobilers and the kids have been riding sleds around our yard with us since they were about five years old," Moeller said."Since both Kevin and his younger brother have been riding sleds with us for years on our property, we felt Kevin was ready to go on the trails on his own snowmobile. Kevin only got out on the lake twice with my husband because we had such little snow last year. Still, before the rides, they went through all the safety issues of what he had to do and what he had to watch for — other people, staying set distances from shore and fishing shacks. He only went out for two hours and only went out twice. We will handle road trips on the trails the same way. We will take simple one-hour trips maybe 25 miles round-trip and we'll make stops in between," Moeller said.

"We would never let Nathan go by himself," Hack said. "We want to be there to make sure that he has learned what he was supposed to learn."

On track online

Students can send for the CD course by contacting the snowmobile safety program at (608) 264-8544 or e-mailing the snowmobile safety program assistant: lesafety@dnr.state.wi.us. The CD including mailing is offered free of charge and students who pass the course pay $10 to cover the costs of certification when they mail back their form.

The course weaves you through the basics of snowmobile safety, teaches a bit about unique snowmobile laws and rules of the road, and provides segments on knowing your snow machine, riding tips, anticipating emergencies and handling some of the deadly problems modern-day sledders face.

Lessons start with practical advice for suiting up to stay warm and safe on brisk winter rides. You will learn about helmets, goggles, masks, snowmobile suits, gloves and footwear. It's interesting to learn how something as innocuous as a loose scarf can become a serious hazard to snowmobilers going down a wooded trail. Students are put through the paces learning hand signals to communicate with others on the trail and interpreting trail signs that describe what is ahead.

Next, students learn about registering their snow machines and all the laws that prescribe what to do when snowmobile trails parallel roads, cross roads, and when it is legal for snowmobilers to use portions of town roads to gain access to a trail. This is followed by a sobering discussion of acting responsibly, avoiding alcohol use, cooperating with law enforcement officers and respecting both property rights and no trespass signs. The CD course explains restrictions on ages for snowmobilers, limits on exhaust from a snowmobile, moderating your speed, respecting property and obeying community ordinances.

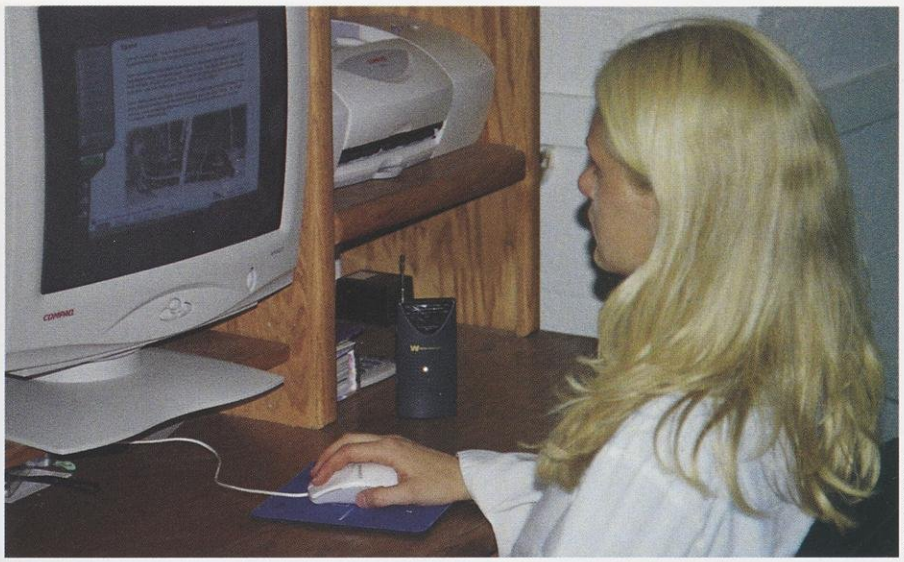
All the lessons offer practical advice for both novice and seasoned riders. The next section helps you learn about the mechanics of a snowmobile — what's under the hood, the dashboard, lights and mirrors, steering mechanisms, how a snowmobile track works, what poses a hazard on the trail, and a bit about the belt and clutch assembly.

Even though newer snowmobiles are a marvel at providing a cushy ride with good shock absorbers, the trails can get rough and traveling at faster speeds on a machine with plenty of horsepower can bounce even seasoned riders out of the saddle. The course describes different safe riding positions, talks about safe group riding and the challenges of night rides. Eskimo culture may have more than 20 terms for "snow," but snowmobilers have to be alert and learn how ice, dirt, light powdery snow and heavy wet snow affect their ability to ride, steer and stop safely.

Another section will help you plan for the "what if" emergencies. A snowmobile trail isn't like a highway lined with businesses and phones, and winter rides don't always take place in balmy weather. You have to prepare for "what if" I get stuck, stranded or hurt. You have to learn how to keep warm and hydrated. Fortunately some modern devices will work fine on the wooded trails, and the course suggests why there ought to be places for a cell phone, GPS unit, first aid kit, flares, compass, shovel and hand warmers on your machine. There is also a fine list of Do's and Don'ts for assisting someone who is injured while riding.

Finally, there are some really gripping stories of errors in judgment that proved to have deadly consequences for some unfortunate snowmobilers. The CD contains six stories with photos that show what can happen to snowmobilers who drink then drive, travel too fast, misjudge distances, traverse ice,

(top) **Nathan Hack found the CD course convenient and it reinforced the need to take your time, stay observant and stay in control.**
(above) **The course includes a simulation showing why riders need to slow down, judge trail conditions and be extra careful at night to avoid a fatal crash like this one.**



KARL BROOKS

The CD-ROM course typically takes 6–8 hours to complete. Students who need snowmobile safety certification to ride can fit in instruction around their school, work and weekend schedules.

Safe sledding for young riders

For a safe snowmobile ride:

- Wear an approved helmet and protective clothing
- Gain driving skills and the judgment that comes with experience
- Start by sledding with no passengers
- Never tow sleds or skiers
- Consider waiting to drive a snowmobile until you are 16 years old
  - — drivers need the physical strength, coordination and motor skills to safely operate a snowmobile.
  - — drivers need the cognitive capacity to anticipate, recognize and react to potential hazards.
  - — drivers need good judgment to avoid taking excessive risks while riding or operating a snowmobile.

Strategies that promote safe snowmobile operation by youngsters:

- Adult supervision based on skill level
- Drive safely only on designated trails
- Be aware of other snowmobile traffic
- Maintain the snow machine
- Stay aware of changing weather conditions
- Match the youth's skill and abilities with the snowmobile size

Risk factors that contribute to snowmobile injuries:

- Male gender
- Mismatch of body size and developmental ability to control the weight, speed and power of a snowmobile
- Riding on private property
- Riding in a sled towed by a snowmobile
- Lack of driver experience or judgment
- High speed

Use of alcohol is generally not a factor in snowmobile-related injuries among youth.

Information from Marshfield Clinic's National Children's Center for Rural and Agricultural Health and Safety.

collide with other vehicles or engage in careless behavior.

"Those narrated stories of what can happen were well done," recalled Deb Hack. "I'm from upper Minnesota where a lot of people snowmobile, and we know some people who have had some of these things happen, so I think that's important for kids to hear. It wasn't too graphic or sensational, but it hit home, especially the point about excessive speed on snowmobiles. You've got to be able to control it."

"The whole course was helpful, but I'd have to say the parts where the videos describe accidents in photos and stories were things that Kevin later repeated to his dad," said Marion Moeller. "Those stories clicked in his head, especially the stories that started out kind of innocent yet ended up as fatal accidents. Those stories had an impact on him."

Whether students try CD or classroom training, surely one aim is to keep them from becoming an example in a future class. Snowmobiles are easily capable of moving 80 mph, Brooks said, and they aren't traveling on roads that are sloped and engineered to handle that speed.

"It can be a dangerous sport if put in the hands of an uneducated user," agreed Mark Larsen, who chairs the Governor's Snowmobile Recreation Council.

Safety training can get us part of the way there, Brooks said, but there also needs to be a social change among our snowmobilers. Among other steps, they have to take on the same attitude that the international snowmobiling community has, which is zero tolerance for drinking and operating a snowmobile.

Perhaps early instruction by CD-ROM, classroom and in the field will help a greater number of future snowmobilers learn their limits, respect their machines, watch for signals, and anticipate what may be coming down the trail as they aim for safe, enjoyable rides.

David L. Sperling edits Wisconsin Natural Resources *magazine.*

JEREMY SOLIN

Forests of opportunity

For 75 years school forests have planted the seeds to restore the outdoors and instill outdoor ethics in Wisconsin students.

Jeremy Solin

"Turn it on its back. That way it won't scratch you," one of the college-aged "Woodsies" told the student holding the Blanding's turtle. The turtle had just been captured by Fort McCoy biologist Tim Wilder after students located it using radio telemetry. We were tracking and capturing radio-tagged turtles as part of the West Salem school forest overnight program for seventh graders. These 50 students are just a few of the school-aged children and adults enjoying exciting opportunities at school forests across the state.

Home of the school forest tradition

Wisconsin has a long and proud school forest tradition. The school forest idea was borrowed from Australia by Dean Russell of the UW College of Agriculture assisted by Wakelin "Ranger Mac" McNeel, state 4-H leader, and Fred Trenk, a UW-Extension forester. Russell had spearheaded legislation to set aside community forests. The Community Forest Law of 1927 allowed schools, organizations and municipalities to own property specifically managed for forestry. The first school forests in the United States were registered in Wisconsin the following year at Laona, Wabeno and Crandon.

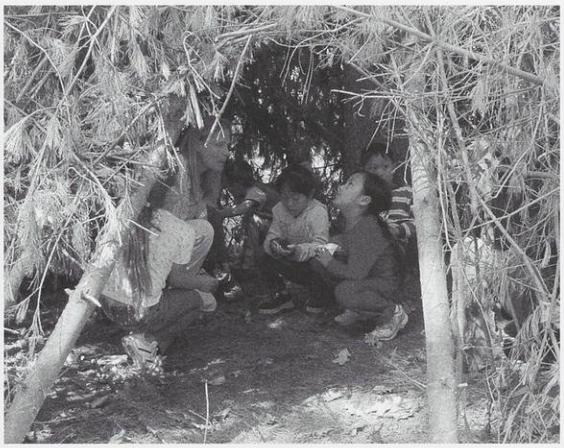
The school forest vision was to reclaim cut and burned-over forestland while instilling a conservation ethic in school children. Many of the school forests were tax-delinquent lands deeded to schools from counties or donated by community members. These properties became sites for aggressive reforestation efforts.

The program has grown considerably in the past 75 years. Today, nearly 200 school districts and private schools in Wisconsin own more than 300 registered school forests. As a partnership between the DNR's Division of Forestry and the Wisconsin Center for Environmental Education in the College of Natural Resources at UW–Stevens Point, a statewide program provides teaching materials and contacts with outdoor educators and forest professionals to help school forests achieve their full potential. School forests provide space to: demonstrate how to manage land to sustain natural resources, provide hands-on learning, strengthen community relations, help schools integrate environmental education and meet state standards, and provide income for educational activities.

A community and conservation legacy in Stevens Point

Experiences in the Boston School Forest are favorite memories for many students in the Stevens Point school district. All kindergarten through sixth grade students visit the school forest at least once a year. Since each grade visits during different seasons, students are sure to have different experiences on each trip. First graders visit the school forest in April or May and use their five senses to observe signs of spring. The following year, students take a winter hike to observe animal tracks, learn to recognize signs of outdoor activity and discuss animal adaptations. The programs create lasting impressions and students often ask to visit the special places that they remember from previous trips.

(left) **Nature study, ecology, recreation and more draw students to more than 300 registered school forests in the state.**
(inset left) **Planting one of the nation's first school forests in Laona, Wis. back in 1928.**
(above) **West Salem students radio-tag and monitor movements of threatened Blanding's turtles at Fort McCoy.**



For younger grades, visits to the Boston School Forest in Stevens Point stress nature awareness and appreciation. Annual visits continue at least through sixth grade.

Northland Alternative School's program infuses environmental education throughout the curriculum. Students built compost bins that show adults and younger children environmental practices they can try at home.

They also share their enthusiasm and their newfound knowledge with parents. Retired coordinator Sally Ellingboe recalls numerous reports from parents trying new things at home, such as planting trees, constructing brush piles, or snowshoeing because their children had learned about it at the school forest. These important community connections build support and a corps of long-term volunteers as a legacy from school forest experiences. For instance, last spring, sixth grade students volunteered an afternoon to complete a rock trail along the renamed Ellingboe Pond. The rock was donated and delivered the previous night by a farmer. While discussing the trail projects with students, a teacher discovered that one of their dads had helped dig the pond and that another's grandpa had "helped found this forest" and still serves on the school forest committee. Such connections show the community's continued commitment to a forestry program as part of the school learning experience.

In the future, Boston School Forest visitors will have a chance to learn more about biodiversity. Current coordinator, Karen Dostal, assisted by the local DNR forester, is implementing a plan to diversify the school forest habitat. "We have oaks, aspen and a few maples regenerating in the understory of our pine plantation," Dostal said. "We'll selectively cut and thin maturing pines, which will provide the sunlight to release the young trees that will start growing. The harvested timber will be sold to raise money for the school forest program, the forest will be healthier, and students will get to see another aspect of forest succession in future years.

Trees spark alternative ways to teach and learn

The Northland Alternative School recently won a national Service Learning Award for its use of the Superior School Forest. Kids attending the school are considered "at-risk." For various reasons, they just didn't succeed in traditional school settings. Now that's changing, and local news coverage of the turnaround stated "if you really want to get to know these students, you need to visit them at the school forest."

A visitor would likely find students with their science, math, language arts and social studies teachers working on projects. Northland's approach integrates environmental education and the school forest as a basis for nearly everything students do in the classroom. According to Edwin Johnson, science teacher and coordinator of the school forest, providing this hands-on, practical education works wonders for these students. Their attendance and achievement have increased dramatically. Before attending Northland, "These students were non-attendees," says Johnson. "Here they even help out on Saturdays." The school forest program sparks such an interest that some students take classes in botany and other sciences at UW-Superior while still in high school.

Students don't keep their learning to themselves. As part of the requirements for taking the school forest natural history class, students teach classes for elementary students and community members. Elementary school classes hear about animal tracking and make a track T-shirt. They may take part in WaterWatch, which introduces elementary students to water quality monitoring; participate in hands-on reclamation of a gravel pit; and learn orienteering on a compass training course. Each year hundreds of families and senior citizens also attend school forest programs led by the Northland students. Participants get to "try 'em before you buy 'em" in the snowshoe programs, experience a Native American *sissibakwat* (sugarbush), construct home compost bins, learn bird identification skills, and make their own holiday wreaths.

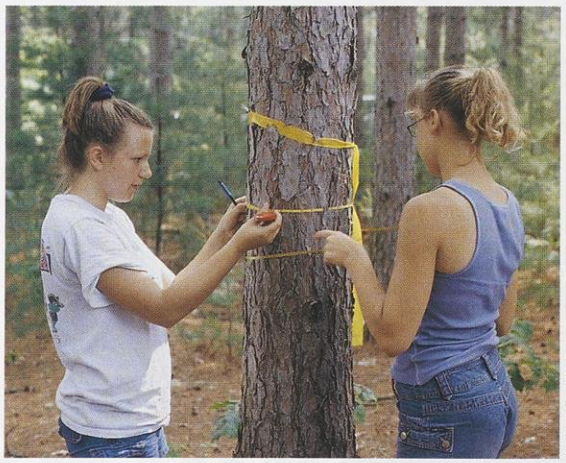
Leaders in training

Environmental education counselors at the Tri-County School Forest, located between Plainfield and Babcock, also complete an intensive training course before they share their knowledge with other district students. The counselors are juniors and seniors who take a summer elective science course taught by Larry Mancl, Tri-County's environmental education coordinator. The course gives students a flavor of ecology, forestry, soils, water, wildlife, and education techniques and strategies.

Students apply the knowledge they acquire in a couple of different ways. During the school year, counselors teach approximately 10 classes for pre-kindergarten through twelfth-grade students at the school forest. The counselors plan the lessons based on the curriculum that the district has developed and ensure that their teaching meets state education standards.

During the summer, counselors perform scientific monitoring that is used in statewide efforts. One of these projects tracks bluebirds. Counselors keep records on hundreds of bluebird nest boxes built by Tri-County students from wood harvested and sawed in the forest. The boxes are either placed by students or given to community members to place on private lands with the agreement that the boxes be maintained and monitored. According to Tom Whalley, a retired Tri-County teacher who initiated the project, district students have built over 3,000 boxes, which have been distributed through five central Wisconsin counties. He estimates that 6,000 bluebirds hatch from these boxes each year. Students provide the information they collect to the Bluebird Restoration Association of Wisconsin, which assesses the changing bluebird population each year.

The counselors also collect data that provides the basis for making management decisions on the school forest. Eighty inventory plots have been established across the property. Each summer students assess selected plots to determine growth and condition of the forest. They conduct soil tests to analyze fertility and determine which trees grow best on each site. Lakes and marshes are examined to ensure that management decisions are not having any adverse impacts on water quality. In addition, counselors monitor the success of a 2½-acre prairie restoration project, a memorial to Liza Golla, a former Tri-County student.



JEREMY SOLIN

JEREMY SOLIN

(below) **Tri-County students built, distributed and monitored more than 3,000 bluebird houses that now produce more than 6,000 bluebirds each year.** *(right)* **Tri-County students annually take growth measurements that provide the data for managing the school forest property.**

Hands-on science

The West Salem School Forest provides numerous opportunities for students to become actively involved in collecting meaningful and useful scientific data. The highlight for many seventh graders at West Salem is the overnight program at the school forest. The campout is not all hard work, but students participate in a number of intense sessions that teach them observation and inventory skills, radio telemetry, and the chance to bruise some thumbs constructing birdhouses and Leopold benches. They apply what they've learned by tracking and capturing the threatened Blanding's turtles on Fort McCoy property. Data compiled each year provides insights on the habits of these secretive creatures and helps the fort improve habitat conditions.

The overnight program is largely taught by "Woodsies" — West Salem graduates home from college for the summer. According to Jessie Thompson, a Woodsie last year, "We serve as a bridge between the students and the teachers." She adds, "Students may relate easier to the Woodsies and we make their experience at the forest more enjoyable." The involvement of the college students is a major factor in the program's success.

Jessie remembers the seventh grade campout as the highlight of her school forest learning, which was likely a major factor in determining her career path. She is currently majoring in agriculture and applied economics with a focus on environmental and international economics. She is hoping to pursue a career that addresses Third World natural resource management or hunger and poverty issues.

Another program that extended Jessie's experiences at the school forest was an independent studies program at the Department of Natural Resources' Sandhill Outdoor Skills Center near Babcock. Several students from West Salem and surrounding districts have conducted scientific research under the direction

DAVE BRABY

JEREMY SOLIN

(top) **Challenge courses at Potter's School Forest in Milwaukee encourage team building and provide a reason to get kids outdoors into the woods.**
(above) **West Salem students see how radio telemetry can tune in to track animals, plot their seasonal movements and see what portions of the forest environment they use.**

Spotlighting school forest champions

In celebration of the 75th anniversary of Wisconsin school forests, LEAF (Learning, Experiences & Activities in Forestry), the Wisconsin K–12 Forestry Education Program, will recognize those individuals who have had a significant impact on the development of the school forest program. Awards will be given in teacher, administrator, resource manager and community member categories. If you know of someone deserving of an award, visit www.uwsp.edu/cnr/leaf/schforest.htm or contact Jeremy Solin, Wisconsin School Forest Education Specialist, at (715) 346-4907 or jsolin@uwsp.edu for a nomination form.

Woodland adventure

The Potter's School Forest is 50 acres of oak-hickory and pine forest, wetlands and grassland nestled along Whitnall Park in the heart of the Milwaukee metropolitan area. Thousands of visiting students and community members make it one of the state's most well used school forests.

The focus of the Potter's program is also distinctive. While many school forests include ropes and challenge courses, few courses are developed to the extent of Potter's. Students and school district facilitators use the course every day of the school year, while summer programs serve summer school students and community members. The ropes and challenge course is designed to be "universal" — to accommodate all skill and ability levels. This is essential in a school district with a high special needs population. This approach allows everyone to participate together and is a key component of the program's success. Another piece of the program's effectiveness is its setting. Many of the participants have not spent much time in a forest or out of sight of concrete prior to their Potter's experience. Stepping out of their "comfort zone" helps the group focus more on the activities and adds an element of perceived risk.

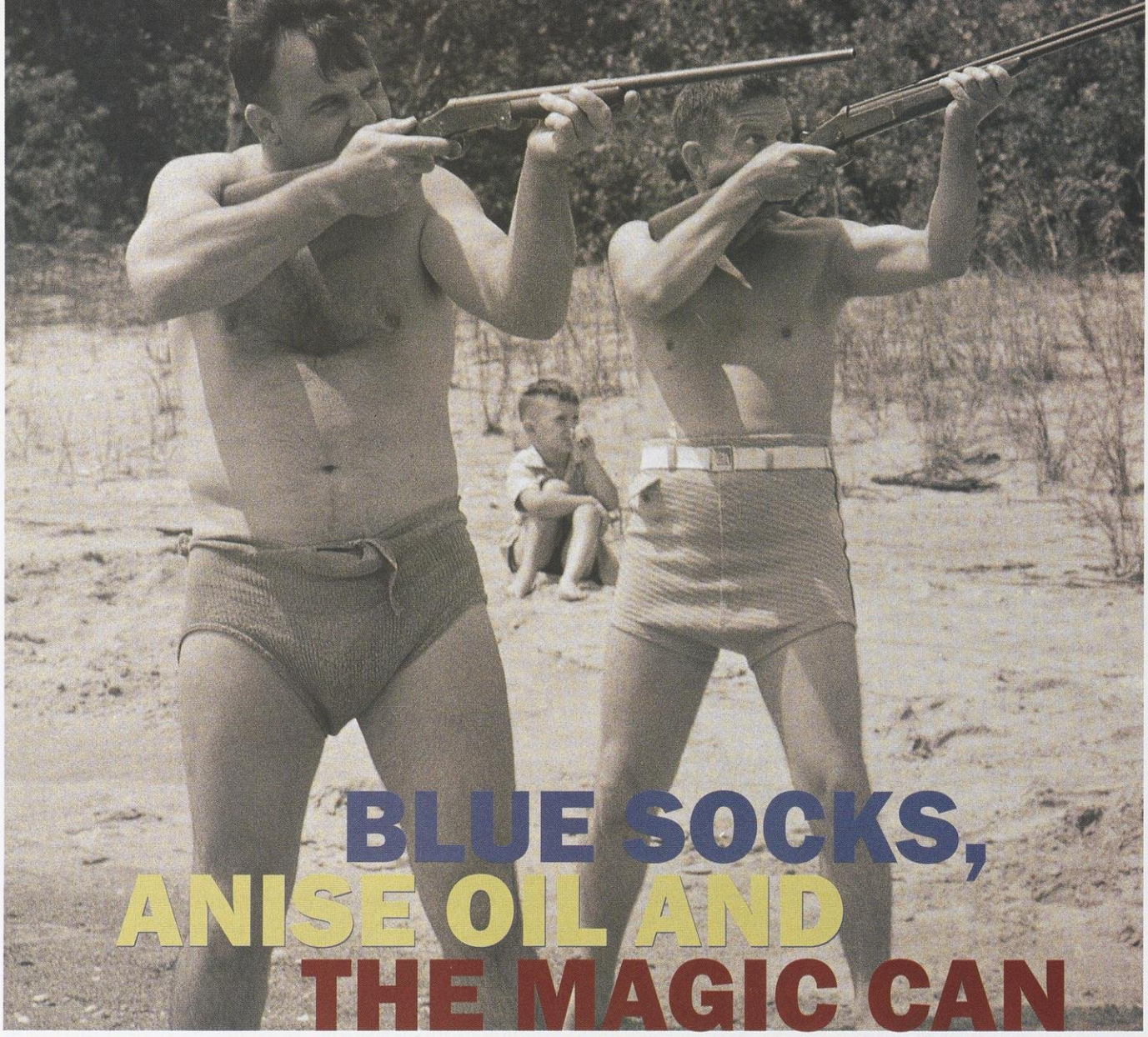
Completing a day on the course caps a series of classroom lessons that prepare the students for the program. It encourages them to function better as a team, communicate more effectively, trust each other a little more, and be better problem solvers — in essence they are more prepared to learn. Participants may also become more aware of their environment and more comfortable in the outdoors.

Dave Braby, Potter's coordinator, hopes to build on the successful program by developing a more in-depth environmental education program and by constructing a nature center to meet growing demand. A year-round facility and expanded programs will ensure that more students and community members can experience the beauty and challenge of the Potter's School Forest.

With more than 300 school forests in 65 of Wisconsin's 72 counties, there is surely one you can visit nearby. School forests are places of environmental education, community programs, sustainable natural resource management, income generation, and recreation. Most importantly, these outdoor classrooms stimulate lifelong learning and encourage community relations. Check out your nearest school forest to see how you can get involved.

of Dick Thiel, coordinator at Sandhill. Jessie participated in research that examined how porcupines affect forest trees. The researchers found that feeding porkies cause very minor damage to trees compared to problems caused by disease and weather. Other students have participated in studies examining deer-wolf ecology. The information collected in these studies, according to Thiel, has contributed considerably to the scientific knowledge of these animals and their habits.

Jeremy Solin is the Wisconsin School Forest Education Specialist, at the University of Wisconsin-Stevens Point. For list of school forests, visit www.uwsp.edu/cnr/leaf/schforest.htm, phone him at (715) 346-4907 or send him an e-mail at jsolin@uwsp.edu.



STABER W. REESE. TRAP-SHOOTING ON THE DOOR COUNTY SHORE, AUGUST 1942

BLUE SOCKS, ANISE OIL AND THE MAGIC CAN OF WORMS

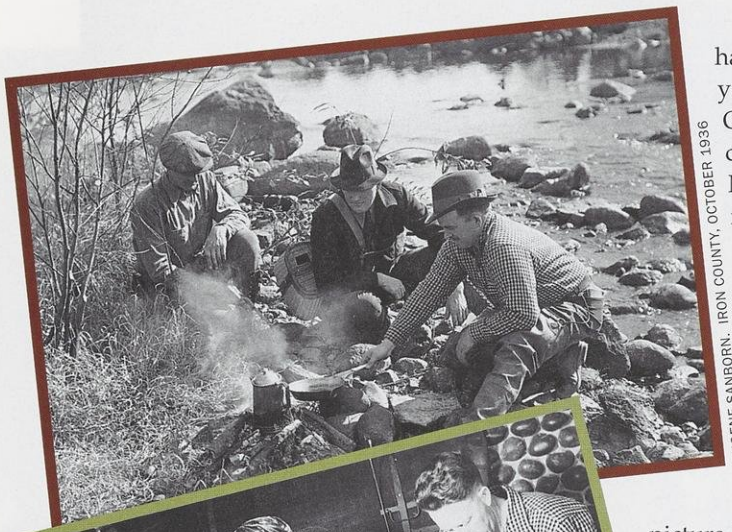
Got an odd or funny hunting camp or fishin' tradition? Let's hear about it.

David L. Sperling

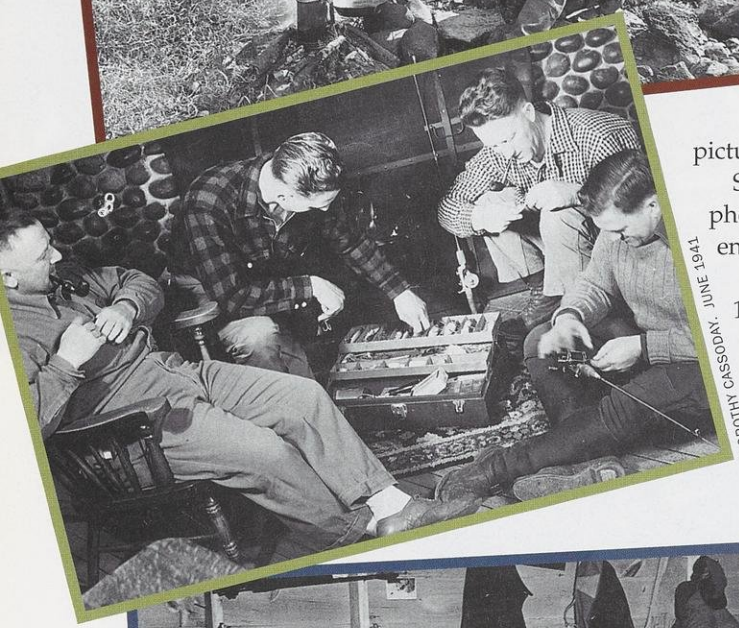
I was packing for a recent four-day fishing trip, rummaging through the garage and muttering as I pushed aside the extension ladder, a bag of soccer balls and a half-rusty can of Coleman fuel to find my tackle box. I tend to travel pretty light with my gear so I can leave extra room for a favored snack or libation that I know will slide easily down the collected gullets of "the group." Still, when I wrestled the tackle box out of its dark corner, a crumpled paper bag fell to the floor. Inside was a small plastic pouch of razor-sharp #8 red hooks. My tackle box is full, but I gleefully rescued those hooks and made room in one of the divided compartments to squeeze them in next to some floating jig heads. Why did I need those red hooks? I don't know. I just know that I have fun fishing with them and I guess that keeps my interest when the fish have long since lost theirs.

Every bit as much as those fish, people are creatures of habit. I have a friend who insists on wearing the same pair of holey blue socks every time he goes deer hunting. He also hunts in high-topped leather boots so the deer can't possibly see those socks, but who am I to argue? He's a terrific shot and routinely comes home with fresh game. Another friend habitually rubs a drop of anise oil on his hands before he handles fishing bait. Why he thinks bass are attracted to licorice-flavored crawlers eludes me. I guess he thinks he is masking scent. A third friend always packs his bait in a "lucky" can.

We all have traditions that defy logic, but are nonetheless steeped in our routine. Not only do we recognize that the



EUGENE SANBORN. IRON COUNTY, OCTOBER 1936



DOROTHY CASSODAY. JUNE 1941

STABER W. REESE. FLORENCE COUNTY, NOVEMBER 1943

habit is silly, but we look forward to repeating it every year. Maybe your deer hunting group eats the same goulash the night before Opening Day. Maybe you paint a green stripe on all your duck calls. Maybe you carry a good luck charm in your hunting jacket. Maybe you have a special victory dance around the campfire. Or maybe one of the routines in your group is a little more bizarre.

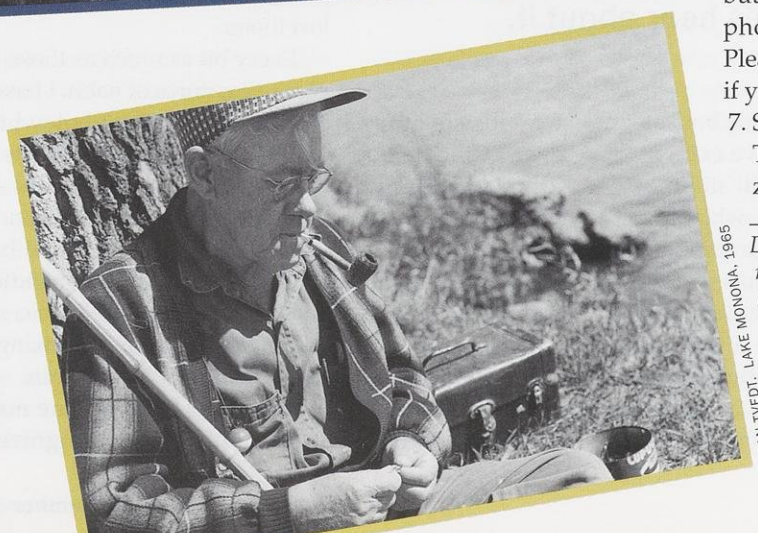
I hope so.

We thought this would be the right time of year to either relive a moment from the hunting season just past or that the holidays might give you a tad of time to write up a short outdoor tradition that is meaningful, but funny to you. This isn't True Confessions, so you don't have to name names of the weird habit you are describing, unless of course you want the world to know what Fred and your hunting group is up to. Better yet, if the superstitious son of a gun is proud of his or her idiosyncrasy, send us a picture (slides preferred) to show us what you are talking about.

Send your short descriptions of up to 200 words with clear slides or photos in good focus by **May 31, 2004.** We'll print the most entertaining entries in our October issue.

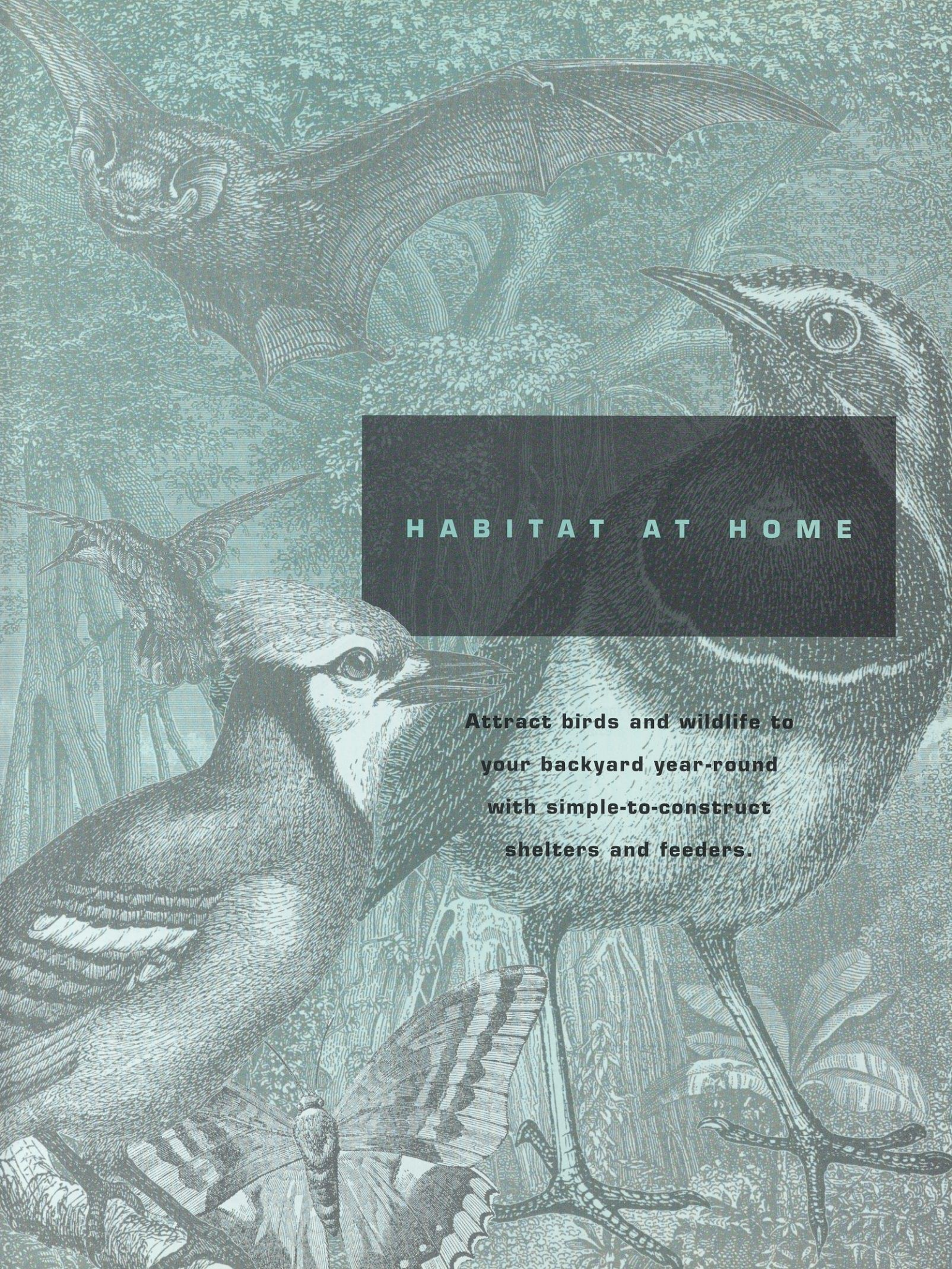
Suggestions for crafting your story:

1. Keep it short, but entertaining. We don't need any lead-ins describing why the person or group is hunting or fishing. A lot of us are proud to share that character flaw. Just zero-in on the habit or tradition. Hunting, fishing and other outdoor traditions are equally appropriate.
2. Describe a bit about the habit, superstition or tradition — Don't just tell us that Fred carries a rabbit's foot or that Emily wears a snakeskin belt. We need a bit about how and why this habit developed.
3. We can handle the exotic, but not the erotic — Hey, it's a family publication. We don't want to stretch the envelope on what qualifies as a "natural" experience. Write about fish or fowl, not foul.
4. Show us the gang — If it takes several of you to participate in this tradition, by all means share a picture of everyone in the grass skirts and coconuts.
5. Sign on the dotted line — Please print your name and tell us from which community you are writing. We want to make sure we spell names correctly for those stories that are published. By the way, we'll publish as many usable entries as we can.
6. Take several slides or photos — We prefer slides, but quality prints or artwork will work too. Digital photos are almost always too small for our use. Please include a stamped, self-addressed envelope if you would like your images returned.
7. Send submissions by May 31, 2004 to: Outdoor Traditions, *Wisconsin Natural Resources* magazine, P.O. Box 7921, Madison, WI 53707.



DEAN TVEDT. LAKE MONONA. 1965

David L. Sperling edits Wisconsin Natural Resources *magazine and will come clean on a weird tradition of his own.*



HABITAT AT HOME

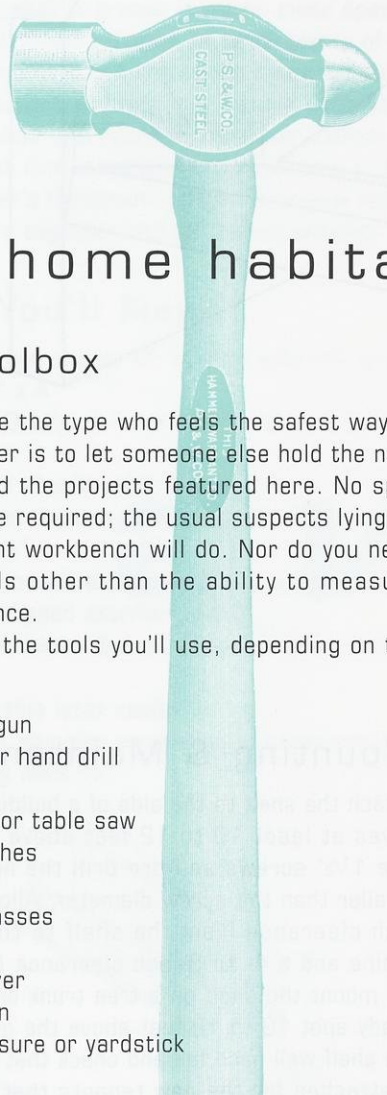
Attract birds and wildlife to your backyard year-round with simple-to-construct shelters and feeders.

Building to meet basic needs

The needs of life are simple: A safe, comfortable place to raise a family, somewhere to loaf with friends, good food and refreshment in familiar surroundings.

Similar amenities attract wildlife; offer them in your backyard and it's likely you'll have wild visitors throughout the year. Properly built and located, the shelter and feeder projects featured here will fulfill those basic needs. The time and effort you spend to construct one or several of the projects will be rewarded with frequent opportunities to view and study wildlife at close range.

Providing backyard habitat for nesting, shelter and feeding becomes more important as wild habitat decreases due to land development and demand for forest and agricultural products. When you add your projects to the available habitat base, you'll help strengthen and support wildlife populations in your area and beyond.



The home habitat workshop

The toolbox

Even if you're the type who feels the safest way to use a hammer is to let someone else hold the nail, you can build the projects featured here. No special tools are required; the usual suspects lying on the basement workbench will do. Nor do you need special skills other than the ability to measure twice, cut once.

Here are the tools you'll use, depending on the project:

- Caulking gun
- Electric or hand drill
- Hammer
- Handsaw or table saw
- Paintbrushes
- Router
- Safety glasses
- Scissors
- Screwdriver
- Staple gun
- Tape measure or yardstick
- Tin snips

Of course you'll wear safety glasses when sawing or drilling lumber, and provide guidance and supervision when children handle sharp or pointed tools.

A word about wood

Lumber is sold in standard sizes, but much to the consternation of novice carpenters the boards are actually narrower and thinner than the standard size indicates. For instance, a 1 x 8 board is about ¾" of an inch thick and 7¼" inches wide. In the project plans, lumber dimensions that contain no inch marks refer to the standard size. Inch marks (½") indicate the actual measurement.

Redwood and cedar resist decay and will last a long time, but they are expensive and are prone to splitting if you don't pre-drill holes before driving nails or screws. Pine and spruce are cheaper alternatives; you can get good results with grades 2 and 3 of these woods, and your project should last for several years.

Exterior grade plywood, either ½" or ¾" thick, can replace the standard 1-inch thick lumber mentioned in the project plans. Avoid plywood sheathing and underlayment — the plies will separate when exposed to the weather.

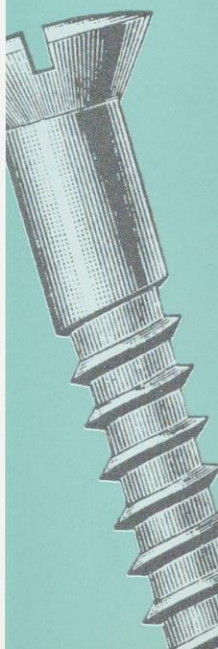
Don't use wood treated with preservatives such as creosote, pentachlorophenol (penta), or green copper/chromium/arsenic salts.

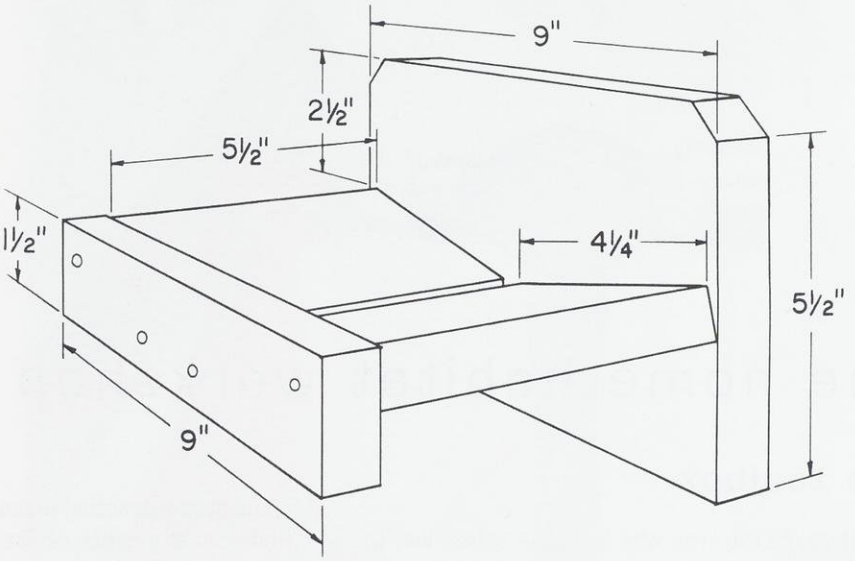
Hold it together

For added strength and longevity, use rust-resistant nails and screws — galvanized, zinc-plated aluminum or stainless steel. If the project plan requires glue, waterproof wood glue gives the best results against the elements.

The finishing touch

Over time unfinished wood will weather to a soft grey and blend nicely into the natural surroundings of your yard. You can stain or paint the exterior if you like; the birds and bats won't mind. Semi-transparent oil-based stains work well provided they do not contain penta. Latex stain is less durable. If you want to use paint, first treat the wood with a water repellent. Let it dry for a day or two, then apply one coat of an oil-based primer followed by two coats of latex house paint.





SPRING

Nesting Shelf

A platform for the whole family

Robins and phoebes prefer open but protected nest sites rather than fully enclosed nest boxes. Set up this nesting shelf under the eaves of a building and the birds will have a safe spot protected by the overhang in which to raise their young.

What You'll Need

1 piece 1 x 6 (about ¾" x 5½") x 18"
1 piece 1 x 2 (about ¾" x 1½") x 10"
8 nails 1¾"–2¼"

Construction Step-by-Step

1. Cut the back and the two platform pieces from the 18" piece of 1 x 6 to the dimensions shown in the diagram.
2. Cut the 1 x 2 to the dimension shown.
3. Measure 2½" inches down from the top of the back piece. Using two nails per board, nail the outside edge of each platform piece to the back. Slope the pieces down toward the center just enough so that rain or melting snow can drip through the small gap in the platform, then nail the inside edge to the platform to hold that angle in place.
4. Nail the 1 x 2 to the front of the sloping platform boards as shown.

Mounting & Maintenance

Attach the shelf to the side of a building under the eaves at least 10 to 12 feet above the ground. Use 1½" screws and pre-drill the holes slightly smaller than the screw diameter. Allow a 6- to 7-inch clearance from the shelf to the eaves for robins and a 4- to 5-inch clearance for phoebes. Or, mount the shelf on a tree trunk or branch in a shady spot 10 to 12 feet above the ground. Clean the shelf well each fall and check that it is securely attached for the new tenants that will take up residence in early spring.

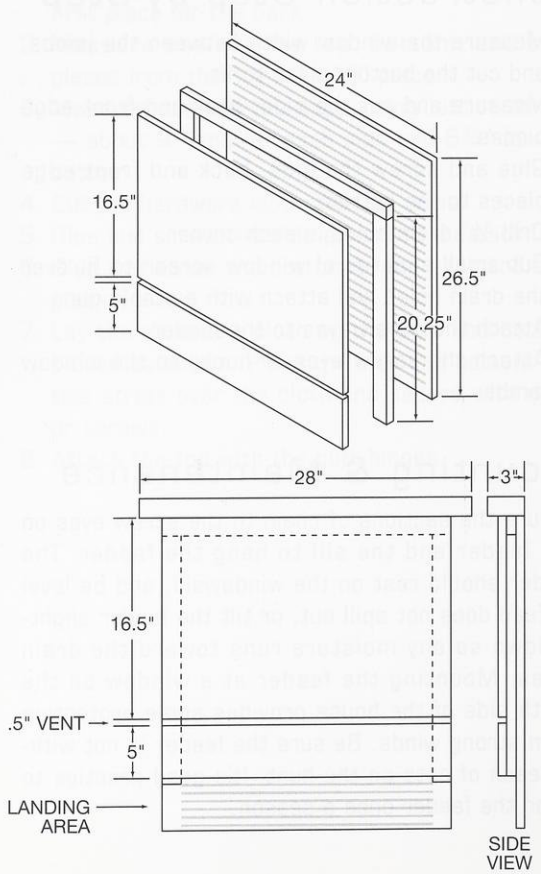
Bat House

The hottest place to hang out

Bats like to roost in groups in warm, close spaces. A simple bat house situated to catch plenty of the sun's warming rays will encourage these voracious mosquito-eaters to hang out around your yard. This house has one roosting chamber. Other designs in Bat Conservation International's "Bat House Builder's Handbook" sandwich several roosting chambers together into bat colony condos!

What You'll Need

1 (one-quarter sheet) of ½-inch exterior grade plywood 2' x 4'
1 piece 1 x 2 (about ¾" x 1½") x 8' pine furring strip
1 piece wood 1" x 3" x 28" for roof
20–30 coated deck or exterior grade Phillips-head screws 1¼"
1 pint water-based exterior stain, in a dark color
1 pint water-based exterior primer
1 quart flat water-based exterior grade paint or stain
1 tube paintable latex caulk
black asphalt shingles or galvanized sheet metal
6–10 roofing nails ⅞"

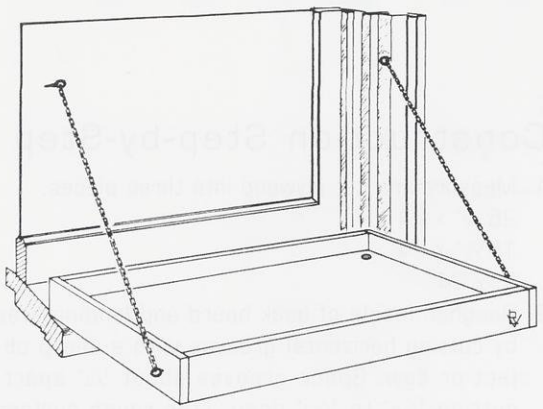


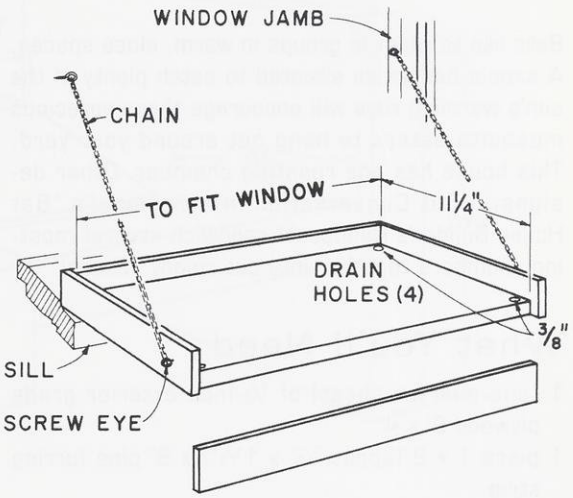
Construction Step-by-Step

1. Measure and cut plywood into three pieces:
   26½" x 24"
   16½" x 24"
   5" x 24"
2. Roughen inside of back board and landing area by cutting horizontal grooves with a sharp object or saw. Space grooves about ½" apart, cutting 1/16" to 1/32" deep. (The rough surface provides traction, giving the bats something to grip on to while hanging.)
3. Apply two coats of dark, water-based stain to interior surfaces. Do not use paint, as it will fill grooves, making them unusable.
4. Measure and cut furring strip into one 24" and two 20¼" pieces.
5. Attach furring strips to back, caulking after screwing in strips. Start with 24" piece at top, and the two 20¼" pieces on each side. Leave the bottom open. Roosting chamber will be ¾" wide (front to back).
6. Attach front to furring strips, top piece first (don't forget to draw a bead of caulk on the top edge of the furring strip before driving the screws). Leave ½" vent space between top and bottom front pieces.
7. Caulk around all outside joints to further seal the roosting chamber.
8. Attach the 1" x 3" x 28" board to the top as a roof.
9. Paint or stain exterior three times (use primer for first coat).
10. Cover roof with shingles or galvanized metal and attach with roofing nails.

Mounting & Maintenance

In early spring, mount the bat house on the side of a building at least 12 feet (15 to 20 feet is better) above ground, in a spot where it will receive sun all day long. A spot under the eaves is ideal. To create favorable conditions for a summer breeding colony, the internal temperature of the bat house should stay between 80 to 100°F for as long as possible. Bat houses can be placed back-to-back and mounted on a pole, but those mounted on buildings gain heat faster, hold it longer, and are more likely to attract bats.





AUTUMN

Windowsill Feeder

The best table in the house

Like true gourmets, some birds have very specific food preferences. Cardinals and juncos savor black sunflower seeds; goldfinches and pine siskins prefer niger thistle seed; and jays would trade their bright blue feathers for a handful of peanut pieces. Spread a tempting seed buffet on this spacious window feeder, then sit back and enjoy the show — you'll have the best seat at the table. (P.S. Set an extra place for the squirrels.)

What You'll Need

For bottom:

½" exterior grade plywood, or 1 x 12 lumber (about ¾" x 11¼")

For edges:

5/16" x 1¾" lattice, or ¼" plywood strips
1" or 1¼" nails
waterproof glue
3' small-link solid brass or galvanized chain
4 screw eyes or screw hooks
window screen to cover drain holes

Construction Step-by-Step

1. Measure the window width between the jambs, and cut the bottom piece to fit.
2. Measure and cut the side, back and front edge pieces.
3. Glue and screw the side, back and front edge pieces to the bottom.
4. Drill ⅜" drain holes in each corner.
5. Cut small squares of window screen to fit over the drain holes and attach with a staple gun.
6. Attach the screw eyes to the feeder.
7. Attach the screw eyes or hooks to the window jambs.

Mounting & Maintenance

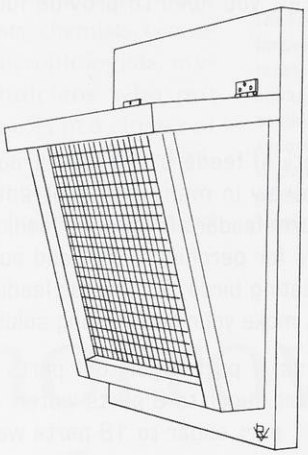
Secure the sections of chain to the screw eyes on the feeder and the sill to hang the feeder. The feeder should rest on the windowsill, and be level so feed does not spill out, or tilt the feeder slightly down so any moisture runs toward the drain holes. Mounting the feeder at a window on the south side of the house provides some protection from strong winds. Be sure the feeder is not within reach of cats on the hunt. It's good practice to clean the feeder once a season.

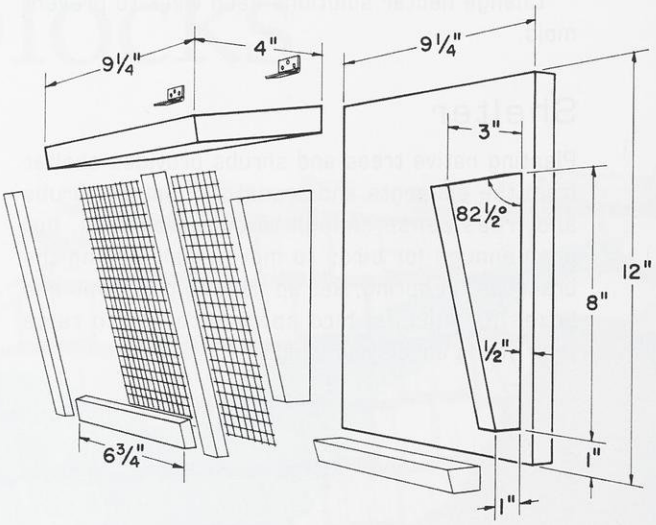
WINTER

Suet Feeder

A fueling and lubrication station

Suet — animal fat — is a quick source of heat and energy for insect-eating birds whose food supply dwindles in cold weather. Buy suet at butcher shops and some supermarkets, or purchase seed-and-suet cakes from pet shops and garden centers.





What You'll Need

1 piece 1 x 10 (about ¾" x 9¼") x 25", or the equivalent in ¾" exterior grade plywood
1 piece 5/16" to ½" lattice 3' long, for strips to hold hardware cloth in place
1 piece 7½" x 8" hardware cloth, ⅓" mesh
1 pair 1" x 1" butt hinges with screws
1¼" nails or 1" flat-head wood screws to attach lattice strips
1¼"–2¼" nails
waterproof glue

Construction Step-by-Step

1. Cut the plywood so one piece measures 1 x 10 x 12" and the other is 1 x 10 x 13". Use the first piece for the back.
2. Measure and cut the top, bottom, and side pieces from the 1 x 10 x 13" piece.
3. Measure and cut the supporting lattice strips — about 9" long for each side and 6¾" for the bottom.
4. Cut the hardware cloth with tin snips.
5. Glue and screw the side pieces to the back.
6. Glue and screw the bottom to the back and side pieces.
7. Lay the hardware cloth on the side and bottom pieces as shown. Place the side and bottom lattice strips over the cloth and secure with nails or screws.
8. Attach the top with the butt hinges.

Mounting & Maintenance

Birds attracted to suet, like woodpeckers and nuthatches, cling to the bark of trees in search of insects, so you'll want to hang the suet feeder near a tree trunk or attach it with round-head or lag screws to a post or building about five to six feet above the ground. Choose a place protected from harsh north and west winds. If you can situate the feeder near shrubs or conifers, all the better; the thick brush offers more shelter for the birds. Winter suet feeding should begin in late October or early November and continue without interruption until spring. Birds develop feeding patterns and will stop visiting a feeder if there are interruptions in the food supply. Take the feeder down in early summer, clean it well, check all the fittings and put it in storage until it's time to bring it out again in late fall.

Improving backyard habitat

To keep birds and wildlife coming back to your backyard habitat, you need to provide four basic elements:

Food

Placing a variety of feeders and food around your backyard will draw in many different species of birds. Try platform feeders for ground feeding birds, hanging feeders for perching birds, and suet feeders for insect eating birds. For nectar feeding birds and butterflies, make your own feeding solutions:

Hummingbirds: 1 part sugar to 4 parts water.
Orioles: 1 part sugar to 8 parts water.
Butterflies: 1 part sugar to 18 parts water.

Change nectar solutions each week to prevent mold.

Shelter

Planting native trees and shrubs provides shelter from the elements and predators. Select shrubs and trees dense enough to support nests, but open enough for birds to move freely among the branches. In spring, set up nesting platforms and boxes for specific bird species to use to raise their young under your wing.

Water

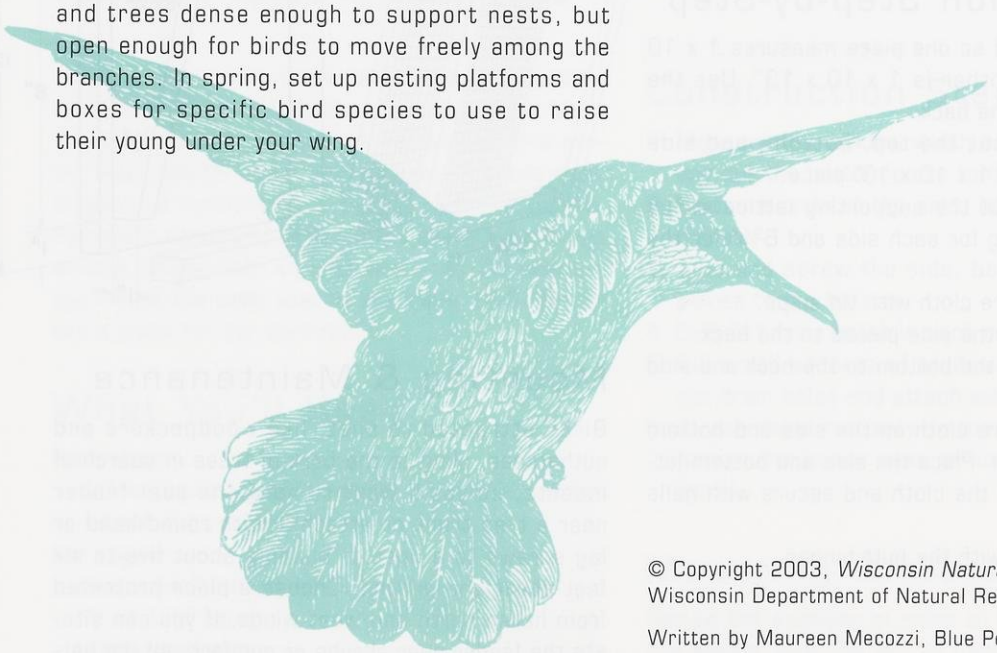
Birds and wildlife are drawn to the sound of moving water. To make your bird bath or pool of fresh water doubly attractive, add a mister, dripper or circulating pump.

Diversity

Backyard habitat exists on a series of levels:

grass or ground cover (2" to 1')
shrubs (2' to 5')
small trees (5' to 15')
tall trees (15' to 40')

Offer food, water and shelter at each level and you will increase the diversity of your backyard and the number of species that use it. Select trees, plants and shrubs that produce berries, seeds, fruits, nuts, sap and nectar for year-round food — cedar waxwings, for instance, find the blue fruit of the red cedar tree irresistible.



Written by Maureen Mecozzi, Blue Pencil Media

Art Direction by Nancy Warnecke, Moonlit Ink

Nesting shelf, windowsill feeder and suet feeder designs from "Shelves, Houses and Feeders for Birds and Mammals," G. Barquest, S. Craven and R. Ellarson, North Central Regional Extension Publication No. 338.

Bat house design courtesy of the North American Bat House Research Project, Bat Conservation International, Inc., www.batcon.org

CE-4009-03

George Couch

Shaping tomorrow's building blocks

New wood products and processes for home building are always under construction at the Forest Products Laboratory.

In the next five years, Wisconsinites will build some 130,000 new homes. Nationwide trends predict another seven or eight million new houses, joining the 76 million or so existing single-family houses. The vast majority will be constructed largely of wood, and every house, whether wood-framed or not, will incorporate technologies, materials or design features that were developed or studied at the Forest Products Laboratory (FPL) in Madison.

Since 1910, this lab of the U.S.D.A.'s Forest Service has grown to include a workforce of botanists, chemists, economists, engineers, microbiologists, mycologists and technicians who put wood through its paces in a cluster of buildings at the western end of the University of Wisconsin campus. Their research leads to new building codes and engineering standards, new wood products, and new procedures for making paper or building houses.

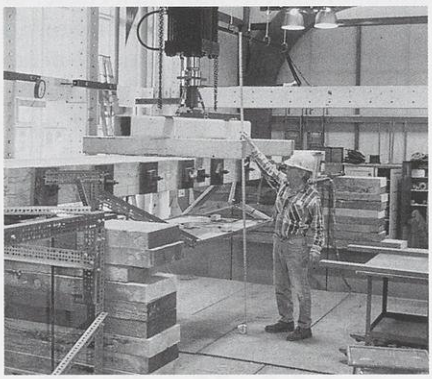
The Forest Products Laboratory looks at housing innovations from top to bottom. At the lab's research-demonstration house in Madison roofing, siding, framing, flooring and foundation as well as caulks, sealants, paints and finishes are all being exposed to the true test of time and the extremes of Wisconsin weather. Shingles expected to last 50 years were manufactured of recycled plastic and sawdust by a Baraboo firm.

The lab complex includes some impressive machinery whose sole purpose is to torture and destroy wood to test its properties. Another building contains a pilot plant for testing papermaking innovations. FPL's headquarters houses collections of 103,000 wood specimens from around the world as well as 14,000 specimens of wood-decaying fungi.

Current wood research is examining mechanical and physical properties of woods, wood deterioration and preservation, fungus and mold growth, papermaking, "deconstruction" of old buildings, wood adhesives and sealants, engineered lumber, wood-fiber filters, ethanol production, moisture control, and new uses for small-diameter timber. Much of the research has practical applications for house construction and maintenance. The facility includes a full size, four-bedroom house, built in 2001 to showcase and evaluate building materials and building techniques.

"Housing accounts for 80 percent of the solid wood products used in the United States, so it's a natural high priority area for the Forest Service and FPL," said Chris Risbrudt, economist and director of Forest Products Lab since 2001. Government has broad interests in ensuring that houses remain durable and affordable, Risbrudt said.

ROBERT QUEEN



FOREST PRODUCTS LABORATORY

(top) **The FPL has been housed in Madison since 1910, in its current headquarters since 1932.** *(above)* **Testing the strength and stiffness of a timber bridge segment like those used in hundreds of bridges across the country.**

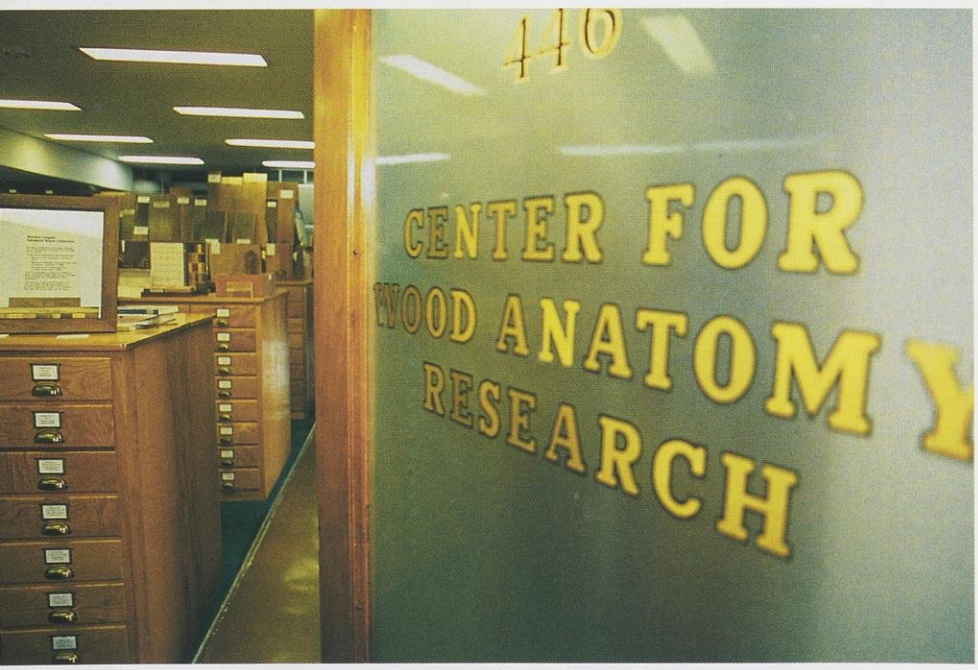
"Home building, improvement and maintenance are important sectors in our national economy," he noted, "and for most Americans, buying a home represents the largest investment most of us make in our lifetimes."

Research with a practical payoff

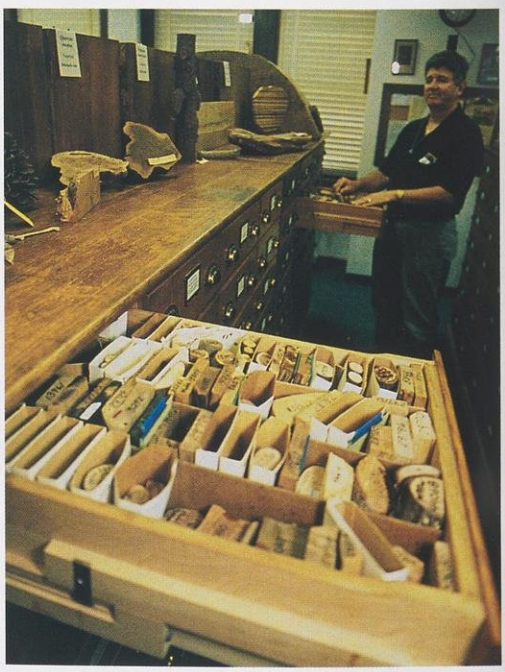
FPL researchers have investigated a wide range of housing issues that proved to have practical applications. One early project analyzed the structural qualities of different woods. The resulting data showed many species of wood are suitable for constructing houses and formed the basis for national standards in grading lumber. Studies of wall condensation in the 1930s led to the first recommendations for using vapor barriers. The 1935 one-volume encyclopedia, *Wood Handbook: Wood as an Engineering Material*, remains a builder's bible on working with wood as a structural material. It has been updated numerous times, most recently in 1999. A system of classifying and grading paints helps consumers choose the most appropriate coating for a particular application.

The first all-wood prefabricated house was built using plywood panels at FPL in 1935; two more demonstration houses were erected in 1937. The designs helped provide low-cost housing during the depression. FPL's "Techniques of House Nailing" instructed apprentice carpenters and homeowners who bought more than 100,000 copies from 1947–57.

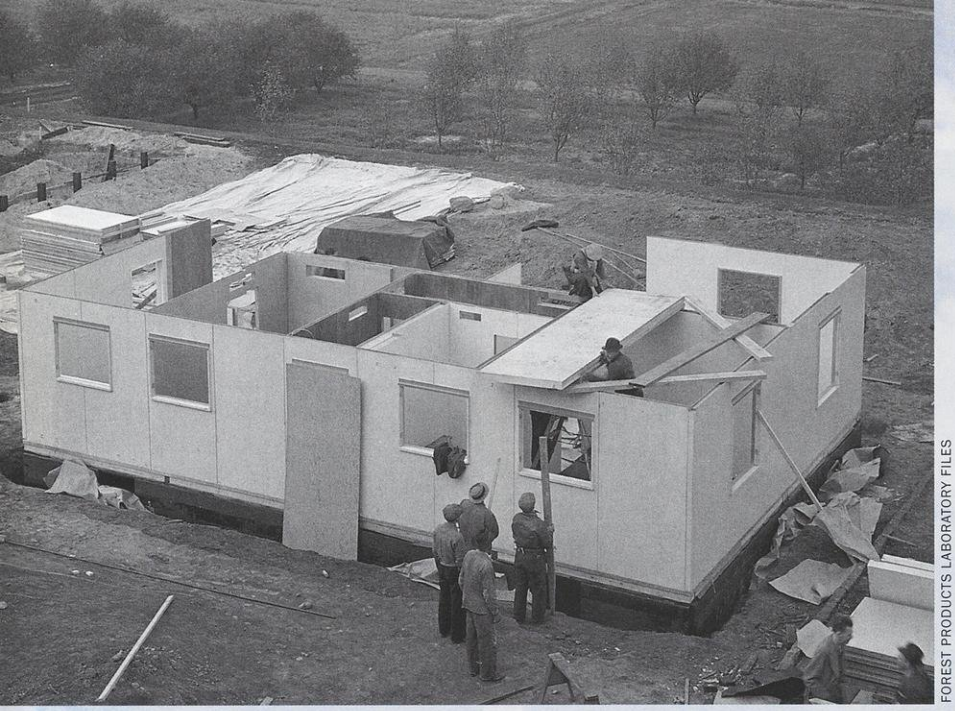
This FPL Center maintains the world's largest collection of wood samples (more than 100,000) and identifies wood samples for businesses, museums, individuals and public agencies.



Botanist Regis Miller and team identify more than 1,500 wood samples annually for research, forensics, forestry, building questions and more.



(BOTH PHOTOS) ROBERT QUEEN



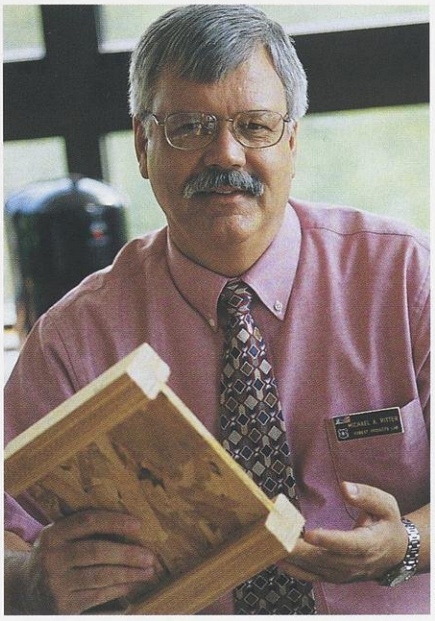
FOREST PRODUCTS LABORATORY FILES

FPL staff helped develop waterproof glues for plywood and constructed the first all-wood prefabricated house in 1935. The pre-fab concept was an important innovation that helped meet tremendous needs for low-cost houses in the post-World War II nationwide building boom.

(below) The house built at FPL's Advanced Housing Research Center demonstrates the proper use of new building materials as well as recommended construction methods. The house is both research center and showcase for consumers and builders alike who want to learn how to make homes more durable and economical while remaining energy-efficient and moisture resistant.

To contact FPL with a question about using or preserving wood, or to schedule a group tour of the Research Demonstration House or laboratory, phone (608) 231–9200, e-mail: mailroom_forest_products_laboratory@fs.fed.us, write Public Affairs, Forest Products Laboratory, One Gifford Pinchot Drive, Madison, WI 53726-2398, or visit the FPL website, www.fpl.fs.fed.us

FOREST PRODUCTS LABORATORY



ROBERT QUEEN

Deconstructing old buildings could conserve and reuse more than 250 million board feet of lumber from old U.S. Army bases alone. FPL staff is working on lumber recovery plans for more than 1,100 buildings at the Badger Army Ammunition Plant in Sauk County.
(right) Mike Ritter holds an I-joist, an engineered wood product that provides strong and rigid floor support.

"Not long ago, large logs from old-growth trees could be sawn into the thick, long, high-quality lumber required for beams and joists. Those trees aren't available anymore; we now rely on lumber from managed tree plantations and wood from smaller tree species."

Mike Ritter

More recently, FPL established an Advanced Housing Research Center (AHRC) in 1999 to lead to even more efficient use of available woods. Though trees are plentiful, renewable and recyclable, demand for building materials is equally strong.

Ninety-five percent of U.S. homes are still wood-framed, and homes are getting much bigger. In 1950, the average single-family home was a little less than 500 square feet; by 2000, homes averaged 2,226 square feet. Lumber use per home increased from about 11,000 board feet per home in 1962 to 14,000 board feet by 1998. The use of "structural panels" — plywood and oriented strand board (OSB) — quadrupled from 3,000 square feet per home to more than 12,000 square feet in the same time period. Total wood consumption climbed accordingly. From 1962 to 1998 lumber use for homebuilding jumped from about 14 billion board feet annually to more than 22 billion board feet; structural panel use skyrocketed from about four billion square feet to 19 billion square feet.

FPL is pursuing three strategies: One area of research aims to extend the useful life of wood products to limit water and wind damage. We are assessing better wood preservatives and coatings as well as testing construction techniques, Risbrudt said.

Second, we continue to look for ways to use forest products that traditionally were passed over by the construction trades and papermakers. For instance, OSB can be readily made from aspen and other softer woods. Oriented strand board is composed of thin wood strips laid at cross angles and glued with heat-cured waterproof adhesives. The resulting panels are strong like plywood but have no laps, gaps, grain or voids for added strength.

Third, we are much more serious as a society about reusing and recycling wood products to reduce the need to cut trees, Risbrudt said.

All three strategies have their place in our housing research, and all three have taken on a sense of urgency in the past few years, according to Mike Ritter, FPL assistant director and director of the AHRC."Not long ago, large logs from old-growth trees could be sawn into the thick, long, high-quality lumber required for beams and joists. Those trees aren't available anymore; we now rely on lumber from managed tree plantations and wood from smaller tree species."

Engineering wood products

To meet the nation's construction needs, FPL and others have developed varieties of manufactured or engineered wood products that have become standard in home building today. These include I-joists that combine an upright panel made of plywood or OSB with composite lumber. The top parts of the beams are made of thin strips of wood veneer that are glued and laminated together. Lumber for homebuilding can also be recovered by carefully deconstructing and salvaging old buildings such as decommissioned military bases scheduled for closure. FPL researchers are working closely with the U.S. Army, Habitat for Humanity and others to explore the possibility of salvaging millions of board feet of high-quality lumber that had been used to build thousands of barracks, warehouses and other buildings more than a half-century ago. Since the government has stopped maintaining many of these unused buildings, the lumber will deteriorate unless deconstruction begins soon.

FPL projects in Wisconsin

The Forest Products Laboratory has a long history of aiding Wisconsin's extensive forest management, wood products and papermaking industries. One early innovation came from a 1916 experimental pulping plant in Wausau. Researchers developed more efficient ways to mechanically pulp wood for newsprint. They also demonstrated that many species of woods could be substituted for spruce, which had become scarce and expensive. This reduced the papermakers' dependence on imported logs from Canada and expanded the market for homegrown Wisconsin pine.

FPL researchers also developed a process for manufacturing strong and more affordable corrugated boxes. The process created major growth opportunities for companies like Green Bay Packaging.

On a different note, environmentalist Aldo Leopold might never have come to Wisconsin or written his *A Sand County Almanac* if his employer, the Forest Service, had not transferred him from Albuquerque, New Mexico to Madison to serve as assistant director of the FPL.

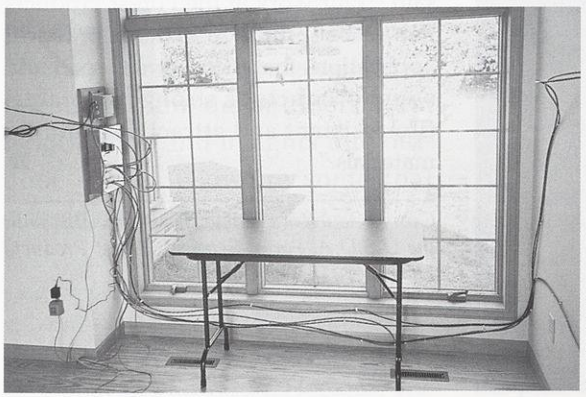
Currently FPL research engineer Dr. Robert Falk is working closely with the Wisconsin Department of Natural Resources and U.S. Army studying how best to remove about 1,400 World War II-era wooden buildings at the 7,354-acre Badger Army Ammunition Plant near Baraboo. As many as 1,100 of the buildings could be candidates for deconstruction, in which the buildings would be taken apart, piece by piece, to reuse as much of the material as possible, especially the lumber. Deconstruction holds promise to keep thousands of cubic yards of usable materials out of landfills. Falk and other FPL researchers are developing standards and engineering data to grade reclaimed lumber.

Battling moisture and mold

Protecting wood against moisture has been an FPL priority since the lab's founding. "The greatest challenge to ensuring a durable house is managing moisture," said Ritter. Moisture can come from leaky roofs or windows as well as from inadequately vented bathrooms or laundry rooms.

Home moisture has gotten more attention since expensive insurance claims and lawsuits raised public awareness about molds. In 2002, insurance companies paid out $2.5 billion in mold-related claims. At year's end, more than 24,000 claims and thousands of lawsuits were still outstanding. While excess mold raises health concerns like allergic reactions or may irritate asthma symptoms in sensitive people, most authorities agree there is less convincing medical evidence that building molds are deadly.

Probes embedded throughout the demonstration house measure moisture movement year-round. "The greatest challenge to ensuring a durable home is managing moisture," Ritter said.



ROBERT QUEEN

Mold is a superficial problem for wood; it appears on the surface and does not weaken the wood or pose structural problems. In fact, almost all buildings contain some mold. A University of Arizona researcher recently studied 160 houses in seven cities around the United States. Every house studied had mold somewhere.

Molds indicate that buildings have unwanted moisture. That moisture makes wood less durable by causing it to expand and contract, loosening joints and fasteners, or promoting the growth of certain fungi that cause decay.

Several factors contribute to the apparent increase in moisture problems in new homes. Builders are putting up larger houses that tend to have complicated roof designs with dormers, skylights and many valleys, corners and hips that require special treatment to prevent leaks. Some new building materials and technologies require more careful installation. In some designs homes are so tightly sealed that trapped moisture has little opportunity to dry out.

A testing ground for home improvement

To help remedy these issues, two industry trade groups, APA-The Engineered Wood Association and the Southern Pine Council, joined with FPL to build a unique research demonstration house on the laboratory grounds in Madison.

Each step of construction was videotaped for use in training carpenters and others in proper construction techniques. Eventually, more than 50 companies and organizations assisted in the project by supplying materials, appliances and equipment.

The house, which continues to be used for research, has moisture sensors throughout.

In addition to learning how moisture moves within the building, FPL's research will eventually lead to better management of that moisture by improving house design and construction as well as recommending procedures for operating the house's mechanical systems to manage air flow and humidity in finished homes, Ritter said. The four-bedroom, 2,200 square-foot house followed a standard contemporary design and was built by one of the Madison area's leading homebuilders. The house now sits on a small landscaped lot in front of FPL's headquarters building and is open to the public for scheduled tours.

Its unique features include cutouts in walls, floors and ceilings that show visitors construction details and materials such as finger-jointed studs and cellulose insulation. "The house design features a number of construction details intended to prevent unwanted moisture," said Ritter. The roofing material is a wood-plastic composite developed at FPL and made from recycled milk jugs and sawdust. The shingles contain additives to lessen the weathering effect of sunlight and are expected to last up to 50 years.

The house also features a wood foundation, constructed of pressure-treated southern pine lumber and plywood based on a concept developed at FPL. Such foundations may have several benefits. This one was built in the middle of a Wisconsin winter when it would have been difficult to build a masonry or poured concrete foundation. A wood foundation can also be insulated and finished to create additional dry, warm living space.

Most floors in the house are made of southern pine, though the kitchen is maple. One of the bedroom floors is made of wood salvaged from a deconstruction project and another uses small-diameter wood boards. Carpets are made from recycled plastic bottles.

Following the successful house collaboration, several wood associations and the FPL launched a Residential Moisture Management Network. The network is one more outreach tool to coordinate both research and information coming from government agencies and building trade groups, Ritter explained.

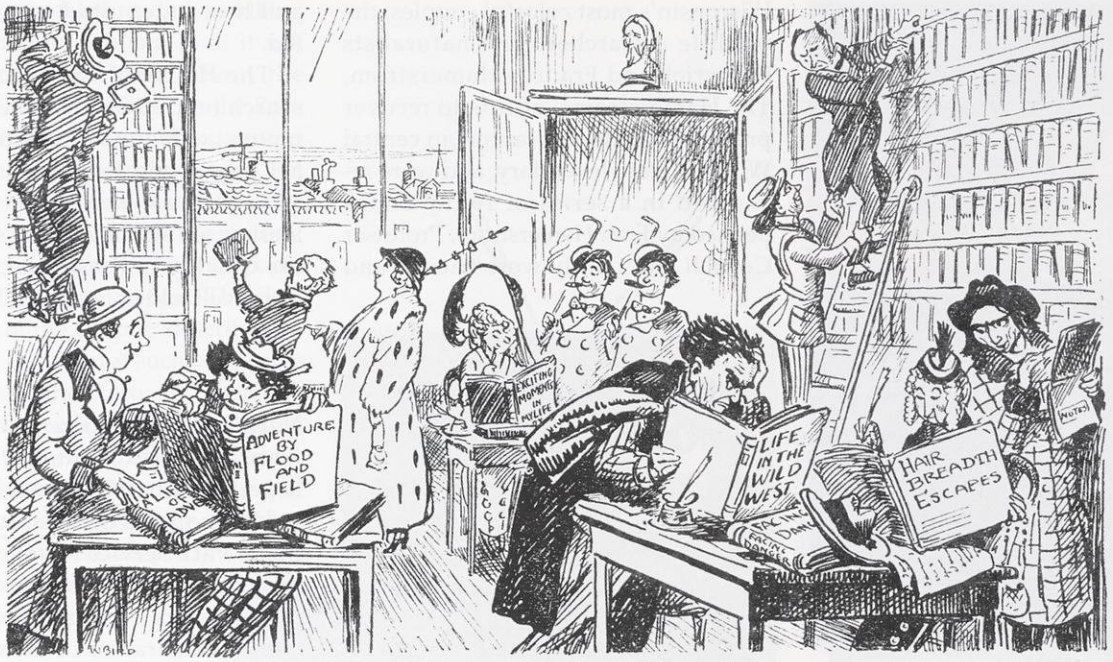
"Manufacturers and suppliers need to provide builders and homeowners with clear, consistent recommendations to manage house moisture in ways that lead to healthy, durable homes," Ritter said. "Our work at the Forest Products Lab will continue to look for practical applications that incorporate wood and wood products as stronger, durable, fire-resistant and attractive building materials."

ROBERT QUEEN

(BOTH PHOTOS) ROBERT QUEEN

(left) **Test panels will evaluate new wheelchair-friendly surfacing materials for possible use in playgrounds and parks.**
(below) **Rooms showcase a variety of flooring materials including small-diameter Douglas fir** *(shown here)*, **southern pine, maple and Douglas fir boards made from siding lumber** *(inset)* **from deconstructed old Army barracks.**

George Couch is a public affairs specialist with the U.S.D.A. Forest Service's Forest Products Laboratory in Madison.



Good reads and good times

Eight new books celebrate outdoor experiences, lifestyles and endeavors.

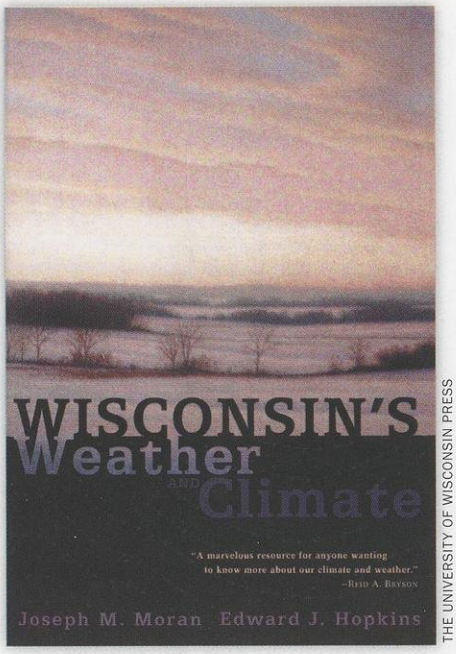
David L. Sperling

Aside from your letters, the nicest thing the mailbag brings is the occasional gift of new books. Under the plain brown wrappings, we find new offerings about Wisconsin, invitations to explore the outdoors, local biographies, and insights into outdoor issues. Here are some that crossed our desks in the last year.

Wisconsin's Weather and Climate, Joseph M. Moran and Edward J. Hopkins, The University of Wisconsin Press, 321 pages, $24.95, is primarily a reference for science students, teachers and weather buffs, but it is infused with interesting weather history and some appendices that provide fodder to fuel some decent debate at the local tavern or dinner table.

The hard science portions of the book describe the physical features that continue to shape Wisconsin. Season by season summaries chronicle the highs and lows, wet times and snows, hot, dry and humid times that shape our days and our sense of humor. Among the pleasant surprises for me are the condensed histories that explain the role weather has played in our rural history and the transitions from wheat and hops farming to rye, corn and soybean agriculture.

Sections of the history of weather observations were also interesting. It turns out that the first systematic nationwide weather observations were made by the Army Medical Department whose officers started keeping diaries of weather conditions (especially temperature and wind records) in 1814. Doctors at the time believed that diseases were strongly linked to weather and seasonal changes. In those days more soldiers'

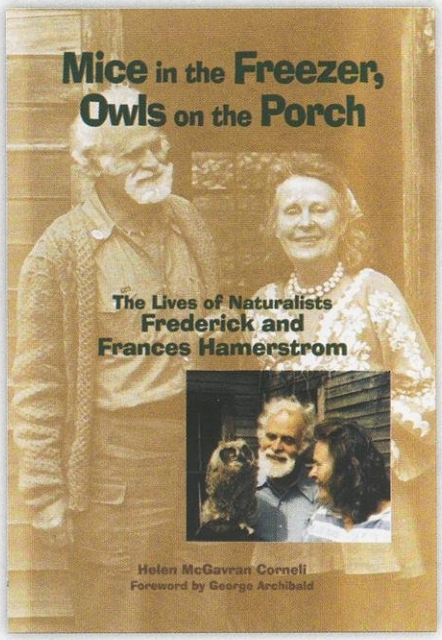


THE UNIVERSITY OF WISCONSIN PRESS

lives were lost to disease than combat. Weather records from the Army posts led to a nationwide network of weather observers organized by the Smithsonian Institution in the mid-1800s, succeeded by the Army Signal Corps. A daily map of the nation's weather developed in the decades thereafter as telegraphers were given incentives to forward temperature, wind speed and precipitation records every morning and night to Washington, DC.

Subsequent chapters examine the tools scientists use to gauge climatic conditions throughout time. Readers learn how pollen data, fossil exploration, sediment cores and a host of chemical core sampling can reconstruct our meteorological past. This exploration of past conditions also describes a vast coniferous forest that covered eastern and northeastern Wisconsin 11,000–12,000 years ago.

For those with a favorite or least favorite Wisconsin season, there are separate chapters that provide ample statistics to cuss the heat, cold, dry and snowy spells in the Badger State.



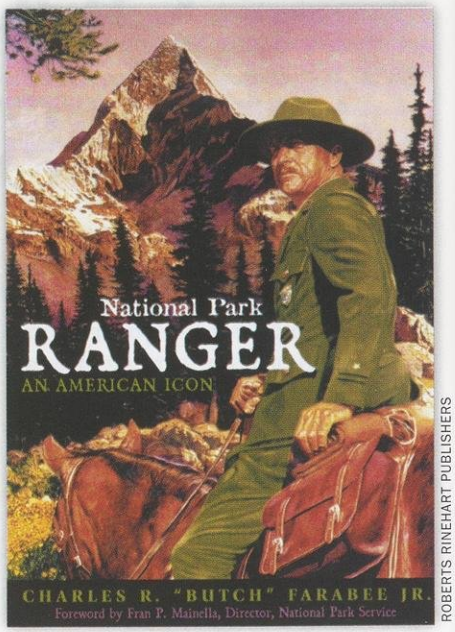
THE UNIVERSITY OF WISCONSIN PRESS

Mice in the Freezer, Owls on the Porch, Helen McGavran Corneli, The University of Wisconsin Press, 347 pages, $29.95, is a lively engaging memoir of one of Wisconsin's most colorful couples, the wildlife researchers and naturalists Frederick and Frances Hamerstrom. The Hamerstroms' efforts to recover prairie chickens and raptors in central Wisconsin are legendary, and were recounted in a series of funny books penned by Fran Hamerstrom. Professor Corneli and family were friends and close neighbors of the Hamerstroms when she lived in the Hancock area and later taught English at UW-Stevens Point. Through her friendship, interviews, extensive review of family papers, reminiscences from colleagues and distillations of published papers, Corneli has crafted a book that is both scholarly and a fun read.

She brings readers closer to the Hamerstroms in stories and anecdotes. They were an interesting couple and a study in contrasts. Fran's formative years were in Boston's high society circles, "Hammy" was a student at Dartmouth when they met in 1928. We follow their travels as university students in Madison, graduate work in Michigan, the war years as Hammy was shuttled around the country to different posts and back to Wisconsin. We marvel how people living such simple, frugal lives arranged to send hundreds of CARE packages to scientific colleagues in Europe devastated by postwar poverty, and how ingenuity kept their family fed.

The Hamerstroms' decades of research on prairie chickens, studying raptors, working with farmers to manage grasslands, battling bureaucracies and living a somewhat eccentric rural lifestyle are all laid out and speed by far too quickly in these pages. This is a story well told of lives well lived.

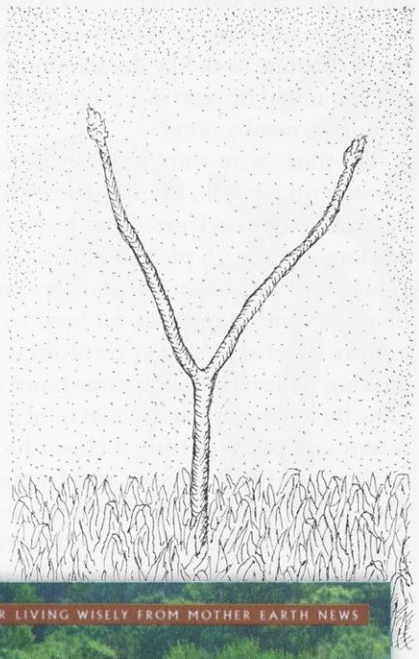
National Park Ranger: An American Icon, Charles R. "Butch" Farabee, Jr., Roberts Rinehart Publishers, 182 pages, $18.95, explores the history of the National Park Service's rangers. It's told by a former ranger who spent more than 40 years in ranger service, so it is more a celebration of the colorful aspects of the job than a balanced look at the challenges of keeping America's premiere playgrounds from being loved to death. Farabee is a big fan who unabashedly opens with a description of rangers as "an amalgam of Jedi Knight, favorite teacher and Smokey Bear."

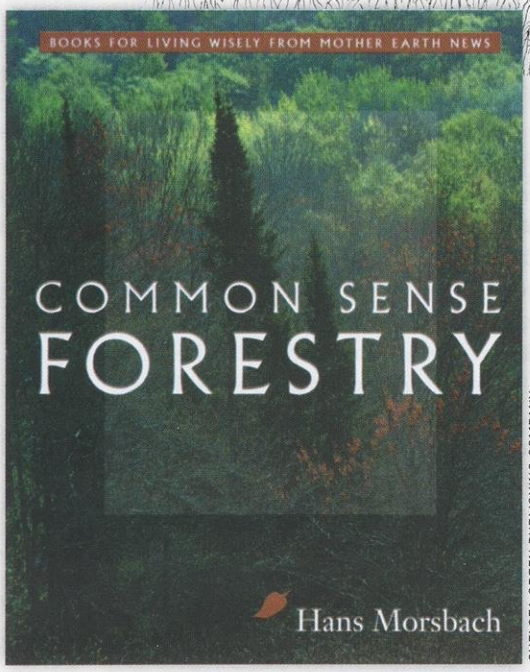


ROBERTS RINEHART PUBLISHERS

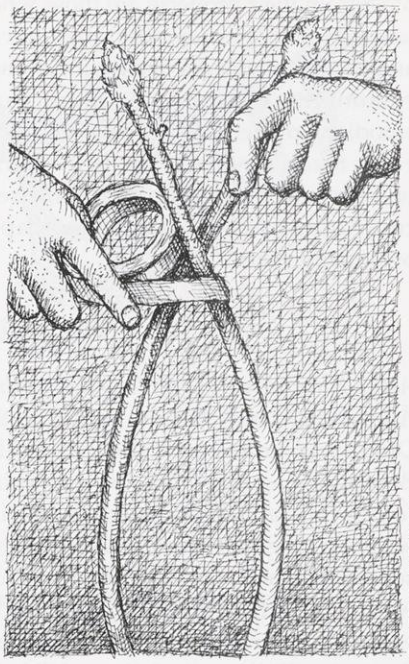
The book is fun, chock-full of pictures and interesting anecdotes as the narrative traces the creation of the Ranger Service and the National Park system from 1864 when Yosemite Valley was still a state park. Most stories in the paperback book run a page or two, so this is an

ideal book for bedside reading or killing a few moments. You can pick it up, browse and learn tidbits about the "Greats of Green and Gray" in the Ranger Hall of Fame, or read about ranger danger — accounts of rangers who lost their lives due to natural disasters, fighting fires, responding to rescues, getting whacked by bootleggers, chasing poachers and battling drug dealers. The closing portion of the chapter describes efforts to fight terrorism at such vulnerable monuments as the Statue of Liberty. A final chapter describes a bit about how to become a ranger and enjoy the ranger life. Indeed, this might make an especially interesting read for high schoolers considering careers as park rangers or interpreters.





CHELSEA GREEN PUBLISHING COMPANY



ROBERT W. HUTCHISON

Good tip: Taping a forked branch strengthens and straightens the branches. Later, cut the weaker one to leave a straighter leader.

Common Sense Forestry, Hans Morsbach, Chelsea Green Publishing Company, 229 pages, $29.95. I took a shine to this book, despite my natural inclination to view forestry texts as academic and stiff. This one was really different and constitutes an eminently readable how-to text for the small woodlot owner or small-scale tree farmer.

In these times when larger holdings are being split up and sold in lots of ten to a few hundred acres, I would consider this book a valuable companion if I owned a small chunk of countryside. Morsbach is a Chicago suburbanite who bought himself a few hundred acres in the rolling wooded hills outside Cazenovia in Richland County, truly one of my favorite areas of the state. He shares tips he has picked up the hard way after more than 25 years of working his woodlot and planting "tens of thousands of trees."

The style in the book is conversational and congenial, and though he has definite opinions, he never pontificates and the style is never stuffy. To the contrary, each section is broken up into very small, digestible pieces and you could pick and choose sections as you face the *problem de jour* on your few happy acres. There are practical tips here for creating a diverse forest that should provide timber, wildlife habitat and years of enjoyment. He offers practical lessons that also extend beyond the trees to establishing good relations with local foresters, scratching out a business strategy and tax planning.

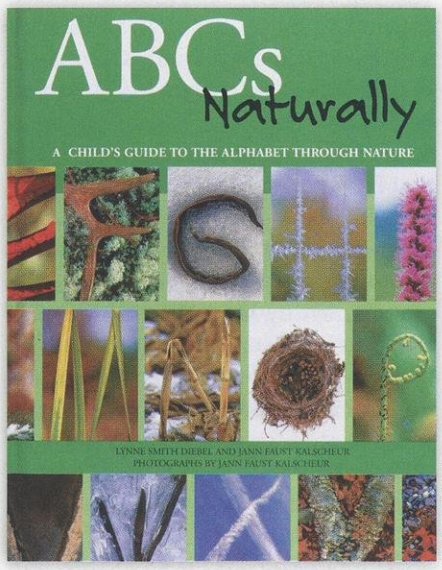
Morsbach also has a real sense of humor about his own acreage that had been badly eroded by a tenant farmer who didn't make the time to practice contour farming on hilly land. He is also blunt about his financial failures trying to raise cattle and bees before turning to trees. These were lessons learned bit by bit, through trial, error and observation by a family that mainly had time for the farm on holidays and weekends.

He takes us through many steps that I imagine most new woodlot owners will face — How to match your expectations to the land. How to work with nature and natural forest succession. Learning the value of different tree species. Practical tips for planting trees, seedlings and direct seeding. Solid pruning advice. How, why and when to thin trees. The value of establishing "old-fashioned" hedgerows. When small clearcuts may be warranted. Understanding and considering government incentive programs, and recommendations for useful books, equipment and hand tools for the woodlot owner.

The book is also liberally sprinkled with short two to three paragraph comments about the topic at hand as well as some interesting profiles of tree growers that Morsbach views as forest mavericks for the planting, harvesting and management experiments they are conducting.

Morsbach regularly revisits his major theme that woodlot owners who get the

most from their property are those who learn to simply enjoy what they have and become members of both their new communities and the community of woodland owners. He encourages owners to take a long view on their return on investment as they grow a bit wiser cultivating trees and a rich landscape over many years.



TRAILS BOOKS

ABCs Naturally: A Child's Guide to the Alphabet Through Nature, Lynne Smith Diebel and Jann Faust Kalscheur, Trails Books, 80 pages, $16.95. We met photographer Jann Kalscheur when she was hatching this idea and are glad to see it published. This is a picture book with rhymes that introduce young readers to the natural world through shapes that naturally form the letters of the alphabet. Kalscheur's crisp photos in rich colors show how we can all become alphabet hunters looking for letter shapes where vines snake across the ground, ferns curl in the sun and animal tracks are trapped in mud and ice. My personal favorites are the shed white-tailed deer antler on reindeer moss that forms the letter F and the icy backlit windowpane that forms the letter H in frost.

Each letter is accompanied by a simple quatrain that is fun to read aloud or would amuse young readers learning to read to themselves. I liked the fact that all the images show items and scenes we can readily see in Wisconsin. Even the serpentine neck like the flamingo at the zoo might be seen in a swan gliding through a nearby pond.

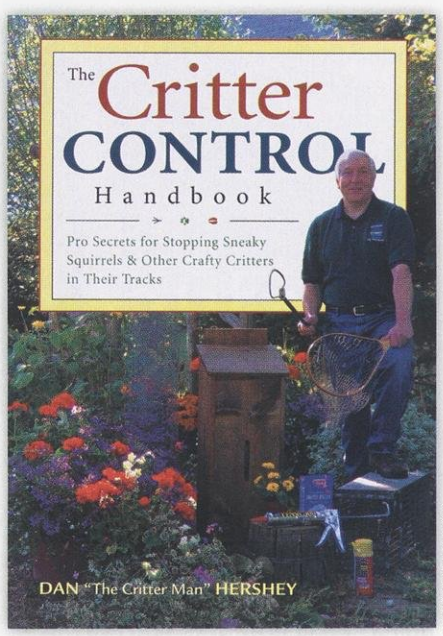
For those who want to kick the discussion up a notch, there's interesting narrative in the back providing facts and folklore about each pictured item. Both Diebel and Kalscheur are teachers and there are hints in the back for becoming a more careful observer outdoors by looking wider; changing your point of view by looking up and down or at different angles; or getting a closer look with magnifying glasses and frames. Classroom teachers and home schoolers get hints for a host of lessons, sketchbooks and collections spawned by alphabet hunts.

The Critter Control Handbook: Pro Secrets for Stopping Sneaky Squirrels & Other Crafty Critters in Their Tracks, Dan "The Critter Man" Hershey, Voyageur Press, 176 pages, $15.95 paperback. Dan Hershey has spent more than 20 years crawling under porches and climbing up shaky ladders helping homeowners evict wildlife that got a little too close for comfort. That said, Hershey takes a safe, sane and stepped approach to solving wildlife "problems."

Among the lessons, experience taught Hershey that many people have a tough time identifying the kind of critter that is gnawing at, squeaking in or making a nest in their home. He provides tips that will help you hone your powers of observation whether your primary interest is wildlife watching or getting rid of the noisy neighbors. He advises readers to judge the animal's size, color, scat, tracks, nest, sounds and smell. As a clue to controlling an animal, he gets us thinking about what animals eat, how they eat and where they live.

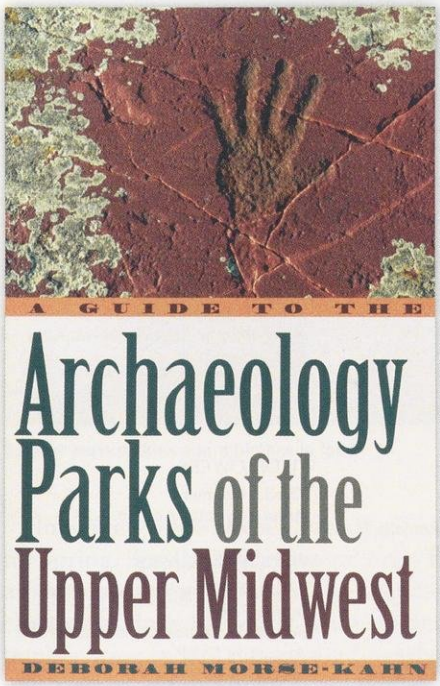
His humane approach stresses taking the least invasive steps possible to keep animals out. We learn about deterrents, repellents and a host of nonlethal solutions before considering traps, poisoning, fumigation or the "lead headache" solutions. Then Hershey provides step-by-step advice for removing 26 animal species most likely to claim squatters' rights in your domain. For each species, Hershey reviews the damage the animal can do, repellents, deterrents, live capture methods, lethal controls, best baits to lure an animal in, handling and relocation steps, and diseases the invader can carry. For those who want a hired gun to do the dirty deed, Hershey offers tips on hiring a contractor, asking for references, considering liability insurance and asking how and where the trapped animal will be relocated or disposed of.

The book is also full of quick ideas that are worth a try. Without giving away all his tricks, we'll share a few. Hershey offers an inexpensive way to make chimney caps at a small fraction of the cost to buy them. He tells readers to hang snap traps against a wall a few inches off the ground. That way a mouse has to reach up on its hind legs and stretch across half the trap to reach the bait, which is almost always a fatal mistake. He also notes that many of the sprays used to control bees are good conductors of electricity, so one needs to be really careful which product to buy if the bees are near electrical wires. (Hershey dissuades chemical usage and recommends lots of alternatives.)

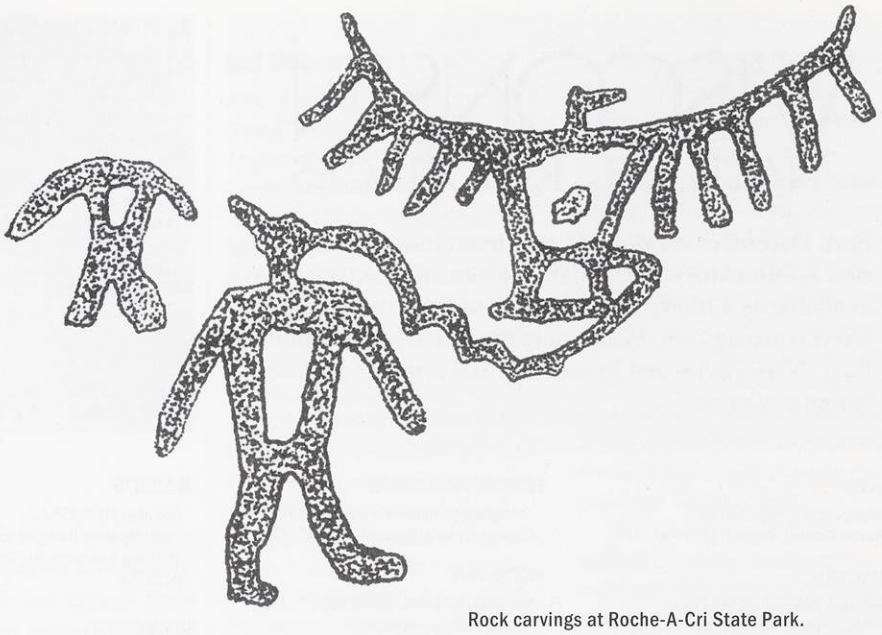


VOYAGEUR PRESS

Consider adding this one to your shelf of home improvement references.



ROBERTS RINEHART PUBLISHERS *(RIGHT)* INCREASE A. LAPHAM . COURTESY OF THE PUBLISHER



Rock carvings at Roche-A-Cri State Park.

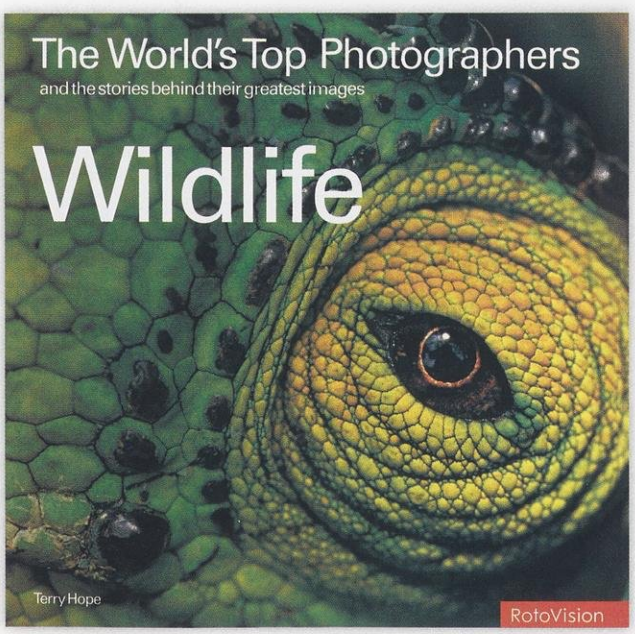
A Guide to the Archaeology Parks of the Upper Midwest, Deborah Morse-Kahn, Roberts Rinehart Publishers, 157 pages, $18.95. Imagine our surprise to learn that 40 of the 73 sites in this paperback of archaeological attractions are in Wisconsin. Some are well marked and offer trail guides, others are all but invisible on the landscape and you'll have to hunt using the directions provided. Speaking of hunting, the map describing the location of each archaeological site is tucked just inside the back cover of the book.

I'd keep this book on hand to build short stops at these places on your travels. The effigy mounds and unmarked memorials mentioned remind us that Native American cultures knew the Wisconsin lands and settled here for centuries before the relatively recent waves of European immigration, statehood and westward "pioneers."

The World's Top Photographers and the stories behind their greatest images: Wildlife, Terry Hope, RotoVision, 176 pages, $35. Okay, so this isn't a book of Wisconsin photos, but I couldn't help myself. This coffee table-type book contains one heart-stopping, eye-popping wildlife image after another on each page. The colors, the sharp focus, the lighting, the textures in each shot are fabulous. The changing perspectives as we move from wide panoramic shots to eyeball-to-eyeball close-ups are spectacular.

Equally engaging are the short descriptions of each photograph, short biographies of the photographers and the photographers' stories of how they came to capture each of these shots. Here you will see a small tussac bird square off with a sea elephant on the Falkland Islands, insects more elegant and bizarre than any sci-fi invention, elephants from on high, ants from below, orphaned orangutans from above, polar bear families in the setting sun, penguins peeking out from a feathered belly, soaring osprey and the delicate interplay of a butterfly and a Brazilian caiman. The journeys underwater, over desert dunes, through torrential rain or across the frozen arctic will whisk you away on a worldly exploration.

Aspiring photographers will learn a lot about the field life and diligence it takes to capture such moments. The rest of us will just marvel and express thanks for being taken on a wonderful ride to dramatic and exotic places.



ROTOVISION

David L. Sperling edits Wisconsin Natural Resources *magazine.*

WISCONSIN NATURAL RESOURCES

Each December we publish an annual index of our stories. A cumulative index of our stories 1977–2003 is also available as a file you can download from our website: 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!

continued from page 2

ROBERT QUEEN

Smaller male catkins adorn birches in fall.

In winter, white birches already give evidence of preparing for spring. Small, slender lateral buds are spaced alternately along zigzagging branches. The branch ends are tipped with clusters of three inch-long male catkins that formed in September, long before the serrated heart-shaped leaves turned pale yellow and dropped.

Small green pistillate or female catkins (composed of bracts and numerous minute flowers) will form in early spring and by April into May, the male catkins will lengthen to about three inches, open and release pollen. After the wind-carried pollen lands in the receptive flowers and fertilizes them, the catkins seal up so seeds can develop. In about four months, beginning in late August and progressing through October, those catkins disintegrate, releasing thousands of individual seeds, each less than a millimeter long. They are released as stacks of samaras or winged fruits.

About that white bark — as each tree grows, the thin, tough bark curls back on itself and peels into papery-thin layers that gives rise to white birch's alternate name, paper birch. Below recently-peeled bark is a colorful palette of muted pinks and oranges that whiten with age. Although it is tempting to peel the bark and watch it separate from the trunk, please resist the temptation. This harms the tree and increases the possibility that insects or fungi can invade, attack and weaken it. Each tree sheds its bark when ready and has replacement bark underneath. When bark is removed prematurely, the trunk turns black.

In addition to papery curls, fine, horizontal black lines of up to 1½ inches long, randomly mark the white bark. These lines are lenticels, openings in the bark to allow for gas exchange.

When I gaze upon white birch, several questions intrigue me. Why is the bark white? Is the color an adaptation for survival? If so, how? Also, how does this fragile-looking tree with the thin bark survive our long, cold winters? These unanswerable questions are worth contemplating as you gaze upon a stand of white birch, silhouetted against a clear blue sky on a crisp winter day.

Anita Carpenter writes from Oshkosh. Winter is her favorite season.

BAT IN HAND

After reading "Respect the night patrol" by Karen Kvool in the August issue, I thought readers would enjoy this story.

I was sitting on the shore in front of our cabin just outside Mercer with my neighbor one late afternoon in early May. A little brown bat (*Myotis lucifugus*) started to fly around and dip down picking insects off the surface of the water. On about the tenth pass, it must have detected a morsel about six feet from shore, but on approach it got caught in the drink and had to swim. I ran over and found the bat trying to crawl onto a plant that wasn't too supportive. I extended a helping hand and a bare arm, which the little creature took advantage of immediately. As I walked toward my neighbor, the bat crawled up my arm to my bare shoulder, took off and landed on the trunk of a pine tree.

I now feel compelled to build and erect a few bat houses at home where the habitat is dwindling.

Peter J. Schmidt
Port Washington

THUMBS UP & DOWN ON DOVES

Good sense requires that I write you on the subject of mourning doves. Using the logic of your writer, we should have a season on robins, bluebirds and probably sparrows. If it takes three doves to make a meal, it would take six robins, 16 bluebirds and about 30 sparrows. It makes no sense to slaughter one of the most docile and beautiful songbirds in our state regardless of what 39 other states do.

I am reminded of the old phrase that "Those who ignore history are doomed to repeat its mistakes."

Arthur F. Kind
Eau Claire

I applaud DNR for bringing a mourning dove hunt to Wisconsin. Despite the legal wranglings from animal rights groups, the sportsmen and women of Wisconsin prevailed.

I took my son with me opening day to the Richard Bong State Recreation Area in Kenosha. As we walked I explained about the habitat doves use and how to identify doves from other birds. We saw about a dozen birds. I was able to take shots at about half that number. Though we failed to harvest any doves, it was a very positive experience for both of us.

Though we could have walked the same area and watched birds without hunting, I thought it was important that my son understand that meat and poultry do not grow on little styrofoam trays in the back of supermarkets. As for the fears that sport hunting will hurt the dove population, I say not very likely. I am a class AA trapshooter and I went 0 for 6 shots at these speedy little game birds.

Ron Stresing
South Milwaukee

I was saddened to see the dove hunting article in the most recent issue, I am not an anti-hunting maniac. In fact, any sensible person understands the need for a deer hunting season. The thought of blasting a beautiful mourning dove out of the air with a shotgun is pathetic to me. Any individual who participates in such an endeavor needs their head examined…I have a difficult time making a connection between conservation, which benefits all citizens and the slaughter of a species for the benefit of a few.

James Rosnow

I am surprised that no one has mentioned the bonding with family and friends and mutual enjoyment of nature that dove hunting can bring to a hunting party. I am 87 now and some of my happiest recollections center on the experiences I had relating to hunting. In today's rush-

COMMENT ON A STORY?

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

ing world, there are too few contacts with my family and friends. Dove hunting makes for good life experiences.

Paul Poreti
Webster

OVERSEAS RESPITE

Greetings from Kuwait and thanks for the box of Wisconsin Natural Resources magazines you sent. Everyone has enjoyed reading them. I did have to endure a little bit of grief, however. My company is based out of the Twin Cities and most of its members are Minnesotans. There is a little rivalry between them and the ten of us from Wisconsin.

Richard Bark
(Sgt. Bark is a DNR ranger from Copper Falls now stationed in Kuwait.)

REMEMBERING LEROY LINTEREUR

We have just returned from two weeks vacation to find the August issue with daddy's article on spiders! ("A world in a leaf.")

My dad was working on a group of spiders the day before he had a heart attack. They were perched in an examining dish next to his microscope. When we were in the field with him, we had opportunities to examine spiders with pocket lenses. Dad passed on an "electricity" of excitement and curiosity to all of us. We were so lucky to be his children and get those first-hand teachings at their best. This article did what he did – offer us an exciting look into our natural world that was never very far away and available for connection.

Thank you.

Judith Lintereur Johnson
Marinette

KEEN CATCH

Karen Kvool did a very nice job in her bat article, "Respect the night patrol" (October issue), but there was a major error. We do not have Keen's bat in Wisconsin. The correct bat that was missing is the northern long-eared bat *(Myotis septentrionalis)*. The Keen's bat *(Myotis keenii)* is found in the northwest part of the state of Washington and farther north along the Pacific Coast.

Ken O. Bowman
Bat Conservation of Wisconsin, Inc.
www.batcow.org
Sun Prairie

The error was ours and is also wrong in a listing of Wisconsin bats in the handout "Bats: Information for Wisconsin Homeowners."

Here's a profile of the northern long-eared bat. This appears to be a more solitary member of the Myotis genus. The northern long-eared is a hibernator that, beginning as early as August, will often spend 8–9 months in caves or mines that are cool and moist. Long hibernation in protected areas leads to a long life. Specimens more than 18 years old are not uncommon. This bat really likes to hole up in tight crevices only leaving its nose and ears exposed. The bat forages on forested hillsides and ridges rather than near water. It is a voracious bug-eater, downing a wide variety of insects that fly at night. The northern long-eared bat is found throughout Wisconsin. Its range stretches from the Atlantic Coast west to British Columbia and is found in the U.S. from the Eastern Seaboard west through the Dakotas and south to the Florida Panhandle.

DOWN THE COAST

While we are at it, the photo on page 5 of our October special insert "Enjoy and protect Wisconsin's Great Lakes," shows a tree-lined shore of the North Point area of Sheboygan, not Two Rivers. We heard from a few past and present Sheboyganites with fond memories of this peaceful stretch of the coast.

BARRENS' FRIENDS

Your October back cover feature on the Solon Springs Sharptail Barrens State Natural Area is greatly appreciated. This wonderful area is known locally as the Douglas County Wildlife Management Area, or more simply, the "Bird Sanctuary." For those readers who might be interested, the 4,000-acre property includes areas for bird watching, berry-picking, picnicking and field dog trials in areas that are not used by sharp-tailed grouse.

Thanks for helping to increase public awareness of this irreplaceable ecosystem.

Scott Peterson
Friends of the Bird Sanctuary

Museum peace

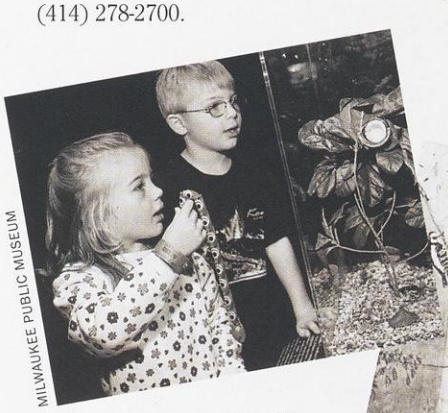
When the whole family gets together for the holidays it isn't always easy to find activities to engage the entire group. Bookish members of the clan want contemplative time. Those who can't sit still itch for some live action. Others are inclined to recline in front of the tube.

A visit to a Wisconsin museum just might help keep the peace. Most museums offer more than enough detail to satisfy the bookworms; lively videos to illustrate topics for those who learn by watching; and plenty of interactive encounters for the action faction.

Here are a few of the many museums and exhibits open around the state. For more, see the Wisconsin Department of Tourism website, www.travelwisconsin.com

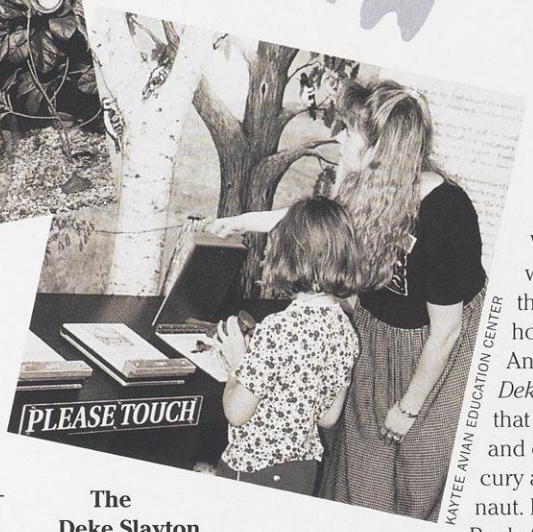
Slither on over to the **Milwaukee Public Museum** and spend a few hours in the company of "Reptiles: The Beautiful and the Deadly," a special exhibit in which visitors can study reptile behavior and examine reptilian anatomy scale by scale, scute by scute. Reptiles have lived on earth for more than 200 million years; this tenacious and fearsome class of vertebrates commands the respect and awe of lesser creatures with backbones but no spine, *aka* us quivering *Homo sapiens*. Live reptiles who'll savor Milwaukee's scent with their forked tongues include a Burmese python, an Asian cobra, and a Gaboon viper with fangs that could puncture a snow tire. Not to be missed are the Nile crocodile and monitor lizard feeding sessions at 11:15 a.m. on Mondays, Wednesdays and Saturdays. (Puts a whole new spin on holiday dining.) Live massasauga and timber rattlesnakes — the only rattlers indigenous to Wisconsin — add some local color, as does the alligator snapping turtle, the largest freshwater turtle in North America. Altogether more than 20 cold-blooded species will be represented, adding an extra chill to December's brisk air.

"Reptiles" runs through January 5. Admission: $6.75 adults; $5.50 seniors; $4.50 children. The museum is located at 800 W. Wells St., Milwaukee. On the web: www.mpm.edu Phone: (414) 278-2700.



MILWAUKEE PUBLIC MUSEUM

If reptiles make your blood run cold, perhaps a visit to the **Kaytee Avian Education Center** in Chilton will let your spirit soar. Thirty exhibits invite children and adults to explore, investigate and discover the fascinating world of birds. Enjoy the beauty of local and exotic live birds, and observe the activity of new life in the center's hatchery and nursery. Avid bird watchers will appreciate the exhibit on how to plant and manage backyard bird habitat. The center is open Thursday, Friday and Saturday from 9 a.m. to 5 p.m. Admission: $2. Address: 585 Clay St., Chilton. On the web: www.kaytee.com Phone: (920) 849-2321.

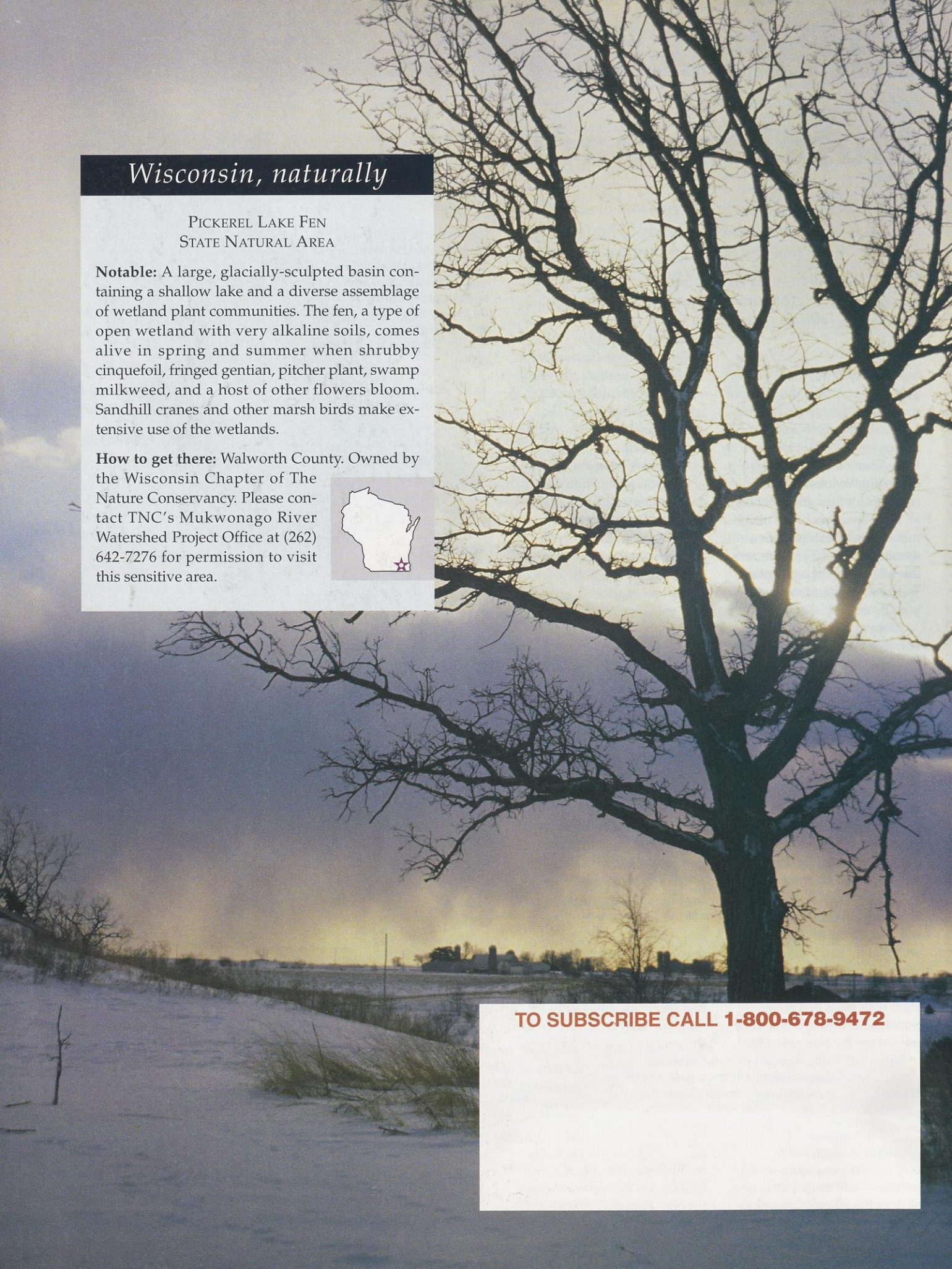


KAYTEE AVIAN EDUCATION CENTER

DEKE SLAYTON MEMORIAL SPACE & BIKE MUSEUM

(clockwise from top) **Let your family lift-off at the Deke Slayton Space and Bike Museum. Take a hands-on trip to the Kaytee Avian Education Center. Let a snake meet a fake at Milwaukee Public Museum's Reptiles exhibit.**

The Deke Slayton Memorial Space and Bike Museum in Sparta promises to offer a "fresh look at the past century's use of science to enrich our daily lives." The museum's *American Cycling Collection* features more than 50 American bicycles, including an 1870s Pennyfarthing high-wheeler and a bike built by the Wright Brothers in the 1890s. Speaking of "the boys," there's also a quarter-scale model of the first Wright flyer. Other displays in the *Early Aviation* highlight western Wisconsin men and women who built their own aircraft at home in the 1920s. And you can see *The Deke Slayton Collection* that reflects on the life and career of the Mercury and Apollo astronaut. Don't miss the Rockets & Sprockets gift shop. Open in winter, Monday to Friday, 10 a.m.–4:00 p.m., Saturdays by appointment. Admission: $3 for adults; $1 for children 6–15. Address: 200 West Main St. (in the historic Masonic Temple building), Sparta. Phone: (608) 269-0033. Website: www.dekeslayton.com.



Wisconsin, naturally

PICKEREL LAKE FEN
STATE NATURAL AREA

Notable: A large, glacially-sculpted basin containing a shallow lake and a diverse assemblage of wetland plant communities. The fen, a type of open wetland with very alkaline soils, comes alive in spring and summer when shrubby cinquefoil, fringed gentian, pitcher plant, swamp milkweed, and a host of other flowers bloom. Sandhill cranes and other marsh birds make extensive use of the wetlands.

How to get there: Walworth County. Owned by the Wisconsin Chapter of The Nature Conservancy. Please contact TNC's Mukwonago River Watershed Project Office at (262) 642-7276 for permission to visit this sensitive area.