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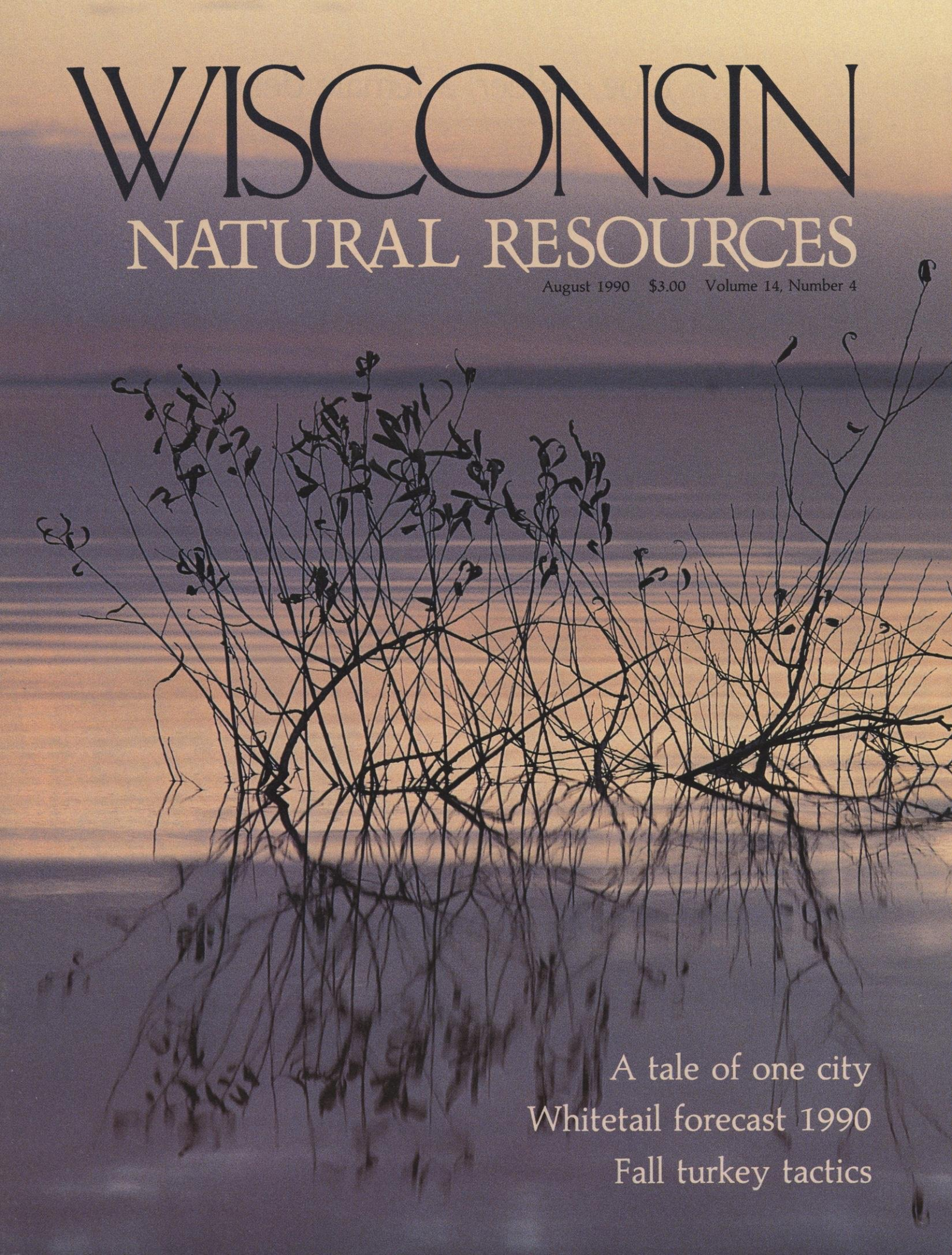
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WISCONSIN

NATURAL RESOURCES

August 1990 \$3.00 Volume 14, Number 4



A tale of one city
Whitetail forecast 1990
Fall turkey tactics

Doe, a deer, a female deer?

Keith R. McCaffery

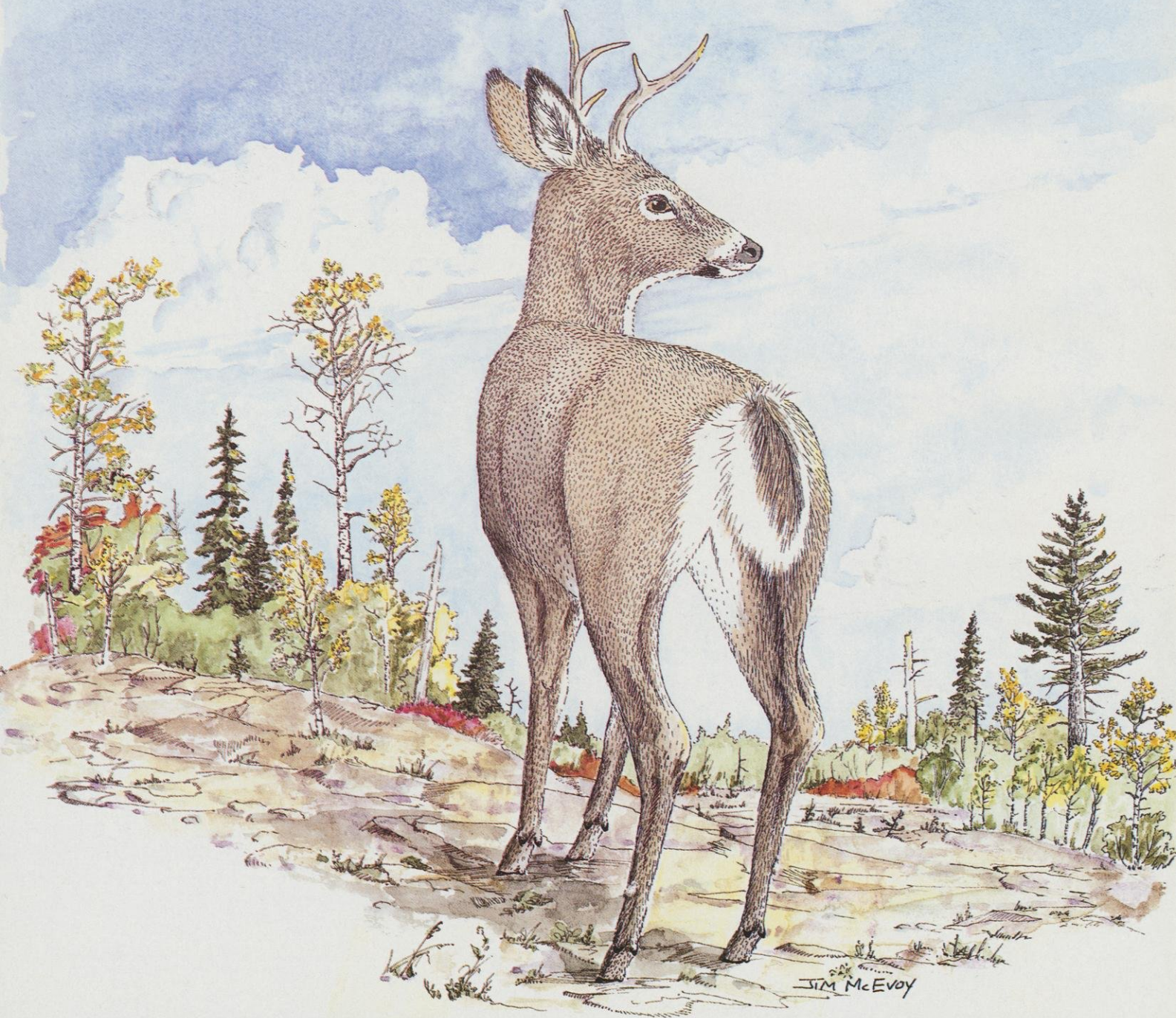
Do white-tailed does grow polished antlers? During the past several years a few cases have been verified, and I thought readers would be interested in this unusual occurrence.

The first report came from Wildlife Manager Bill Meier of Merrill during the 1982 deer hunt. Indeed, an antlered doe was taken in Marathon County by Mary Hrebik, formerly of Mosinee, Wis. Hrebik's eight-point doe had polished antlers, but the left one was somewhat malformed. The doe was aged as 3.5 years old and had a chest girth of 45 inches, suggesting a dressed weight of more than 200 pounds — hefty for a doe!

The second antlered doe was shot in Douglas County last year by Matt Yeske of Edgerton, Wis. The deer was aged at the Minong registration station as 2.5 years old and weighed 167 pounds. Its antlers were polished and had seven points. The left antler shed when the doe fell.

Antlered does are not very common; we've never kept frequency figures in Wisconsin. Back in 1963 a Michigan DNR deer researcher, Larry Ryel, reported 20 verified cases of antlered does in Michigan between 1951-61. That averaged fewer than two per year. Furthermore, in all 20 cases the antlers were in velvet and at least 18 of them were "buttons" or spike-antlered does. The Michigan re-

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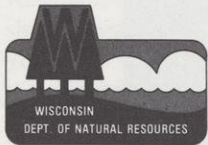


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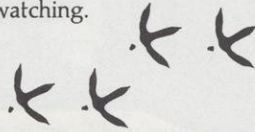
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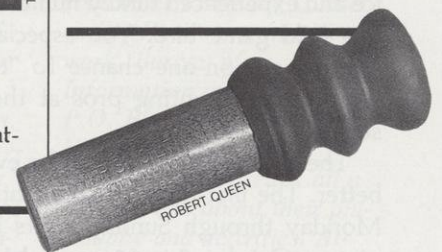
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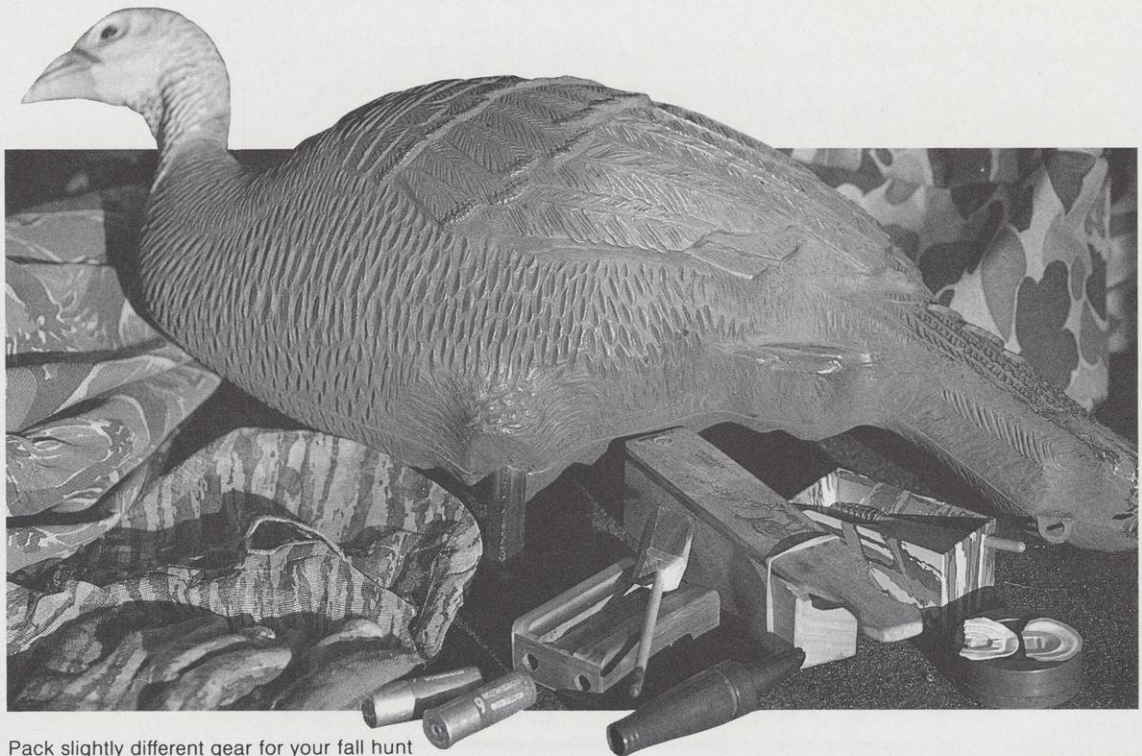


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A new market for the call of the wild?



ROBERT QUEEN

Pack slightly different gear for your fall hunt and leave your decoy at home.

Fall turkey tactics

Talking turkey in fall is a whole 'nother game from the springtime. Heed these tips to hunt or watch gobblers, hens and jakes.

Ray Kyro

Congratulations Wisconsin turkey hunters and watchers! You made our first fall season a safe and successful one. You logged thousands of hours hunting or just looking for birds, and we heard you had a great time. You bagged 1,570 birds in eight zones with only one shooting accident. Your attention to safety and respect for private property have set an enviable example for other hunters.

You told us you appreciated the many free clinics to reintroduce novice and experienced turkey hunters to this wild game bird. You especially like the one-on-one chance to "talk turkey" with hunting pros at these sessions.

The fall 1990 hunt should be even better. The first of three consecutive Monday through Sunday hunts begins on October 8 in 12 zones. More of you will get a chance to stalk a wild turkey. Permits for the fall hunt will increase from 7,260 to 12,465.

Whether you hunt or watch wild


turkeys, I hope the following fall tips and tactics will pique your interest and guide you through another safe, exciting outdoor experience.


Safety: Wild turkey hunting is considered a rather dangerous sport because camouflaged hunters blend into the landscape, set up realistic decoys and make realistic calls that attract other hunters as well as birds. Fall turkey hunting is potentially much more dangerous than spring hunting as many more hunters and other outdoor enthusiasts are afield. Seasons for quail, rabbit, fox, partridge, raccoon, ruffed grouse, sharp-tailed grouse, waterfowl and the early bow season for deer overlap with the turkey season. Woods and fields are also full of hikers and bikers enjoying fall foliage and birders stalking fall migrants.


Considering the competing interests, fall turkey hunters need to be especially safety-conscious. Statistics


show more accidents happen when hunters practice "ambush hunting," wear dark camouflage clothes or wear other dark clothing. We'll touch on both of these hazards in this article.


The following five tips should be gospel for fall turkey hunters:

 Select a hunting site with a clear view for at least 40 yards to the front and both sides. If you suspect another hunter is too near, say "I'm over here!" Announce your location to anyone coming your way.

 Select a tree that's wider than your back for a hunting site. You'll feel better knowing your back is protected at all times.

 Dress for safety — no red, white, or blue clothing or equipment that can look like wild turkeys. It's OK to blend with your background, but remember, the darker your clothing, the more you'll look like a turkey.

 Be sure of your target and what is beyond it. Don't shoot unless you're absolutely certain your shot will strike in a safe area.

 Don't shoot at flying or running birds! If you haven't seen a bird all day and one flies by, it's tempting to draw a quick bead and shoot. These shots produce more crippled turkeys and you likely haven't taken the time to scan the area for other hunters.

Trespass: It's illegal to hunt any fenced or agricultural private property without expressed permission of the landowner or manager (Sec. 943.13, Wis. Stats.). Most people recognize a fenced property boundary, even when they don't heed it. Agricultural lands include all acres that are cropped or grazed. Most lands in the turkey range are privately owned, and you must get permission to hunt there.

Many public hunting lands are open to turkey hunting, but check with county, state or federal officials about the parcel you intend to hunt. Some lands DNR leases are open to all hunting except deer and turkey hunting.

Regulations: Fall 1990 turkey hunting regulations will be printed separately from spring rules and will be mailed to everyone receiving a turkey hunting permit. To date, the following regulations have been firmed-up for the fall hunt: The legal bag is one turkey of any age or either sex. Birds must be registered by 5 p.m. of the day after they are bagged. You can't hunt turkeys with dogs. You must buy and sign the face of a turkey stamp, and staple or affix it to your hunting license. You must keep the stamp and license with you while hunting wild turkeys.

Proposals to limit maximum shot size to No. 4 for lead or No. 2 for steel shot won't take effect until next spring. However, the smaller shot are recommended for safety's sake.

Permits, licenses and stamps: Anyone interested in



Molting hens, jakes and immature birds are difficult to distinguish in autumn. For the fall hunt, one bird of either sex and any age can be taken.

hunting wild turkeys this fall must apply for and receive a permit. Application blanks were available in July and must be submitted by August 10th. All 1989 hunting licenses and turkey stamps expire on August 31, 1990. Fall turkey hunters must buy a hunting license and a turkey stamp with these exceptions — senior citizens with a Senior Citizen Recreation Card get a lifetime hunting license and don't need a turkey stamp. Certain armed forces members may obtain a free small game license and don't need a turkey stamp. Graduates from Wisconsin hunter education courses who were issued certificates between September 1, 1989 and August 31, 1990 do not need a hunting license or stamp to hunt turkeys this fall.

For the rest of us, turkey stamps will be available at most DNR field offices and county clerk's offices. You can buy stamps by mail from the DNR License Section, P.O. Box 7924, Madison, WI 53707. The cost will be \$5.25. The turkey stamp and license will be valid for fall 1990 and spring 1991 hunts.

A place to hunt: If you still don't have a good place to hunt this fall, get going! It pays to plan early and contact landowners long before the season starts.

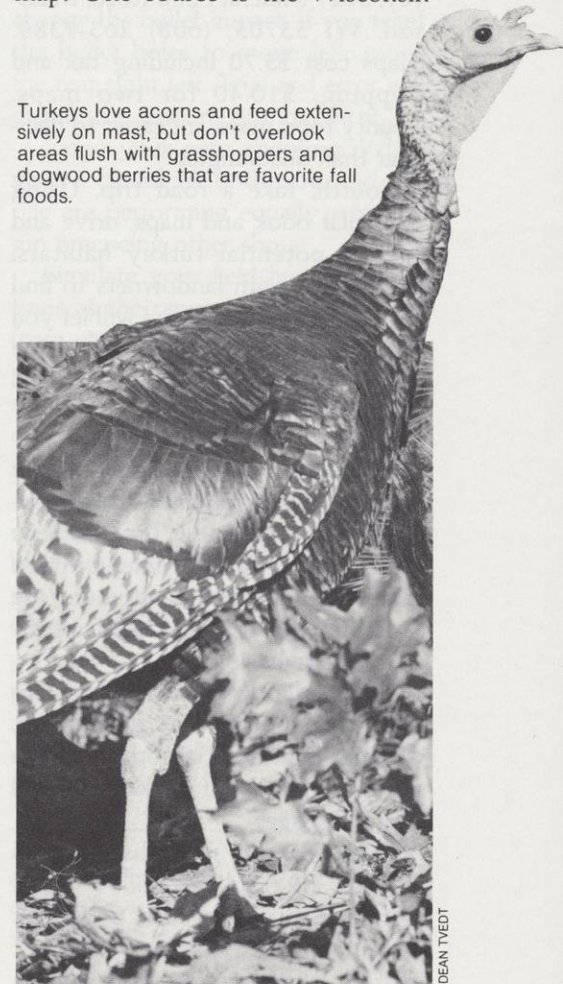
First, find out where the turkeys have been shot in the zone where you'd like to try your luck. Some zones (number two, for example) have a heavy, well-distributed har-

vest while others do not. Your local DNR field office can help you find these statistics.

Second, get a plat book of county land ownership from the county clerk's office. Plat books cost about \$25 for each county.

Third, buy a county topographic map. One source is the Wisconsin

Turkeys love acorns and feed extensively on mast, but don't overlook areas flush with grasshoppers and dogwood berries that are favorite fall foods.





Calling strategies vary widely in fall. You likely can't "overcall" hens, but jakes will be scared off by aggressive gobbler calls.

Geological and Natural History Survey, 3817 Mineral Point Road, Madison, WI 53705, (608) 263-7389. Maps cost \$5.70 including tax and shipping; \$10.40 for two maps. County topo maps are easier to decipher than quadrangles.

Fourth, take a road trip. Using your plat book and maps, drive and eyeball potential turkey habitats. Visit briefly with landowners to find out if they have birds and will let you hunt. A "thanks for permission to hunt" card could help make a favorable impression.

Fall turkeys: Turkeys in fall are not at all like spring birds. The breeding urge is long gone. The gobbler's head and neck adornments have faded, mother turkeys and young are about the same size, and molting hens and jakes look similar.

October flocks, whether hens with broods, young toms, or older males, will usually attempt to regroup when scattered. This habit provides the fall hunter's "edge."

Turkeys in fall prefer habitat with mixtures of croplands, fallow fields, pasture, mature woodlands and forest openings. DNR habitat studies of western Wisconsin farmland indicate

wild turkey hens have a strong preference for forest cover summer and fall.

Grasshoppers, dogwood berries and acorns respectively, are the turkey's favorite wild foods in fall supplemented with forays into corn fields. In fall, corn constitutes a third of the turkey's diet. Surveys find mainly dirty, broken kernels indicating the turkeys are primarily feeding on waste grain.

Don't expect to find record breakers in fall turkey flocks. The birds are heftiest in March just before the breeding season. Last fall gobblers averaged 18 pounds; adult hens, 10.2 pounds; jakes, 11 pounds and juvenile females, 8.7 pounds. A 23-pound tom was a rarity in the fall.

Hunting arms: Turkey hunters must use a shotgun or muzzle-loading shotgun fired from the shoulder. The barrel must be at least 18 inches long and the overall gun at least 26 inches. Most turkey hunters use 12- or 10-gauge shotguns and many prefer a full-choked barrel that produces a tight pattern. A 12-gauge with a three-inch chamber has an advantage over the 2 3/4-inch chamber by packing more pellets per shell.

Shotgun loads: Most Wisconsin turkey hunters use small shot — 4's, 5's, and the most popular 6's. Small shot delivers more pellets into the turkey's most vulnerable area: the small neck and head. Some hunters use a heavier load (No. 2's or BB), while others feel they are only an added danger in the woods, since larger pellets carry farther with more force and don't provide a very dense pattern. Buffered, copper-plated loads keep a tight pattern without deforming.

Test-firing: Given the variety of guns and ammunition used to hunt turkeys, all hunters should test-fire their guns before the hunt. The National Wild Turkey Federation (P.O. Box 530, Edgefield, SC 29824) produces an excellent paper target of a turkey neck/head silhouette on a bull's eye. Other targets are available at sporting goods stores that sell guns and ammunition.

Pattern your gun at short, medium and long range (20, 30 and 40 yards). It takes six or more pellets in the neck and head region to produce a killing pattern. You may be surprised how few killing shots you'll make at longer than 40 yards.

Decoys: Hunting with decoys is reasonably safe in spring when only bearded birds are legal, but it can be deadly in the fall when any turkey is fair game. You can imagine another hunter's excitement on hearing a turkey call and finally seeing a bird standing still. Be especially careful if you use a decoy for fall hunting.

Clothing and equipment: It's easy and relatively inexpensive to dress and equip yourself for a safe fall turkey hunt.

Select hunting clothes that provide comfort, camouflage and safety. Fall weather can turn from cold to warm, wet, dry or windy within hours. Layering your clothing so you can shed or add thin layers is the key to staying comfortable.

A camouflaged plastic pack that doubles as a seat is very convenient.

These packs have a shoulder strap, pockets for small items, room for your lunch, netting for your blind, and compartments that keep shells and clothing dry.

Reversible, insulated, plastic seat cushions are also handy. The blaze orange side is highly visible when you're walking through the woods. Some hunters prefer a reversible camo/orange cap. Others wear a light, blaze orange vest when they want to be seen. Avoid red, white and blue colors that can look like turkeys from a distance.

Camouflage clothing abounds. Match background colors but avoid the darker shades. In poor light or at a distance, a darkly-dressed hunter looks like a tom turkey.

Some old-timers prefer wool clothing for fall outings since wool holds body heat, even when it's wet. Olive drab or brown wool shirts and pants are favorites.

Other useful items include lightweight binoculars, reversible (camo/

orange) face masks, face paint and camo tape.

Scouting: Fall scouting for turkey flocks is fun and can even the odds with your sharp-eyed quarry. You can save time and energy by asking landowners where they've seen birds; by driving the back roads and taking a windshield survey of fields and openings; and by looking for turkey sign while you're hunting for small game, bow hunting or hiking.

An up-to-date plat book and good maps are a must for scouting. A good friend who is an excellent turkey hunter uses his maps like a log book, jotting down observations after each scouting trip.

After selecting a general area for your hunt, walk the edges of fields, pastures and fallow lands to find turkey sign. Torn-up cow pies are a dead giveaway. You may see feathers, tracks or droppings where birds have hunted insects.

The real fun in scouting turkeys is

finding a "hot roost." Look for a heavier-than-normal scattering of fresh droppings. Gobbler droppings are large and J-shaped, their body feathers are black-tipped and the middle toe measures more than 2 3/16 inches. Hen droppings are smaller and coiled, their body feathers are white or buff-tipped and the middle toe measures less than 2 3/16 inches.

Wooded roads and trails also provide clues. Look for places where birds have crossed the road or scratched up the leaves in search of fallen berries and acorns.

Keeping tabs on acorn production in fall can put a bird in your bag. Turkeys just love 'em. Acorns ripen and fall over many weeks. Production can be heavy in one area and poor just over the hill.

In Coulee Country, turkeys prefer to roost in large trees level with or slightly below the ridgetops. They prefer southern exposures.

When you've found a roosting area, take time to note obstacles that

Scouting for places to see or hunt turkeys takes a keen eye and planning. Look for areas where oak ridges meet conifers and fields. Next, check for signs of torn cow pies, feathers, tracks and scats — telltale signs of foraging turkeys.



GERALD C. JOHNSON



could shortstop your birds. Fences, dense brush, deep ravines and creeks are all barriers to be avoided.

Fall hunting methods

Scattering a flock — The most popular technique for fall hunting follows the “divide and conquer” strategy. Locate a night roost and move near the flock just after dark. When you get under the birds, holler, scream and raise a little hell. It’s great fun! The idea is to scatter the birds to the four winds. The next morning, at least an hour before sunrise, set up a hunting blind in the middle of the roost area. You should have birds all around you. As birds come in, imitate their sounds. When you get a good, safe shot, go for it.

Locating and scattering a flock in the early morning is another alternative, but be careful. Prowling around in the dark where other hunters may be lying in ambush is tricky business. By moving quietly and listening carefully, you may pick up some turkey talk from the night roost. The trick again is to find a flock, move in and scatter them. Set up on high ground near the middle of area where the turkeys scattered and wait. You want to pick the high spot because turkeys are more likely to come uphill toward you.

Flocks that are feeding in fields can be scattered by waiting until they move into nearby cover. Move quietly and quickly to the point where they exited the field. Break the flock up and set up at wood’s edge. Call the birds in and wait.

In truth, you can break up a fall turkey flock at any hour of the day as long as you keep a ridge or dense cover between you and the birds as you make your approach.

The ambush method — This technique is worth trying when

continued on page 13

Hunting with a decoy is a great strategy in the spring, but don’t try it in the fall. Lots of hunters are afield, any wild turkey can be shot, turkey calls will draw other hunters as well as birds, and camouflaged hunters are difficult to see. Dress for safety and alert other hunters of your presence.

ROBERT OJEN

REFLECTIONS AND SPECULATIONS ON ENVIRONMENTALISM FOR THE 1990s

My most vivid childhood memories of the 1950s and '60s are of family vacations. As the youngest of three kids, my realm during vacation travel was the middle of the back seat — The Hump. I was not to leave this territory. During the tensest hours of long drives, I wasn't even supposed to breathe anyone else's air, as if my space wasn't connected to that of my brother or sister sitting in the window seats.

My brother started a vacation tradition somewhere along the way. On trips where we'd cross back into Wisconsin, no matter the weather, he would

“... all things share the same breath — the beast, the man, they all share the same breath....you must remember that the air is precious to us, that the air shares its spirit with all life it supports. The wind that gave our grandfather his first breath also receives his last sigh.”

—Chief Seattle, 1854

roll down the car window right at the border and proclaim, “Now I feel better, I can breathe the good Wisconsin air.” Somehow Wisconsin's air wasn't connected to Minnesota's or Iowa's or Illinois' or Michigan's. The separation between them was as clear as the border sign. Little did I realize how our childhood attitudes

toward private space and air reflected the environmental philosophies society had adopted.

This was the postwar era of suburban sprawl. Communities across the country put a premium on air quality. It was a selling point for realtors who knew people were seeking quiet, more space, a safe place to raise kids, good schools,

clean water and clean air.

Like my siblings and me, the country perceived air quality as an isolated, local problem. Fumes from factories seemed far away. The air would always be clean here, punctuated with occasional wafts of barbecued steak in the summer, burning leaves in the fall and fireplace fires on cold winter nights.



DEAN TYEDT

Air pollutants travelling long distances form a summer haze over Milwaukee.

Whether society recognized it or not, air pollution has posed problems since smoke from the first cook fire got in someone's eyes. Smoke and gases from coal burning have been the chief atmospheric pollutants in all parts of the industrialized world for more than 400 years, according to Arthur C. Stern, public health specialist and air pollution historian. City dwellers from the late-1800s through the

1960s lived with soot, ash and fumes as a consequence of heating with coal and wood, as well as the growth of industrial mills and smelters. We accepted sickness from air pollutants as an isolated, occupational hazard of being employed as a miner, a steelworker, a hatmaker or in dozens of other manufacturing jobs, but we didn't like it. Public protests in the late 1920s and 30s in St. Louis, Cincinnati and Pittsburgh pushed officials to

curb smoky nuisances and substitute less smoky fuels for home heating and businesses.

Extensive use of coal and cars created some spectacular, visible disasters. Air pollution trapped within a city by temperature inversions sealed in unhealthy contaminants. An eight-day inversion in the coal country of Donora, Pa., in 1948 killed 20 people; 6,000 became ill and 1,400 sought medical attention. Killer smoke-fogs in

London claimed 4,000 lives in 1952, 1,000 lives in 1956 and 700 lives in 1962.

Dramatic air pollution disasters coupled with years of smoke and odor complaints in cities and towns sparked concern about air pollutants that could be seen, smelled or tasted. We now call these pollutants “particulates” — a mix of soot, smoke, dust, flyash, mists and associated odors.

The first air pollution agencies formed in cities as offshoots of public health departments to grapple with community complaints and concerns about visible, often odorous particulates. Milwaukee County established the state's first air pollution control program in 1948. The federal Health, Education and Welfare Department started an air pollution program in 1955. The nation's first air pollution law, the Clean Air Act of 1963, placed responsibility on local and state governments for preventing and controlling air problems. The year 1967 saw

several important “firsts” for air pollution controls — Wisconsin began a statewide air program, Congress held the federal government responsible to step in where state government failed to address air problems, and the Air Quality Act of 1967 mandated public hearings to encourage citizens to get involved in solving society’s air pollution problems.

Grabbing this opportunity, the Conservation Foundation trained citizen activists across the country. In Wisconsin, they worked with the League of Women Voters and the Wisconsin Lung Association to form a coalition of 240 organizations. This group, the Southeastern Wisconsin Coalition for Clean Air (SWCCA), represented citizens in regional air quality decisions. It’s one of our earliest examples of environmental activism.

The coalition’s first targets in 1969 were impending stan-

dards to limit air particulates and sulfur dioxide. Sulfur compounds were the suspected killers in the deadly London fogs. Sulfur is an eye irritant and causes coughing, wheezing and lung disease. Sulfur dioxide and its by-products are toxic to plants and can corrode metals, buildings, and paint finishes. SWCCA pulled together a team of expert witnesses and citizen groups to testify at legislative hearings on the rules. Ultimately, the Legislature passed standards incorporating provisions important to the coalition.

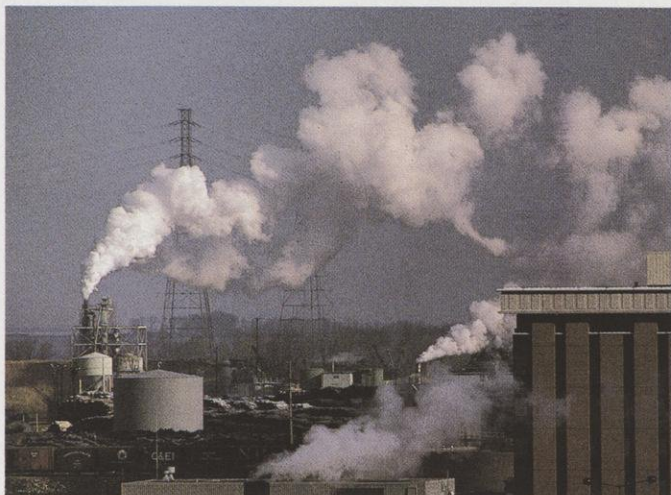
SWCCA continued to focus on local air problems, but the group’s issues often had statewide implications. One of its experts, Walter Lyons, then a meteorologist at the University of Wisconsin-Milwaukee, testified that air pollution travels great distances and local air quality is directly affected by activities in other states.

“ . . . polluted air’s ubiquitous nature and its very real dangers to the health and welfare of the people make air pollution a prime target for public indignation and citizen action.”

The Conservation Foundation, 1970

A decade of environmental awareness rushed in during the 1970s with a new Clean Air Act, the first Earth Day and a new U.S. Environmental Protection Agency.

Air concerns that had focused on particulates, odor and sulfur dioxide, now expanded to other “criteria pollutants” posing health risks — nitrogen oxides, carbon monoxide,



Innovative air pollution controls in the early 1970s included “fluidized bed” boilers that mixed large volumes of air and limestone with wood, coal or wastes to burn fuels at lower temperatures while reducing sulfur emissions.



Sulfurous smoke “downwashing” from an Alma power plant in 1973 carried pollutants to the ground. Switching to lower-sulfur coal, installing precipitators to trap sulfur and raising stacks reduced pollution near the plant.

ozone and lead. To assess these threats, we first had to start looking for them. A statewide network of technicians and automated monitors measured pollutants and defined areas of concern. We still depend on and refine this monitoring network to measure and track changing air quality problems around the state.

Early monitoring documented excessive amounts of particulates in southeastern Wisconsin and in the lower Fox River urban areas. Particulates can reduce visibility, corrode metals and irritate people’s eyes. Moreover, deeply inhaled finer particles can lodge in the lungs, causing serious health problems.

Occasional pollution storms swept through: Great Plains dust storms coated whole regions of Wisconsin in the fall of 1977 and “red rain” from Texas fell in southern Wisconsin in February 1980.

By the early ’80s, Wisconsin’s most serious particulate problems were largely licked by working with industries to filter smokestack emissions and by paving parking lots and streets.

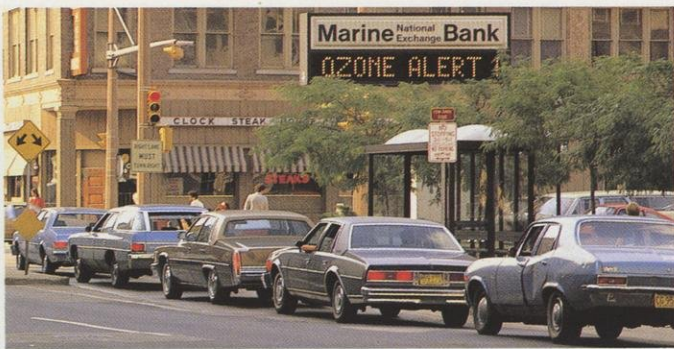
Sulfur dioxide problems continued throughout the decade. The biggest success in the ’70s was convincing the Dairy-

land Power Cooperative in Alma to burn low-sulfur coal, install a precipitator and raise its smokestack to dilute the effects of sulfur emissions.

In 1980, combined sulfur dioxide emissions from communities and businesses regularly exceeded health standards in several regions of Wisconsin, including Green Bay, Milwaukee, Rhinelander, Peshtigo, Brokaw and Biron. Wisconsin had the dubious distinction of being labeled one of the “dirty coal states” because utilities and industries here burned large amounts of high-sulfur coal. Our coal supply came from nearby coal fields in Illinois, Indiana and Kentucky. In the early ’80s, Wisconsin strove to meet health standards for sulfur dioxide statewide by lowering the sulfur content of coal burned in power plants.

Statewide monitoring confirmed that nitrogen oxides and airborne lead levels were well within health guidelines by 1980. The introduction and use of unleaded gasoline in cars has helped keep the lead level down.

Carbon monoxide, a colorless and odorless gas that can be fatal at high enough concentrations, caused sporadic health problems in small pockets of



DEAN TVEDT

Ozone awareness in the late 1970s prompted a warning system when air pollution can reach unhealthy levels for children, elderly and those with respiratory diseases.

Milwaukee and Waukesha counties throughout the '70s. These problem areas would be documented, pinpointed and resolved early in the 1980s.

Ozone was soon recognized as a pollutant that would prevail for decades. It's elusive: nobody emits it. Businesses, utilities and homes release fumes of volatile organic compounds and nitrogen oxides that can travel long distances before forming ozone. Volatile organic compounds are hydrocarbons that evaporate readily. They are found in common products like gasoline, solvents, paints, lighter fluid and cleaners. Automobile exhaust, gas pump fumes, printing plants, manufacturers, body and paint shops, oil terminals, cleaners, and other sources emit these compounds into the air. Nitrogen oxides come from automobiles and fossil-fuel burning power plants. Together these two compounds react in sunlight and form ozone.

We learned that there's ozone and then there's *ozone*. High up in the atmosphere

ozone shields us from harmful solar ultraviolet radiation, but here at ground level it irritates our eyes and lungs. The most sensitive of us can't breathe comfortably outside if ozone levels are elevated. Higher ozone levels can also devastate farm crops like onions and beans as well as some trees.

To reduce ground level ozone, the state started inspecting tailpipe emissions from automobiles registered in southeastern Wisconsin. Testers measure how efficiently each car burns hydrocarbons and emits nitrogen oxides.

Testing, which started in spring 1984, was a true milestone in protecting Wisconsin's air. Most environmental programs aim to reduce pollutants emitted by municipalities and businesses. This was the first program to monitor each family's environmental habits. Each car in the ozone-high region of Wisconsin must be tested annually before it's registered.

Ozone levels tend to be highest in warm, sunny weather



JEAN B. MEYER

More than 800,000 tailpipe tests a year in southeastern Wisconsin have checked car emissions of hydrocarbon and nitrogen oxides since 1984.

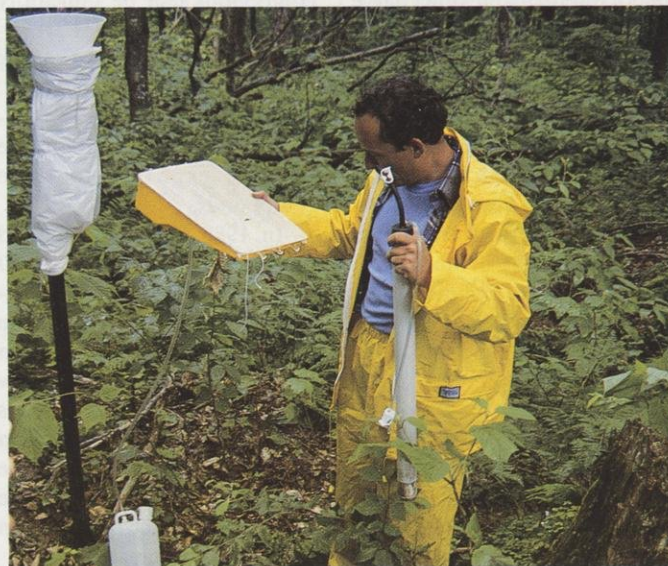
when hydrocarbons and nitrogen oxides combine to form a hazy smog. By the time ozone forms, it's often miles from the pollution sources that created it. Southerly winds swirl emissions from cities and industrial regions in the Midwest's most densely-populated areas from the southwest corner of Lake Michigan, north along the Door County coast and across the lake to the Michigan shoreline.

State boundaries do not block ozone formation, so environmental planners from Wisconsin, Illinois, Indiana and

Michigan needed to cooperatively solve their ozone problems. Through cajoling, lawsuits and negotiation, an agreement was worked out in 1990. The states will collectively measure ozone precursors and weather patterns in the Lake Michigan region to understand their mutual ozone problems. Studies starting in the summer of 1990 used high-flying and high-tech monitoring devices ranging from planes and weather balloons to monitors on skyscrapers and remote sensing from satellites.

"The air, the water and the ground are free gifts to man and no one has the power to portion them out in parcels. Man must drink and breathe and walk and therefore each man has a right to his share of each."

—James Fenimore Cooper, *The Prairie* 1827



CHERYL L. REZABEK

Research in Quebec forests, New England mountains and midwestern lakes regions in the early 1980s documented that vast regions are threatened by acid rain. Wisconsin's 1986 law set an ambitious schedule that industries and utilities are meeting to reduce the sulfur and nitrogen oxide emissions. These fumes combine with water vapor to fall as acidic rain, snow, dust and mist.

Ozone aside, Wisconsin was meeting national health standards for clean air by the end of the 1980s, or so we thought. In hindsight, we had only resolved the obvious air problems that were easier to see, smell and measure.

Other invisible, odorless air pollutants more difficult to measure continue to cause problems. Some travel long dis-

tances and it's difficult to determine where they started and where they are headed. Federal action to address these air pollutants — acid rain and air toxics — is extremely slow. States like Wisconsin, where people care deeply about natural resources, haven't waited to reduce these threats.

We used the term "acid rain," but we learned that

snow, sleet and fine acidic dust can also carry the same chemicals. Like ozone, acid rain forms when precursors — sulfur dioxide and nitrogen oxides — dissolve high in the atmosphere in fine water droplets and precipitate far from the pollution sources. Sulfur dioxides come chiefly from power plants, nitrogen oxides from automobiles and power plants. Emissions from power plants burning high sulfur coal in the Midwest fall as acid rain in the Northeast and Canada as well as in parts of Wisconsin and other Great Lakes states.

Research confirmed these pollutants increased the acidity of some lakes, interfering with reproduction and survival rates of fish and other aquatic organisms.

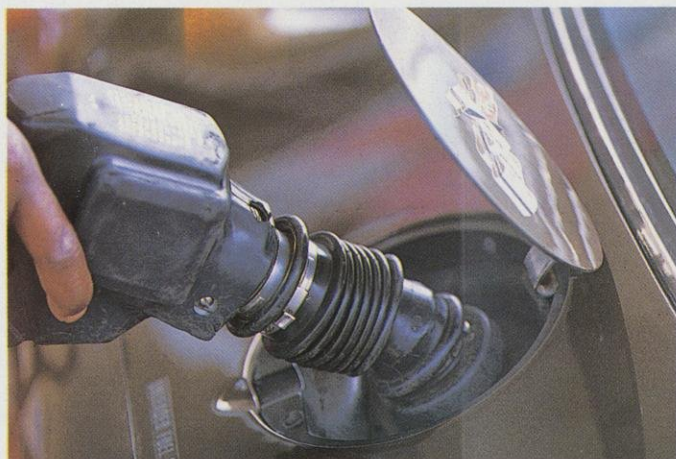
In 1986, Wisconsin passed the most comprehensive acid rain law in the nation. By law, major utilities and other large sources of sulfur dioxide emissions have until 1993 to reduce their emissions to half of the levels emitted in 1980. State-wide emissions of nitrogen oxides are scheduled to taper off also. These pollution reductions aim to keep Wisconsin precipitation at or above pH 4.7, which research indicates will protect lakes and aquatic organisms from acid rain. Wisconsin utilities and other industries are currently ahead of schedule in meeting the required emission limits.

New products, services, manufacturing processes and methods to measure pollutants

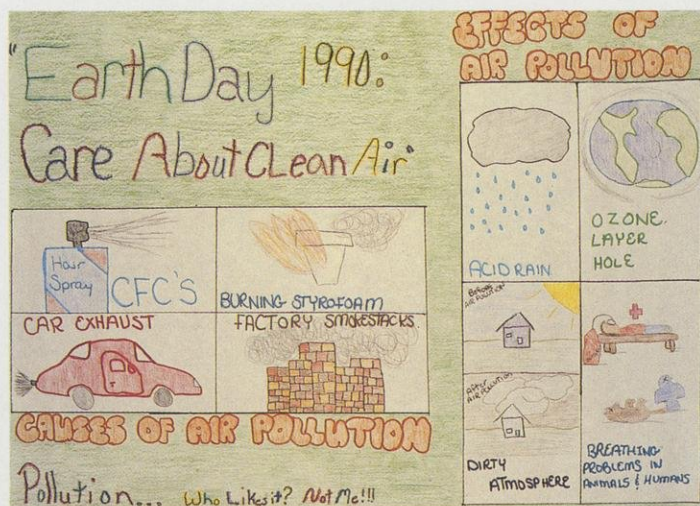
have borne new concerns about emissions of toxic and hazardous substances. Some compounds like benzene, dioxins, furans, formaldehyde, mercury, cadmium and chloroform are toxic. These compounds evaporate or diffuse when products are used or discarded. Fumes from burning plastics, filling gas tanks, dry cleaning clothes, electroplating metal; vapors from body shops and house painting; and evaporating chemicals from household cleaners, spot removers and manufacturing practices add toxicants to the air.

To date, toxic air pollutants have been poorly understood and largely unregulated in this country. Toxic pollutants tend to be emitted in very small quantities: parts per million or billion. Such low levels are difficult to detect and expensive to measure, yet some of these compounds can be unhealthy even if small quantities are inhaled, absorbed over time or taken up in the food chain. Often no information is available to guide people about the risks of exposure to these compounds.

In 1988 Wisconsin limited emissions of more than 400 such compounds whose hazardous qualities may pose health risks when inhaled even in small amounts. Very few states currently offer citizens such protection. As Wisconsin continues to build on the framework of this new law, we will further reduce threats from toxic air contaminants.



A vacuum system built into gasoline hoses traps fumes that would otherwise escape to the air. The vapor recovery hose is a tool to prevent pollution while we further reduce emissions from fuels, products, services and manufacturing.



Fifth grader Kevin Rodgers of Pulaski captures air pollution challenges on Earth Day 1990 — reducing chlorofluorocarbon emissions and ozone depletion, increasing efforts to stem auto and factory pollution, curbing air toxicants, preventing acid rain, assessing long distance transport of pollutants and better understanding how these mixed pollutants affect our environmental health.

As we lunge into the 1990s, we once again face a new Clean Air Act, the twentieth anniversaries of Earth Day and the U.S. Environmental Protection Agency, and the possibility of renewed environmental awareness. Suddenly we've realized our air quality problems are reaching across the earth, which is getting more crowded, whose societies are more intertwined, and more single-minded about the need for environmental protection.

Our work to stem air pollutants must stretch beyond the borders of our state and our country.

Today we must find the answers to climatic change. The carbon dioxide we have been sending skyward has accumulated and is turning our atmosphere into a sort of greenhouse that captures the warming rays of the sun. The predicted rise in temperature wouldn't just temper our long, cold winters. Such a temperature rise may alter water levels, dry up small streams, change the mix of plants and animals that thrive here and create more extreme weather patterns.

The earth and creatures on it have evolved through a long process of climate change. Some species have adapted, others became extinct. Now, our extensive use of fossil fuels, our growing population, global

destruction of rain forests, and increasing use of products and services that release other greenhouse gases like methane and nitrous oxide threatens to speed up climatic change faster than species can adapt. A forest cannot suddenly move several hundred miles north. It moves slowly, as slowly as it takes for new trees to grow on its north-ern edge.

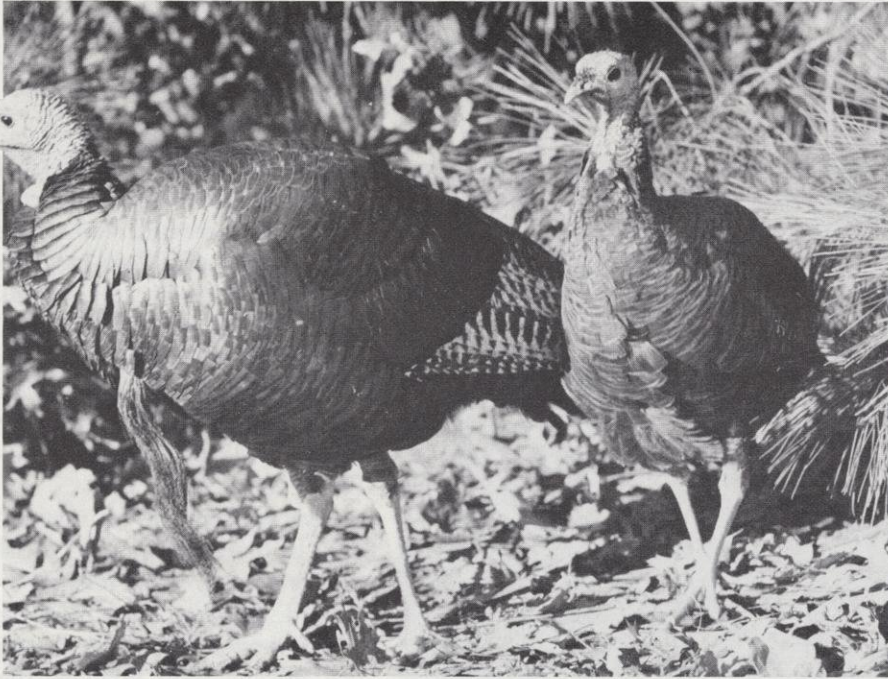
We must find a way to save the ozone layer high in the stratosphere. We must limit chlorofluorocarbons, which are used to make foam packaging and provide coolants in air conditioners. By thinning the stratospheric ozone layer, we can expect to suffer from increased incidence of skin cancer.

Earth Day 1970 and 1990 taught us we can't lose one part of our environment without losing others. The pieces are as connected as the air between Wisconsin and neighboring states. They are connected as the middle and window seats in my family car. They are as tightly intertwined as the bonds that connect me to my brother and sister.

—by Mary Hamel

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DEAN TVEDT

Relax. Hunting or watching turkeys from a blind gives you a chance to move around a bit while drawing in turkeys really close.

continued from page 8

you've watched a flock's movement for several days and you know when and where they move from roost to feeding site and back.

Select one or more ambush sites along the route and build blinds. Get into a blind early and wait. Don't be bashful about calling-in the turkeys and be sure to wear blaze orange when moving between blinds. This hunting method can be dangerous, but you can better protect yourself by setting up blinds that are easily visible to other hunters.

Drive hunting — Some hunters drive turkeys as they would deer. This usually doesn't work. It's dangerous and can result in more crippled birds as you will be tempted to shoot at running and flying birds.

Blinds: Ask any successful turkey hunter how to improve your odds for bagging a bird, and the likely answer is, "Use a blind." Even a careful hunter who is camouflaged to the eyeballs and glued against a big tree can spook a turkey with just a flick of the wrist.

There are a whole slew of advantages to hunting in a blind. You can

move around without spooking birds. You can share your hunt with your wife, children or other friends. Whether you're on a ridgetop, clearing or a logging trail, a blind helps bring turkeys in so close you can almost touch them.

The best turkey hunter I know swears by blinds. After locating flocks, he builds two to five blinds in the area.

You can make a cheap, simple blind from a piece of stiff paper or cloth netting colored brown on one side and green on the other to match the background. A good turkey blind is just high enough to partially conceal you but low enough so you can shoot from a sitting position. You should have a clear view for 40 yards in every direction to avoid being stalked yourself.

When the flock is scattered, place your blind near a ridgetop with the sun at your back. From this vantage point, you should have a clear view of other hunters and odds are good the birds will come in really close.

Calling: Turkey calling in fall is challenging and fun. The mix of gobblers and hens of diverse ages will

test your ability to bring them in.

Hens with tight broods are often desperate to get back together. You probably can't "overcall." Keep calling as they come, so the flock doesn't drift off. You may have to chase mother off or get between her and the brood. Reassuring soft purrs and leaf scratching sounds will put the flock at ease.

Young jakes (6 months) talk a lot as they move and feed in fall. Their gobbling may be ragged as they are "earning their spurs." Mimic their calls, but avoid the "aggressive gobbler" call. Jakes are scared of the old toms.

Although secretive and not too vocal, bachelor flocks of gobblers can be had in the fall. After scattering them, set up quickly and wait, and wait. A few soft clucks and calks may work, but don't overcall. You may want to scratch out a gobble or yelp on the gobbler side of your box call.

Mimicking an aggressive hen can sometimes steer a bird your way. Bossy hen yelps challenge other hens to "take me on." They tell the brood that "all's well, come on back."

Your bag of fall turkey calls should include yelps, clucks, purrs, cackles and gobbles. Diaphragm calls work especially well for kee-kee's and kee-kee runs.

The bottom line in turkey calling is safety. Never call from heavy cover where your visibility and shooting field are restricted. Your hunting site should provide full protection (a big tree) for your back and a clear view.

Now settle back and call in a trophy! ■

Ray Kyro, recently-retired wildlife manager at La Crosse, helped bring wild turkeys back to southwestern Wisconsin.

A new twist to a wild turkey trophy

Bill Wiese

I suspect the Boy Scout learned his dance from a teacher. I had seen it months before on the edge of a freshly plowed field near Westby, Wis. on the third day of my first wild turkey hunt. That morning, a tom appeared after two hours of incessant gobbling and displayed for 45 minutes as he and a hen traversed 300 yards toward my decoy.

By the time the Indian Dance Team exhibition ended I was thinking of the gobbler fan and wings that annoyed my wife every time she opened the freezer. I still had in mind a glorious wall mount when I approached the Scout leader. He was courteous when I asked about the dancers' costumes. When I mentioned wild turkey feathers he got excited and I knew I had found an appropriate way to display my trophy.

My gobbler fan was used almost in its entirety as a bustle worn at the rear of a costume. Selected wing and tail feathers adorned a roach (head piece) and one wing was retained intact as a fan. It's thrilling to see how the young dancer incorporated these pieces into his costume. I'm able to share in the excitement of his success in national dance and costume competition.

For any hunter who has too many trophies to display or items cluttering up the freezer waiting to be mounted, a call to the local Boy Scout troop or Native American dance troop might provide a most satisfying alternative.

Scouts and Native American dancers assemble their costumes after careful research of a particular tribe or band and historical period. In order to be authentic the costume must accurately represent the adornments of the era and locale and can include no manufactured articles produced outside of the time period. All natural



Pheasant feathers, elk bones, quills, turkey fans and wings were carefully crafted into this dancer's costume. Consider donating legally-obtained feathers, hides and antlers to scouting and Native American dance troops.

items such as feathers, hides and antlers of game species must be obtained legally — no raptors, songbirds (English sparrow, starlings and feral pigeons excepted) or protected animal species may be used.

These explanations made it clear why wild turkey feathers are favored by the Walinaxin Dance Team in my hometown, Menomonie, Wis. The community is 100 miles north of the recently established Wisconsin turkey range where there has been only limited wild turkey hunting for the past six springs.

Dancers search for a variety of natural items to create their costumes. All game bird feathers are much sought after. Deer toes (the hockings on the back of a deer's leg), antlers, bear claws, furs, snake skins, porcupine quills, elk ribs, and a host of other articles often discarded by sportsmen are prized by dancers. Salted or frozen items are easily used.

I recognized the mating display of the turkey in the social dances the Boy Scout teams performed. But that April morning in Westby the mating dance was real and my heart pounded the drum beat. The gobbler and hen made agonizingly slow progress toward my decoy positioned on a cut in a 10-foot embankment. The birds disappeared at the base of the bank 45 yards below me. I leveled my shotgun to one side of the decoy. Minutes later I heard a farewell gobble as the tom found another route up the bank and disappeared over the ridge above.

So where did the fan and wings come from? The next day I spent the first hours of the morning without a ghost of a gobble. Frustrated, I marched around for a couple hours seeking a "better spot." Eventually my meandering brought me back to the original calling site of the morning. As I approached, a suicidal gobbler rushed the decoy I had tucked under my arm. The gobbler's 10 1/2-inch beard hangs on my wall. His fan and wings still display and strut with the Walinaxin Dance Team. Truly a worthy trophy. ■

Bill Wiese hunts and fishes near his Menomonie, Wis. home.

The Changing Nature of the Wildlife Business

Their clients, habitats and chores are changing, so wildlife professionals are adapting.

Mary K. Judd

If you've seen ruffed grouse explode from the brush on a woodland walk, watched a meadowlark on a fencepost survey his grassland kingdom, enjoyed tasty venison, listened to woodcock peent on a spring day or watched prairie chickens dance on an April morning, then you've appreciated the work of Wisconsin's wildlife managers, researchers and technicians.

Did you know the same people survey wetlands for purple loosestrife, help landowners improve farmlands for wildlife, supervise lake weed treatments, manage Natural Areas, restore riverways for waterfowl and recreation, inspect game and fur farms, sample wild animals for signs of chemical contaminants, issue permits to gather moss, license falconers and raptor rehabilitators, and do the lion's share of field work to restore eagles, osprey, peregrine falcons, great egrets, trumpeter swans, Kirtland's warblers, piping plovers, and common terns?

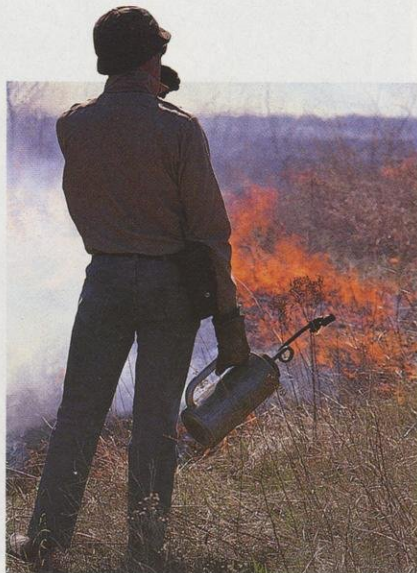
Working as a wildlife manager or technician has never been simple, but it's getting more complicated each year. When they were called "game managers" the job entailed plenty of hard, outdoor work — buying and posting land for wildlife and recreational hunting, raising and stocking pheasants in southern Wisconsin, trapping and moving nuisance beavers in the Northwoods, building large flowages for waterfowl, patrolling hunting grounds, checking hunters' harvest, and surveying wildlife habitats and wildlife populations.

The big battle in those days was convincing a skeptical hunting and trapping public that managing wildlife, land and people was an art and a science. The game managers' main allies were hunting clubs, sports organizations and a handful of researchers

(Clockwise from left) Fluctuating wildlife populations are tracked and charted with computers, controlled burns maintain grassy habitats, Wildlife Manager Tom Howard calculates a deer's age with young hunters.



ROBERT QUEEN



ROBERT QUEEN



DNR PHOTO

interested in preserving habitat and promoting larger game harvests.

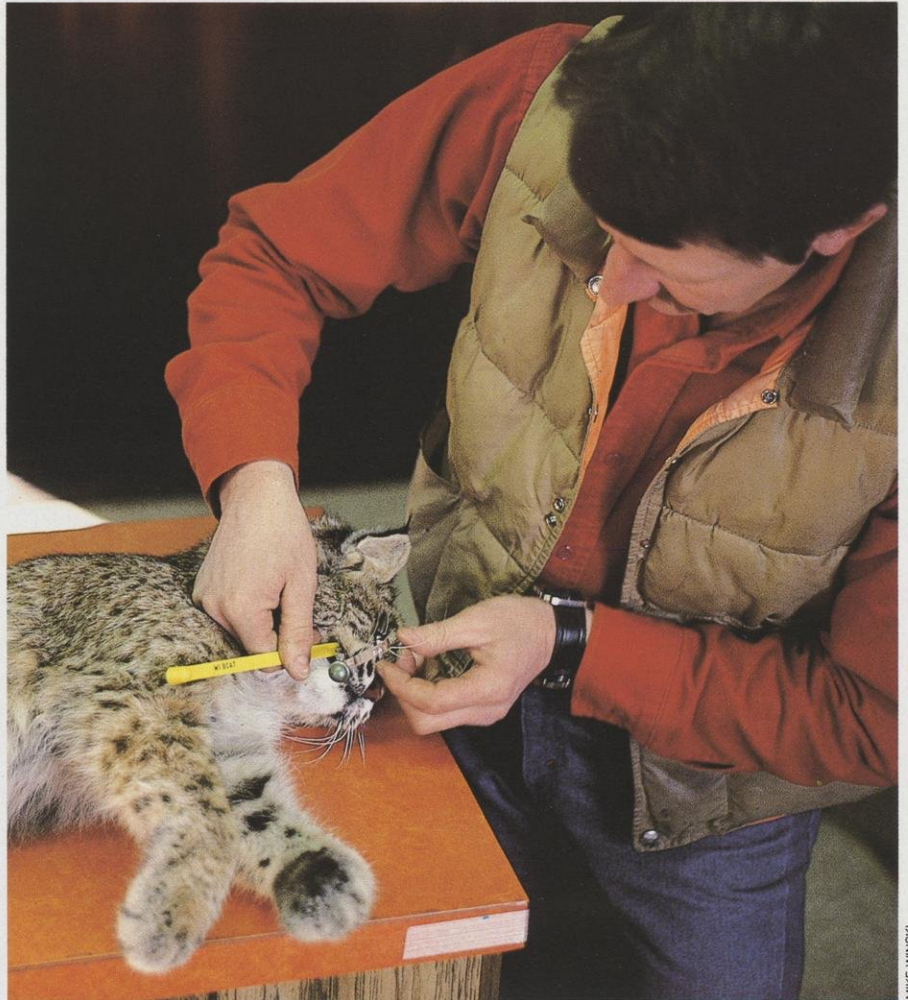
That was 20 years ago. Today, environmental legislation, diminishing public lands and a growing interest in nongame and endangered species are changing the wildlife professional's job. The typical ally nowadays is likely to be an environmentalist, a canoeist **and** a duck hunter.

"Our workload is getting larger and more complex," says Steve Miller, director of DNR's Bureau of Wildlife Management. "Wildlife sit on top of an ecological pyramid. Nearly all land and water issues and some important social issues involve wildlife to some degree. Biotechnology, sustainable agriculture, nongame management, endangered species restoration, environmental contamination, changing patterns in outdoor recreation, intensive farming and aggressive land development are just a few of the things we must consider.

"We're trying to determine how these social and ecological issues affect wildlife, and we're talking about these changes with our constituents. Nevertheless, these new issues are frustrating because we hardly have time to deal with them, given current demands to preserve wildlife populations and habitat."

The constant demand to maintain wild places

Even in times of change, some things remain constant. The DNR wildlife management program continues to preserve a lot of public land: nearly 6.1 million acres — 218 public wildlife areas totalling over 439,000 acres; 115,000 acres of leased lands; 6,800 acres of U.S. Fish & Wildlife Waterfowl Production Areas and 68 State Natural Areas. In addition, DNR wildlife managers recommend practices to enhance wildlife populations on nearly 1.4 million acres of national forests, 707,200 acres of state forests and 2.3 million acres of county forest and park lands. And



Wildlife Manager Carl McIlquham registers and examines a bobcat. Populations of secretive animals like bobcats are monitored by field research, by examining carcasses and by interviewing successful hunters and trappers. Wildlife professionals are studying if growing fisher and coyote populations add to other stresses young bobcats must overcome.

managers cooperate with public agencies and wildlife organizations to enhance wildlife habitat on other public and private lands.

Wisconsin's wildlife specialists negotiate with landowners to purchase or lease lands that provide public hunting, trapping, picnicking, hiking, skiing and bird watching. Each parcel needs careful tending. A cadre of wildlife technicians and assistants post wildlife refuges and closed areas, mend broken boundary fences, pick up trash left by the careless, plant food patches, repair old dikes, plant prairies, oversee timber sales, release wild turkeys and pheasants, landscape forest openings and stock game farm-raised pheasants. Building the right combinations of food, shelter and resting areas can be back-breaking

work. Some weeds and brush must still be hand-pulled, cut, mown or burned.

Wildlife managers set aside their work gloves to team up with DNR wildlife researchers. They act as surveyors and pollsters, keeping their fingers on the pulse of wildlife populations by coordinating censuses, by registering deer, bear and turkey, and by tagging carcasses of otter, bobcat and fisher. Statistics gathered from registered animals are used to note population trends and set quotas for subsequent hunting and trapping seasons. These quotas are tailored to each management unit; they help maintain vigorous wild populations while offering hunters and trappers the opportunity to pursue bear, fisher, deer or other animals.

Working with small landowners in the big country

Experience is one of the wildlife professional's best tools for understanding what wildlife populations will need to thrive into the future. For instance, after years of acquiring and managing selected parcels as wildlife areas, managers learned that some wildlife communities need more space than had been provided. Wildlife managers now spend more time working with private landowners to extend wildlife habitat beyond the fencelines surrounding public property. By developing feeding, resting and nesting areas on neighboring property, wildlife populations will grow more abundant and diverse.

Two programs proving to be good for wildlife and good for landowners are the Water Bank Program and the Conservation Reserve Program, which pay farmers a 10-year stipend for restoring trees, shrubs, wetlands, food patches and shelterbelts on marginally-profitable lands. Simple measures like leaving grassy borders along drainage ditches and mowing less frequently along roadways can increase numbers and variety of wildlife. That, in turn, will lead to better opportunities for wildlife watching and hunting. In just two years, farmers working with local soil, agricultural and wildlife experts have restored over 500 wetlands.

Similarly, a portion of the state's Stewardship Program will provide \$1.5 million annually in the 1990s for the purchase of perpetual easements on private lands where habitat will be restored for ducks, pheasants and a wide variety of songbirds.

These funds mark both an opportunity and a milestone for Wisconsin's wildlife — an opportunity to find and preserve remaining wildlife habitat, a milestone in acknowledging that hunters and nonhunters alike are willing to invest in quality habitat for wild animals and plants.

Traditionally, wildlife managers focused on game species because

wildlife programs were funded by purchases of hunting licenses, trapping license and sporting equipment. The wildlife programs those purchases supported chalked up tremendous successes — a record-high white-tailed deer harvest last year, strong Canada goose populations, a resurgence of wild turkeys and greater opportunity to trap muskrat, beaver, raccoon, fisher and other furbearers. Hunters, rural landowners and other conservationists are bankrolling statewide programs to restore pheasants and the nationwide North American Waterfowl Management Plan to restore healthy numbers of waterfowl.

Watchable wildlife: from deer to dickcissels

As wildlife professionals' human constituents are changing, so are their wildlife charges. DNR researchers, endangered species specialists, wildlife managers and technicians carry

out plans to restore osprey, bald eagles, trumpeter swans, peregrine falcons, prairie chickens, double-crested cormorants, timber wolves, pine marten and other threatened or endangered wildlife. The team firmly embraces the philosophy that all wildlife, not just game species, offer great pleasure to many people — hunters and nonhunters alike. And people enjoy wildlife in many different ways, including the harvest sports, watching and tracking wildlife, listening to bird songs, feeding wildlife, landscaping for wildlife, building nest or roost boxes, painting and photographing wildlife, and participating in "recreational wildlife research" like bird counts, bird banding, frog and toad counts.

DNR wildlife properties provide a wide-range of "watchable wildlife" opportunities. Larger wildlife areas including Crex Meadows, Horicon Marsh, Sandhill, Mead and Navarino have staff or volunteers who can provide property tours or other educational programs for visitors. Observation towers, blinds, trails, mowed

Environmental groups worked with Wildlife Manager Tom Becker to band ducks for a waterfowl study.



DNR PHOTO

dikes, self-guiding auto tours and "Watchable Wildlife" (a guide to Wisconsin's wild world) make viewing a pleasure. Creating more opportunities for watching wildlife, especially in urban areas, is just as important as developing quality hunting and trapping.

Wildlife education: reaching the young and the young-at-heart

For most adults, wildlife education was what we learned poking around

the woods or tagging along on Uncle Billy's hunting trip. No more. DNR's wildlife program sponsors Project WILD, a national education program seeking to incorporate wildlife awareness, appreciation and understanding into the kindergarten through high school curriculum. DNR educators and wildlife management staff train teachers, who can then blend wildlife themes into science, art, social studies, even math classes.

To reinforce its commitment to education, the Department of Natural Resources hired wildlife educators and interpreters stationed in Madison, Crex Meadows, Horicon Marsh

and the Sandhill Wildlife Area to help visitors appreciate wild animals, the importance of wild habitat and the principles of wildlife management. Wildlife areas including Crex Meadows, Navarino, Brillion and Collins Marsh have "friends" groups whose local education programs are run by volunteers.

As in days past, wildlife managers also speak to school classes, rod and gun clubs, conservation groups and the general public. Some also write newsletters, newspaper columns, participate in radio or television programs, state and county fairs, Farm Progress Days and other special events.



DNR PHOTO

(above) Wildlife Technician Mike Winski talks about wood ducks, wetlands and wildlife with grade schoolers. Through Project WILD, wildlife management themes can be incorporated in K-12 science, social science and math classes.

(below) Stretching every dollar. DNR's wildlife management team makes hard choices of which projects will be funded to improve wildlife habitat, build trails, plant food patches, maintain properties and conduct research. Only half of the wildlife program's workload can be completed with current staff and budget.



HARRY LIBBY

One foot in the office and one in the field

Like all resource professionals, wildlife managers aren't just in the field anymore. They are deeply involved in policy debates — testifying to the Legislature, working with the Conservation Congress, negotiating harvest quotas with the Chippewa Nation, cooperating with neighboring states and Canadian provinces to protect migratory animals, drafting rule changes and lobbying for wildlife in Washington. And they work with a long list of cooperators including the U.S. Fish and Wildlife Service, U.S. Department of Agriculture, U.S. Army Corps of Engineers, U.S. Forest Service, National Park Service, Great Lakes Indian Fish and Wildlife Commission, the Wisconsin Department of Transportation, State Department of Corrections, regional planning commissions, county and local governments, the University of Wisconsin system and many private conservation groups.

Through their collective commitment, Wisconsin's wildlife professionals work with landowners, wildlife watchers and hunters to provide public places where people can recreate, explore wildlife resources and share outdoor experiences. ■

Mary K. Judd is DNR's wildlife education specialist based in Madison.



Whitetail forecast 1990

Given good weather,
the fall white-tailed deer
hunt should be great.

Tom Isaac

The fall deer-hunting season is looking pretty good. Nope, even better than that, it's looking great — a record-breaker! Whitetail populations are abundant across the state, so strong that we'll be issuing substantially more permits for antlerless deer.

Even for hunting statisticians, the numbers are eye-openers. Despite last year's record harvests by both gun and bow hunters, the fall population is estimated at 1.3 million deer — about 10 percent higher than 1.15 million last year. The gun and bow deer harvest may exceed 400,000 for the first time, given good hunting weather. An estimated 630,000 resident and 22,000 nonresident hunters

will spend about three million "hunter recreation days" pursuing whitetails during the nine-day gun deer season (November 17-25).

In most deer management units, hunters will have chances to take antlered bucks and liberal quotas of antlerless deer. The major exceptions are Milwaukee County, which is closed to all firearm deer hunting, and a "2+7 season" (two days any deer followed by seven days bucks only) along some Mississippi River units.

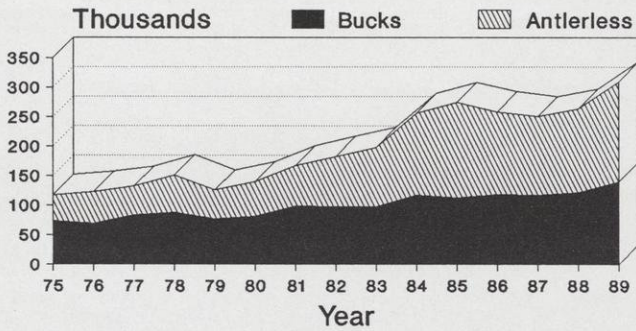
About 205,000 resident and 7,000 nonresident archers will take part in the bow season, which runs September 15-November 11 and December 1-31. Typically, one in four tags a deer, about half the bow-killed har-

vest will be bucks and 90 percent of the bow harvest will be taken in the early season, before the November gun hunt. The bow deer season is split so archers who also enjoy hunting deer with firearms can hunt during both seasons.

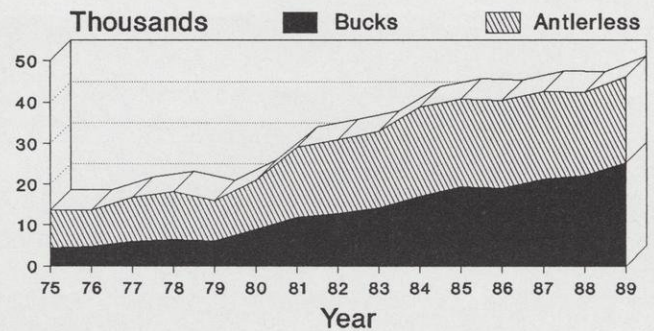
Why so many deer?

Wisconsin's deer population has generally been on the rise since 1971. This dramatic, long-term increase, especially in the north, is attributed to a long series of mild winters (especially 1986-87, which was essentially a "non-winter"), changes in forest management practices, rainy/windy hunting conditions during several recent

Wisconsin Gun Deer Harvests 1975 - 1989



Wisconsin Bow Deer Harvests 1975 - 1989



hunting seasons that decreased the harvest, increased baiting and recreational deer feeding in winter, reduced poaching (the fine for illegal possession increased to almost \$2,000 in 1980), some hunter reluctance to shoot does, and drought. Drought-weakened trees defoliated by insects allowed sunlight to reach the exposed forest floor, increasing the lush undergrowth foraged by deer.

These combined factors are most evident north of Highway 64. Even after last year's record harvest, deer herds in most of the northern forest regions are still 20 percent or more above winter population goals. Deer populations in a third of the farmland and forests of central Wisconsin re-

main high.

Permits to hunt antlerless deer in these units will increase substantially this year to bring deer populations closer to those goals. Nearly 375,000 Hunter's Choice permits and more than 100,000 "bonus" permits may be issued to gun hunters for the 1990 season. Bonus permits are issued if excess Hunter's Choice permits remain after all applicants within a unit have received one, allowing a hunter to take one antlerless deer in addition to the deer that can be tagged with a Hunter's Choice permit. The two tags may be used in either order. Bonus permits, where available, are issued by random drawing to hunters already applying for that unit. Last year

30,103 bonus permits were issued and hunters filled 50 percent of their bonus tags.

Wildlife managers encourage more hunters to use their bonus tags and harvest more antlerless deer. Research shows the harvest of antlerless deer in most deer management units needs to be as high, or higher than the buck harvest to keep deer populations under control!

New deer hunting rules for 1990

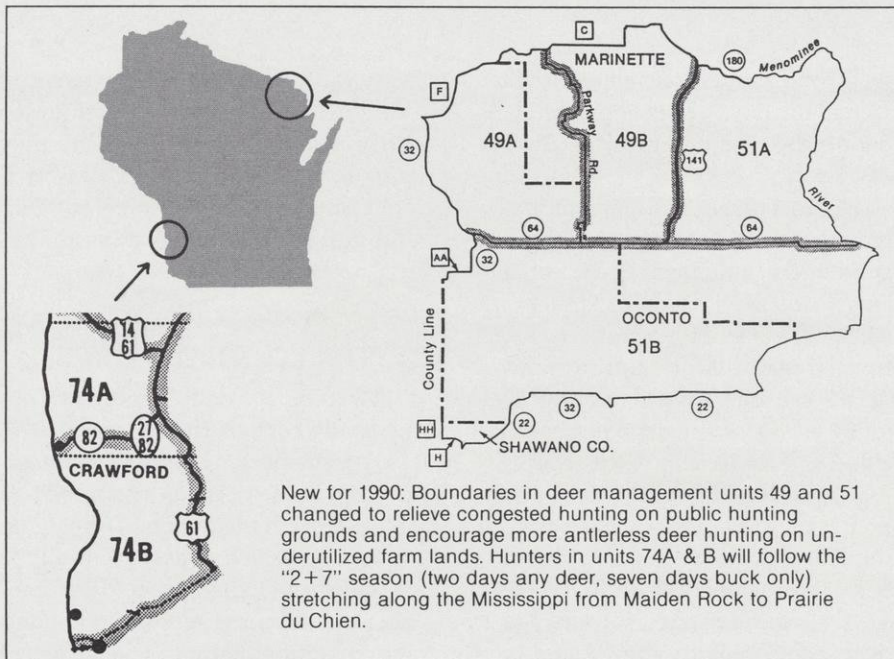
The 1990 season will bring important changes to last year's hunt:

- Unit 49 and 51 deer management boundaries have been modified.
- Units 74A and 74B return to the 2 + 7 format (two days any deer followed by seven days bucks only).

Licenses: Regular deer/gun licenses are for firearms only and must be purchased before the gun deer season starts. The cost is \$15.35 for residents and \$106.60 for nonresidents. The deadline for Hunter's Choice applications is September 28. Please mail in your applications early!

Archery licenses allow the taking of deer, small game and unprotected species with a bow. If issued during the bow deer season (after September 14), the license is not valid until the third day after purchase, excluding the day of purchase. The cost is \$15.60 for residents and \$76.60 for

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non-residents. Archery licenses cannot be used to hunt deer during the deer gun season.

Licenses may be purchased at most DNR offices, various retail outlets or ordered through the mail from the Wisconsin Department of Natural Resources, P.O. Box 7924, Madison, WI 53707.

Deer registration: All harvested deer must be registered. Registration stations are conveniently located throughout the state and local newspapers list their locations in advance of each hunting season. Check the hunting regulations for detailed instructions on transporting and registering deer.

Hunter education classes:

Everyone born on or after January 1, 1973 must have a hunter education certificate before purchasing any hunting license. Hunter education classes are offered at various locations. Some classes are taught in August and September but most safety instructors conduct classes at other times during the year. Contact the local conservation warden for class times and locations.

Sighting-in firearms: Local gun clubs, sporting associations, sheriffs' offices, and conservation wardens can direct you to firing ranges designed for sighting-in firearms. Hunters living in rural areas need to check local ordinances for any firearms restrictions. Deer hunters are reminded that it is illegal to have a firearm in their possession on the Friday immediately before the gun deer season opens unless the firearm is unloaded and enclosed within a carrying case. Those shooting at established target ranges, waterfowl hunting during the open season, and hunting on licensed game farms and shooting preserves can carry a gun on this day.

Laser sights are illegal: Laser sights, now commercially available, are currently not legal for bow, shotgun, or rifle deer hunting in Wisconsin. These sights cast a beam of light

onto a target like a flashlight. This is considered "shining," which is illegal under current state regulations.

Coyote season: The coyote season remains closed during the nine-day gun deer season in the northern part of the state to protect endangered timber wolves. A map of the closed area is included in the 1990 Wisconsin Hunting Regulations pamphlet.

Trespass: Since 1984, it has been illegal to enter any fenced, cultivated or posted land without permission of the owner or occupant. However, trespass continues to be a serious problem between hunters and land-

owners. Please, ask permission before entering any property. Trailing or retrieving game is not an excuse to trespass. Trespass problems should be reported to a county sheriff, not the conservation warden.

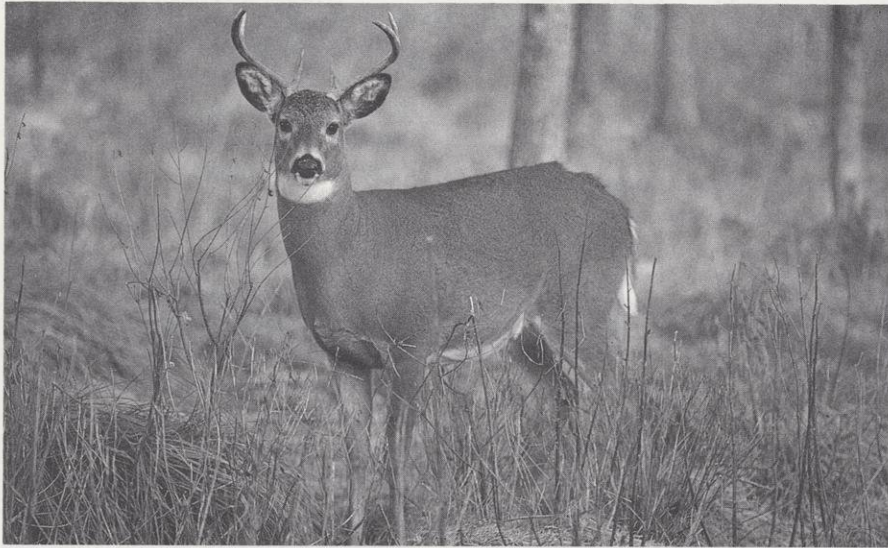
Special areas for muzzle-

loaders: Muzzle-loading rifles may be used during the regular nine-day gun season in areas open to rifle, shotgun, or handgun hunting. A few properties are open solely to muzzle-loaders for deer hunting. One is in the Apostle Islands on Basswood and Oak islands. The season runs from October 1 to 31 and requires a state deer hunting license and an additional permit from the U.S. Park Service (application deadline is August 31). The

Numbers of Hunter's Choice permits will increase again in many units to further reduce the deer population. Research shows the antlerless deer harvest needs to be as high or higher than the buck harvest to maintain stable populations.



HERB LANGE



HERB LANGE

The fall 1990 population is estimated at 1.3 million deer. Hunters using guns and bows will spend the equivalent of seven million days enjoying the outdoors while pursuing deer this year.

Fort McCoy Military Reserve has a special muzzle-loader hunt each year prior to the regular firearm season. Three state parks (Governor Dodge, Blue Mound, and Perrot) hold a restricted muzzle-loader hunt concurrent with the nine-day gun season.

The 1990 hunting regulations pamphlet and Hunter's Choice Permit sheet contains additional information on deer hunting at military facilities, state parks, and national wildlife refuges.

Tom Isaac is a natural resource specialist with DNR's Bureau of Wildlife Management. Keith McCaffery, John Huff, Larry Johnson, Chuck Pils, Bill Ishmael and Ron Groener contributed information for this article.

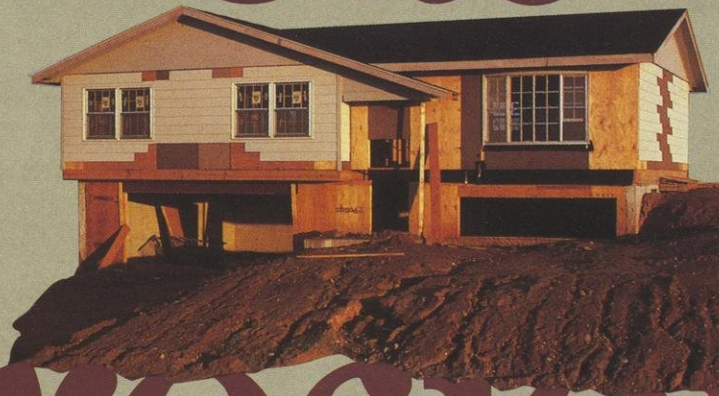
Wondering where to hunt this year? Take a look at last year's harvest totals

1989 WISCONSIN DEER HARVEST

County	GUN			BOW			County	GUN			BOW		
	Bucks	Ant-lerless	Total*	Bucks	Ant-lerless	Total*		Bucks	Ant-lerless	Total*	Bucks	Ant-lerless	Total*
Adams	2,802	3,411	6,213	632	629	1,261	Marathon	4,708	6,134	10,869	1,136	1,188	2,324
Ashland	1,549	1,213	2,765	140	90	230	Marinette	7,076	9,466	16,542	1,178	1,112	2,294
Barron	2,437	2,835	5,275	247	214	463	Marquette	2,083	2,569	4,652	604	466	1,070
Bayfield	3,008	2,198	5,217	231	219	451	Milwaukee	0	0	0	4	3	7
Brown	540	497	1,037	173	146	322	Monroe	2,695	2,210	4,905	364	341	706
Buffalo	2,695	4,681	7,411	386	315	705	Oconto	3,570	5,679	9,256	660	551	1,214
Burnett	3,043	3,449	6,496	427	419	846	Oneida	3,795	4,320	8,115	585	637	1,222
Calumet	344	481	829	118	134	253	Outagamie	1,200	2,157	3,362	436	311	754
Chippewa	1,997	2,375	4,375	302	257	560	Ozaukee	133	104	237	69	69	141
Clark	4,419	4,863	9,292	739	703	1,447	Pepin	793	1,106	1,908	102	68	173
Columbia	2,249	2,502	4,751	682	323	1,006	Pierce	1,057	1,474	2,531	151	102	258
Crawford	878	106	985	66	41	108	Polk	3,570	4,878	8,454	442	329	771
Dane	1,205	1,565	2,770	384	204	604	Portage	2,753	3,352	6,106	772	716	1,495
Dodge	791	1,035	1,827	268	155	423	Price	2,440	2,610	5,051	383	279	662
Door	1,140	1,249	2,390	207	155	362	Racine	134	140	274	48	41	89
Douglas	3,571	3,190	6,771	330	335	665	Richland	2,410	3,117	5,528	234	113	348
Dunn	2,074	2,874	4,949	256	216	475	Rock	380	506	886	144	95	239
Eau Claire	1,773	2,647	4,430	368	397	774	Rusk	3,138	3,610	6,751	163	176	340
Florence	1,658	3,120	4,780	300	209	509	St. Croix	899	1,179	2,078	224	121	345
Fond du Lac	941	1,148	2,089	312	234	548	Sauk	3,323	3,974	7,297	521	462	986
Forest	3,016	3,581	6,597	295	251	546	Sawyer	2,854	2,474	5,330	158	123	282
Grant	1,656	1,453	3,109	188	105	293	Shawano	3,071	4,075	7,148	775	663	1,443
Green	472	456	928	101	54	155	Sheboygan	641	479	1,120	205	174	381
Green Lake	1,634	2,016	3,650	492	284	776	Taylor	2,008	2,330	4,339	230	233	463
Iowa	2,646	3,789	6,435	456	204	662	Trempealeau	2,542	3,165	5,768	419	161	584
Iron	931	516	1,450	84	53	137	Vernon	1,868	1,369	3,237	134	96	230
Jackson	4,059	4,748	8,823	555	644	1,201	Vilas	2,566	2,739	5,305	357	421	778
Jefferson	586	602	1,188	147	132	280	Walworth	380	418	798	90	72	162
Juneau	2,428	2,538	4,966	375	377	754	Washburn	2,815	2,625	5,440	195	204	399
Kenosha	111	78	189	59	42	101	Washington	399	364	763	133	138	273
Kewaunee	520	850	1,372	149	92	244	Waukesha	365	513	878	201	180	383
La Crosse	1,236	2,036	3,272	207	160	368	Waupaca	3,694	6,148	9,847	1,376	987	2,395
Lafayette	680	1,783	2,463	118	79	198	Waushara	2,466	3,843	6,310	806	516	1,323
Langlade	2,146	2,139	4,285	354	274	628	Winnebago	756	1,351	2,108	296	232	529
Lincoln	2,699	3,087	5,786	460	488	948	Wood	2,268	3,354	5,622	781	725	1,507
Manitowoc	867	1,339	2,212	265	255	521	TOTALS:	139,651	170,282	*310,192	25,249	20,994	* 46,394

* Gun and bow totals include figures for deer classified as "unknown" because the animal's sex was not determined at the time of registration.

Curbing construction site



erosion



James S. Baumann

Tons of sediment — eroded from soils, exposed by residential and commercial construction, and carried by runoff into storm sewers and roadside ditches — reach Wisconsin's valuable lakes, streams and wetlands. This sediment fills bays and harbors. It smothers fish habitat and stresses fish. Taxpayers spend millions of dollars to partially clean up sediment-filled waters.

On the average, 30 tons of sediment scour from each acre of soil disturbed by construction: the equivalent of a block of sediment four feet high, five feet wide and 28 feet long.

Recognizing this serious problem, the Department of Natural Resources assisted by the Wisconsin League of Municipalities, developed a model ordinance to guide communities in stemming erosion from construction sites. Since 1987, dozens of cities, counties, villages and towns voluntarily adopted this model ordinance or upgraded existing ordinances.

In 1989, the Department of Natural Resources published a handbook of recommended practices to control sediment. **Wisconsin Construction Site Best Management Practice Handbook** can be purchased for \$4.65 + tax from Document Sales, P.O. Box 7840, Madison, WI 53707. Copies were distributed to more than 500 Wisconsin communities. These low-cost best management practices add less than one percent to the cost of a house and even less to the cost of commercial buildings.

While substantial progress has been made during the last few years, an even greater need remains. More communities need to pass ordinances and nearly every community needs to improve enforcement. Overall, sediment from construction sites is a serious water quality problem that can be controlled with simple, low-cost prac-

(top) Simple measures like staking straw bales on the downhill side of construction projects can contain soil.

(bottom) Take an extra minute to check daily that bales are firmly secured. Sloppy installation will not retard rushing water and soil following a storm.



LW-EXTENSION and WIS. DNR



SUSAN BERGQUIST

CONSTRUCTION SITE EROSION

tices. It is a problem that can be licked in the 1990s. These solutions were developed close to your home. Work with your contractor and your community to install these erosion controls when you build and when community construction projects are proposed.

photos continued through page 28

(top) Lightweight filter fabrics can serve the same purpose — saving your topsoil, keeping lakes clean and keeping the construction site tidy.

(bottom) It's not enough to pass tough ordinances. Erosion control laws must be enforced. Massive erosion from this development in Madison carried tons of soil and sediment into streets before soil-saving landscaping was in place. Presumably rain and wind carried most of this soil into area lakes.

UW-EXTENSION and WIS. DNR

SUSAN BERGQUIST





(top left) The good and the bad. Stockpiling construction materials is a fine practice, but don't store sand and soil on paved areas where rain will wash them away. Build storage piles as far from the street as you can — behind your building, on level ground and nearer grass or shrubs that can trap particles in a rainstorm. Covering your stockpiles with inexpensive plastic tarps will help save soil too.

(bottom left) Sediment ponds are a great idea on hilly and sloping construction sites. The pond can trap sediment and runoff from homes and parking lots. Suspended particles settle out of rainwater and snow melt. These neighborhood basins can be dredged and modified after construction to form permanent ponds that attract ducks and songbirds. Those that are designed to hold water through the winter make dandy skating rinks close to home.

(right) No, it's not square-foot gardening. A building material called porous pavement can be installed when established properties are renovated. The open spaces let rainwater seep into the ground while anchoring the soil. Precipitation quickly drains while curbing pollutants. Grasses and rock garden plantings can make these areas very attractive.



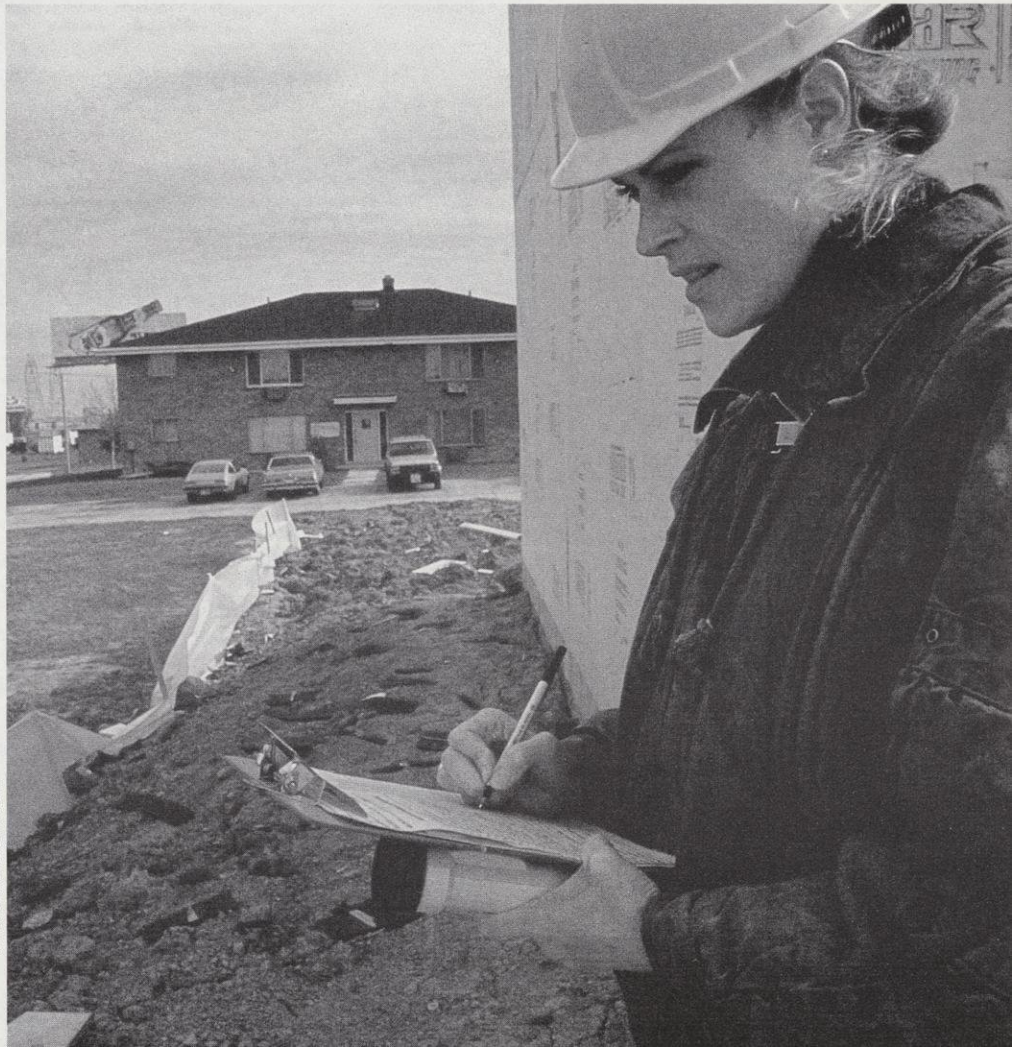


SUSAN BERGQUIST

(above) Home builders learned this trick from road builders. Compacting and grading steep slopes keeps soil and sand where you want it.

(bottom) Erosion controls are only as good as the people who use them and inspect them. Demand that your community building inspectors check that erosion controls are carried out during every phase of construction.

James S. Baumann leads the Planning and Policy Unit of DNR's Nonpoint Source and Land Management Section.



UW-EXTENSION and WIS. DNR

Pasty de resistance

Trail detail

Former golfers slip discs!

Dividing line

Travelers in search of the ultimate outdoor Wisconsin experience — one that combines meteorology, geology and history in a spirit of scientific inquiry — should make a point of standing out in the rain just north of Highway 77 at any spot between Hayward and Glidden.

Face south. The water dripping off your nose eventually drains down into the Mississippi River. But the raindrops running down the back of your sou'wester are on the way to Lake Superior.

You're astride Wisconsin's Great Divide, the Penokee Range.



Highway 77 rides the Great Divide.

DNR Photo

Now that the experiment's over, call off the clouds and hop in your car or get on your bike.

Twenty-nine miles of Highway 77 have been designated by the National Forest Service as the **Great Divide Scenic Highway**.

The highway wanders through the Chequamegon National Forest. You'll pass stands of tall, cool pines and lacy hemlocks punctuated by maple and aspen. There's a wayside just east of Clear Lake perfect for a late-summer pic-

Continued on next page



BIKE TRAILS

Different spokes for different folks

From the very first tricycle ride, you knew there was something special about this mode of transportation. On a bike you proceed at a civilized pace, slow enough to say hello and wave to stationary beings of the human and animal persuasion. At cycling speed, the landscape unfolds like a good story — page after page, mile after mile, each detail of tree and field and stream building to a whole.

Touring Wisconsin on a bike is surely one of life's finer pleasures. A leisurely ride allows you to hear the call of the red-winged blackbird, to smell the wild roses growing by the side of the road, and to savor a cool drink offered from a farmer's hose.

Thousands of miles of bicycle trails and scenic backroads crisscross Wisconsin. Perhaps *Traveler* could interest you in a few?



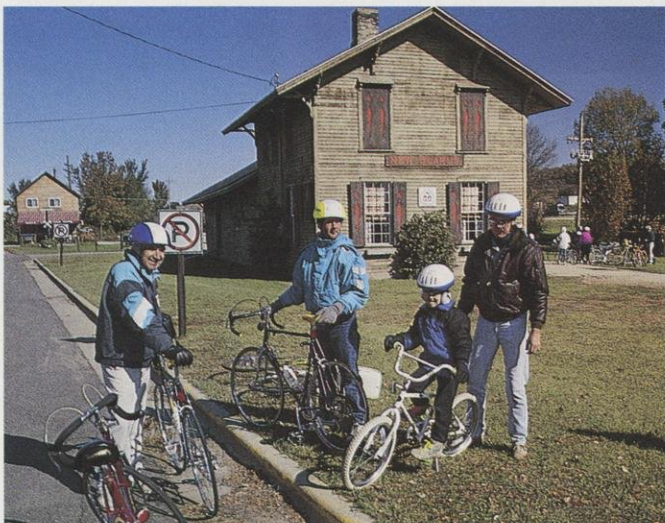
The gradual decline of railroads in the Badger State proved to be a boon for bicyclists, who now can ride where the great steam trains once huffed and puffed. Abandoned rail corridors were acquired by the Department of Natural Resources for recreational development starting in 1965. The iron rails were removed and the passages graded and surfaced with finely crushed limestone.

Today there are nine state off-road bike trails totaling 240 miles with plans to add more as the land and rights-of-way become available. All the trails have gentle grades; they can be ridden with ease by children and adults alike.

To whet your cycling appetite, we'll introduce three trails perfect for a fall tour.

Woods, winding hills and three century-old railroad tunnels are the chief delights awaiting cyclists on the 32.5-mile **Elroy-Sparta State Park Trail**, which connects the southwestern

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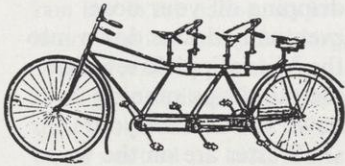
What could be sweeter than an afternoon ride on the Sugar River State Park Trail? Cyclists will find lovely scenery and easy pedaling on paths tracing Wisconsin's old railroad corridors. Robert Queen

BIKE TRAILS

Continued from previous page

Wisconsin towns of, you guessed it, Elroy and Sparta. Bike rental and car shuttle services are available at both ends; campers will find public and private campgrounds en route.

The 23.5-mile **Sugar River State Park Trail** from New Glarus (Wisconsin's "Little Switzerland") to Brodhead is part of the Ice Age National Scenic Trail. It meanders along the river, crossing the waterway 14 times. You'll pass the Albany Wildlife Refuge midway. After your ride, have a picnic or camp in New Glarus State Park. Shuttles and rentals are available in New Glarus.



Ride the route of history on the **Military Ridge State Park Trail**. The trail follows the path of the 1835 Military Road, which linked the lead-mining region of southwestern Wisconsin with Lake Michigan. Broad vistas of open farmland and wooded slopes grace the 39.6-mile route between Verona and Dodgeville. Be sure to include stops at Blue Mounds and Governor Dodge state parks.

For \$4.15, the Department of Natural Resources will send you *Biking Wisconsin's State Park Trails*, a 32-page book with full-color maps big enough to show roads, towns and points of interest, but small enough to fit in a bike-bag map pouch. Write DNR Parks and Recreation, P.O. Box 7921, Madison WI 53707.

Longer rides require planning, and **Bike Wisconsin** is happy to do the legwork for you. The company offers 12 different

two-, three- and six-day tours in August, September and October. Ride at your own pace, and when the day is done, relax in the comfort of a bed-and-breakfast inn or modern motel. Meals feature local specialties, including cranberry bread and Swiss fondue. Bike Wisconsin's October 12-14 "River Rambler" tour along the Mississippi River and through Wisconsin's coulee country is a good bet for fall color.

If you'd like to strike out on your own this fall, carry a copy of the *Wisconsin Bicycle Escape Guide*, which maps out over 10,000 miles of bike routes according to traffic pressure, road conditions and available facilities. Send \$2.25 to the Wisconsin Division of Tourism, 123 W. Washington Ave., Madison WI 53707.

There's one more thing a two-wheeled traveler should add to a Wisconsin itinerary: **The Otto Grunski Polish Festival**, August 10-12 in Menasha, Winnebago County. Menashites say mythical hometown boy Otto invented the bicycle. Who are we to argue? Have a *pierogi* and stop asking so many questions! The event features a world-class criterium (bike race) for competitors of all ages.

Elroy-Sparta National Trail, Inc. (608) 463-7109; Sugar River State Park Trail, (608) 527-2334; Military Ridge State Park Trail, (608) 935-2315; Bike Wisconsin, (608) 251-3020; Otto Grunski Polish Festival, (414) 734-3358.



SCENIC HIGHWAY

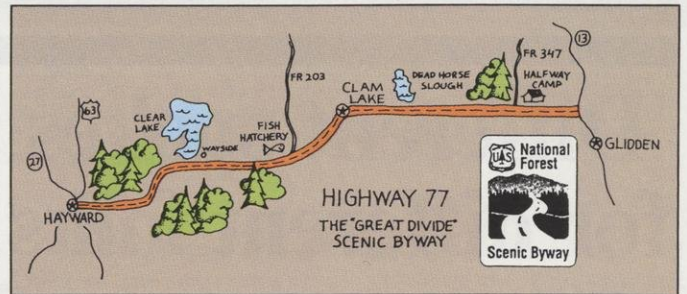
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nic. Or visit the bass and walleye rearing ponds operated by the Wisconsin Department of Natural Resources on Forest Road 203 near Two Deer Lake.

National Forest campgrounds are nearby for those who linger a little longer to pick berries, swim, hike or fish. Wildlife watchers will find Dead

ings still stand. The former watering hole for lumberjacks is located between Clam Lake and Glidden east of Forest Road 347.

The Great Divide Scenic Highway is one of 52 national scenic byways in the nation. Why not take a ride and get acquainted with Wisconsin's Chequamegon?



Horse Slough east of Clam Lake a good place to set up the spotting scope. Look for loons!

History buffs won't want to miss Halfway Camp, where old fieldstone build-

Chequamegon National Forest, (715) 762-2461. For a *Scenic Byways* guidebook, send \$11.95 to the Forest Education Foundation, P.O. Box 25469, Anaheim, CA 92825-5469.

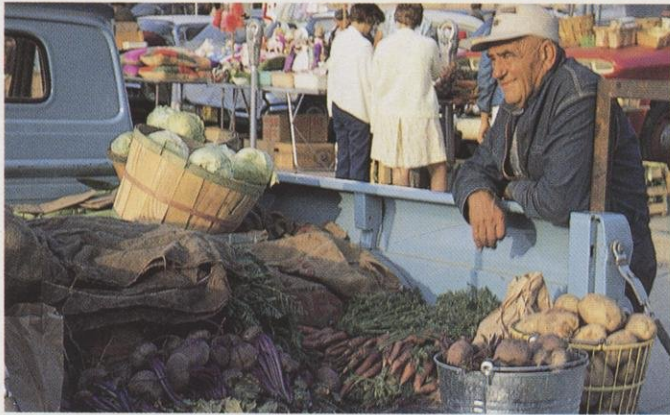


Robert Queen

Fat-tire fun

Stump-jumpin', fat-tire fanatics will get their fill of mountain-biking fun on September 14 & 15 during the **Chequamegon Fat Tire Festival**, the premier off-road riding event in the Midwest.

Held in Cable and Hayward, the festival features the Chequamegon 40, a mountain bike race on the American Birkebeiner ski trail finishing at Telemark Lodge. Over 1,000 riders are expected to tear up the trail this year. Less experienced cyclists can tackle the Short & Fat 14-mile race/tour route. (715) 798-3811 or (715) 739-6608.



DNR photo

Market report

Where can you pick a peck of pickled peppers or find the apple of your eye?

Try Crivitz. Or Ferryville. Or Prescott. Or any one of the villages, cities and towns in Wisconsin.

Take Home Something Special From Wisconsin, a free booklet available from the Wisconsin Division of Agriculture, includes a directory of roadside markets, municipal farm markets, maple syrup and honey producers, wineries, orchards, pick-your-own farms and cut-your-own Christmas tree growers. Send a self-addressed, stamped envelope and some of Wisconsin's best recipes will accompany the publication! Write Wisconsin Division of Agricultural Resource Management, Marketing Division, Dept. S., Box 8911, Madison WI 53708.

A ferry nice ride



The good ship Badger.

Mich./Wis. Ferry Service

You love the water, but you're not a sailor. You love boats, but you hate scraping barnacles and polishing teak. You like the state of Michigan (a little), but you love Wisconsin.

Has *Traveler* got a deal for you!

Leave Kewaunee on the carferry *Badger*, cross Lake Michigan, explore Ludington, Mich. for two hours, then turn around and come on back!

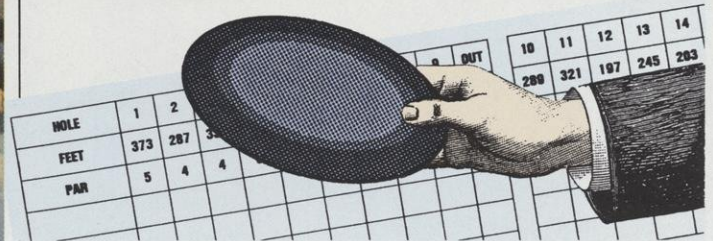
The 10-hour round trip on the 520-passenger ship

is a relaxing way to enjoy a great day on a Great Lake. No decks to swab, no charts to read — the crew does the work while you:

1. Sit on a deck chair and let the fresh lake breeze clear your mind.
2. Watch the clouds shift on the horizon.
3. Engage your fellow passengers in conversation over a snack from the galley.
4. Lose yourself in that novel you've been meaning to read for months.
5. (Your choice.)

For prices, departure times and reservations, contact the Michigan-Wisconsin Ferry Service, (616) 843-2521. For a copy of the *Great Lakes Cruise Handbook*, call (616) 582-2814. Kewaunee County Promotional Association, (414) 388-4371.

New spin on the game



Are you bored with badminton? Does croquet make you want to croak? To heck with jai alai, you say?

Sounds like you're ready for **disc golf**.

Disc golf is similar to regular golf, but you don't use clubs, balls, a golf cart or a caddie to play. A golf disc (a smaller, heavier version of a Frisbee) is all you need to tour the links.

Consider playing a round if your Wisconsin adventures bring you near Milwaukee's Brown Deer Park, Sheboygan's Vollrath Park or Plamann Park in Appleton, each of which has a free, professional disc golf course.

On the links you'll get a scorecard with the hole length and par — Brown Deer, for instance, is an 18-hole, par 70 course. Tee off with a soaring drive down the fairway, chip to the green and take a deep breath before you putt for the pin (a metal basket known as a Pole Hole). Roughs and water hazards will test your skill and patience; demonstrative players should remember there are no clubs to wrap

around trees or pitch into ponds.

According to its proponents — the Professional Disc Golf Association (PDGA) — disc golf is the ideal fitness sport for the whole family. It provides aerobic exercise for the upper and lower body, builds endurance, and promotes cardiovascular conditioning. You can play any time of the year, even in the snow if you are so inclined. (Check first to see if hot chocolate is available at the 19th hole before a January game.)

Disc golf is the sport of the future, they say. There are 250 disc golf courses in the nation and the PDGA has over 5,000 members. Who knows? Someday the Brown Deer course may be as famous as Augusta or St. Andrew's. Play it now before the green fees are out of reach.

Great Lakes Disc Golf Association, (414) 964-0112; Milwaukee County Parks & Recreation, (414) 257-4856; Fox Cities Convention & Visitors Bureau, (414) 734-3358; Sheboygan Visitors & Convention Bureau, (414) 457-9495.



Need more information?

Travel questions: 1-800-372-2737
 Travel publications: 1-800-432-RIP
 Road conditions: 1-800-ROADWIS
 Outdoor recreation: (608) 266-2277
 (608) 267-6897 (TDD)
 Historical Society sites: (608) 262-9606

Make a Date



Pencil in on your calendar:

August 17-19: **IMS/Road America 500K**, Elkhart Lake, Sheboygan County. The famous auto race draws international drivers and a lot of people hoping for a glimpse of actor and formula racer Paul Newman. (800) 365-RACE.

August 23-26: **58th Annual Rutabaga Festival**, Cumberland, Barron County. The 'bagas are out in force during the parade, carnival, dance and pepper-eating contest. (715) 822-FEST.

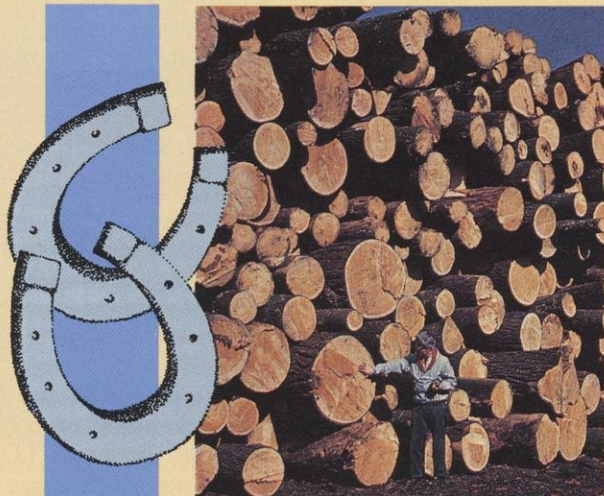
September 1-3: **Wisconsin State Horseshoe Tournament**, Eau Claire, Eau Claire County. A dead ringer for a good time. (715) 832-3603.

September 6-8: **45th Annual Lake States Logging Congress**, Green Bay, Brown County. Sawing competitions, chain saw sculptures, log-splitting displays and some mighty big trucks and trees. (414) 494-9507.

October 6-8: **Lake Superior Ragtime Society Big Bash**, Superior, Douglas County. Scott Joplin gets the joint jumpin' during a dance and concert while musicologists and the curious attend a ragtime seminar. (800) 942-5313.



Come Home to Wisconsin ... where you're among friends! Write for the Calendar of Events, Wisconsin Division of Tourism Development, 123 W. Washington Ave., P.O. Box 7606, Madison WI 53707, or call 1-800-432-TRIP.



DNR photo

It's scrumpy!



Savor a Cornish pasty.

Robert Queen

During Wisconsin's lead-mining boom in the 1830s and '40s, thousands of hard-working Cornish miners settled in Mineral Point to extract galena ore. They brought along their customs and their cuisine, including pasties (meat- and vegetable-filled pies), saffron cake and "scrumpy" (a drink similar to apple cider).

Celebrate the flavors of old Cornwall on August 11 & 12 at **Pendarvis**, the restored Cornish village in Mineral Point. Costumed guides cook the special dishes over open hearths and on a cast-iron cook stove. (If you ask them nicely, the ladies may share a secret family recipe.) Call (608) 987-2122 for information.

Work party



Many hands make light work on the trail.

Robert Queen

Who says Wisconsin is all play and no work?

Not the **Sierra Club**. The conservation organization cordially invites those of strong back and stout heart to spend this summer vacation toting logs, whacking brush and hoisting boulders on a portion of the Ice Age Trail north of Medford in Taylor County.

The 10-day Service Outing, running from September 9-19, offers participants the chance to work with nature up close. You'll be out in the Chequamegon National Forest relocating and maintaining a section of the 1,000-mile trail, which tracks the ancient path of the glaciers.

Back at camp on one of Wisconsin's famed Northwoods lakes, the trip leader and cook prepare supper while you relax around a

fire with fellow trailblazers, trading liniment recipes for sore muscles and discussing where to fish tomorrow.

Fish? That's right. This may be a working vacation, but it's still a vacation! Several "free days" are on the schedule for you to hike, explore and enjoy the wildflowers and wildlife of the forest.

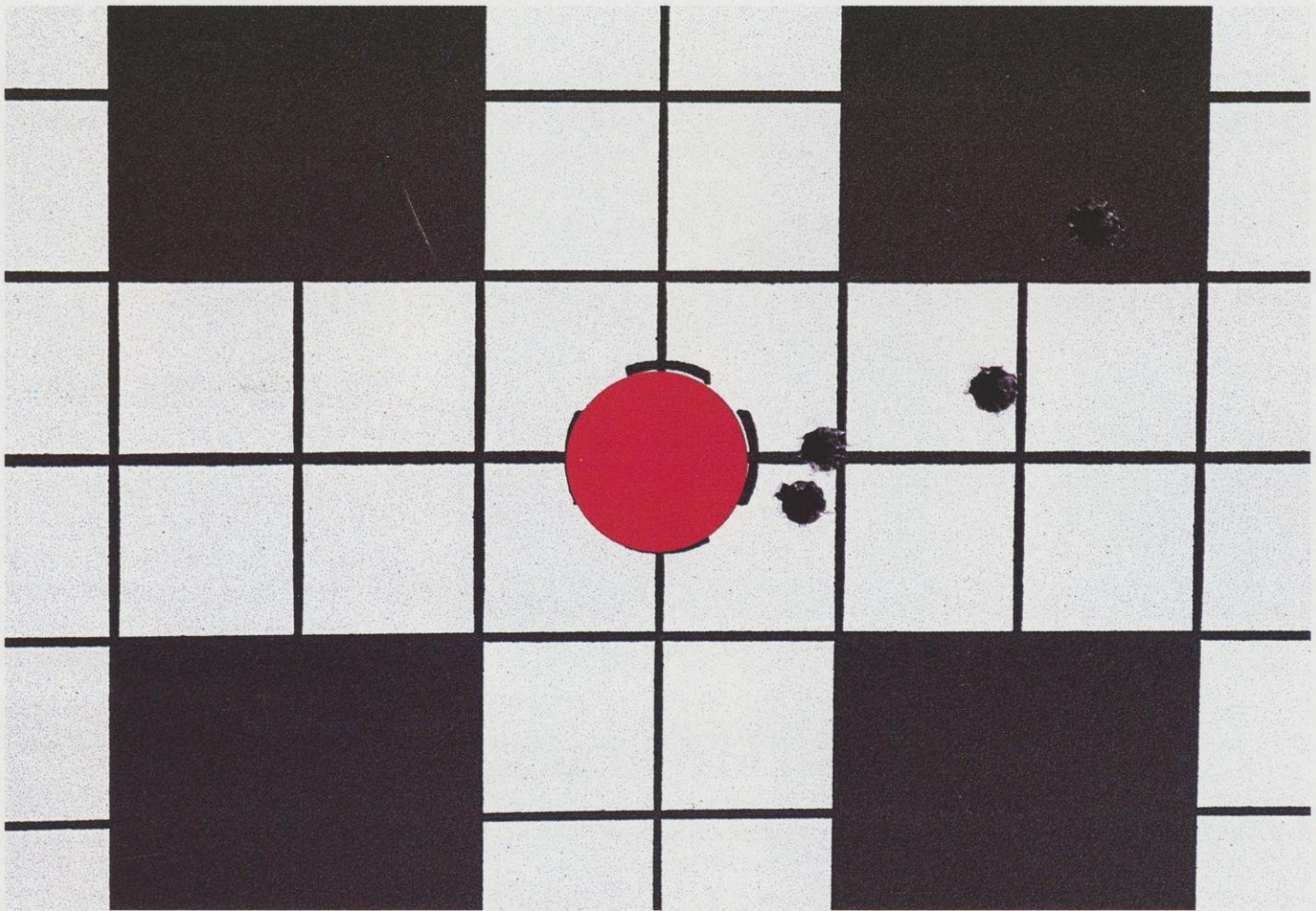


Write the Sierra Club Outing Department,

730 Polk St., San Francisco, CA 94109 and ask for details on trip #90294, or call the club's John Muir chapter, (608) 256-0565. For information on the area, call the Taylor County Tourism Council, (715) 748-4729 or the Chequamegon National Forest, (715) 762-2461.

Wisconsin Traveler is produced by Wisconsin Natural Resources magazine in cooperation with Wisconsin's Division of Tourism Development, Department of Transportation, and State Historical Society.

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ALL ARTICLE PHOTOS BY ROBERT QUEEN

HIT YOUR MARK

Summertime is the right time to start sighting-in your guns for the fall hunt.

Dave Kunelius

Three words are key to developing rifle-shooting accuracy: practice, practice, practice! They are the same words that will help you improve at any task or sport like golf, piano playing or figure skating.

For the hunter, target shooting can be a seasonal pastime or a year-long hobby. In fact, field results during those all-too-short hunting seasons will improve in direct proportion to the time spent practicing. You're the one who needs to practice because, barring any mechanical problems, any firearm will perform identically every time the trigger is squeezed.

Unless you own property where

Mother Nature provided a safe backstop and local zoning regulations allow shooting, an established shooting range is the best place to practice. Gun club ranges designed solely for shooting have many built-in safety factors like a proper backstop and fencing to keep the line of fire safe. Ranges also have accurately measured distances, target stands, a shooting bench and maybe even a roof to allow shooting on rainy or snowy days. Membership fees are usually minimal and provide shooting recreation all year long.

Most shooting ranges open their facilities for a nominal fee to non-

members for sight-in days prior to the November deer hunting season. If the clubs are near metropolitan areas, those days can be quite hectic with a large number of fellow hunters rushing out to check out "Ol' Betsy." There might even be long waiting lines to take turns shooting. Feeling rushed or pressured to fire your rounds and move out won't result in your best shooting.

Take a hint — do your shooting long before there are lines. The long daylight hours of June, July and August are ideal times to take a couple of trips per month to the shooting range. It's also a good time to take



Firearms, ammunition, a rest or sandbag, safety goggles, ear protection and targets should all be taken to the firing range when you're sighting-in.



Hold the firearm shoulder-tight with your dominant hand.

your son, daughter or a friend along and introduce them to the sport of shooting. After those summer practice trips to the range, a few brush-up trips in September and October will turn out to be confidence builders. Again, the key to improvement is practice.

You'll need some equipment. Safety equipment for the eyes and ears is mandatory. Wear shooting glasses. They protect your eyes from injury and increase brightness or decrease glare depending on the tint used. Amber and yellow tints add brightness on dull, cloudy days; gray and green tints decrease glare on bright, sunny days. Some shooting glasses are designed to fit right over eye glasses, so there's no need to invest in expensive prescription shooting glasses. Shooting ear muffs, or ear plugs will prevent any hearing damage that might be caused by shooting. Cutting out the loud crack or report when firing will also improve accuracy by decreasing blinking and any flinching.

Bench shooting at a rifle range also requires some type of rest for the rifle. Shooting rests are available, but if you are just starting out you might make a rest using bags of shot (if you are a shot shell reloader), a padded wooden block, or the cut-off leg of an

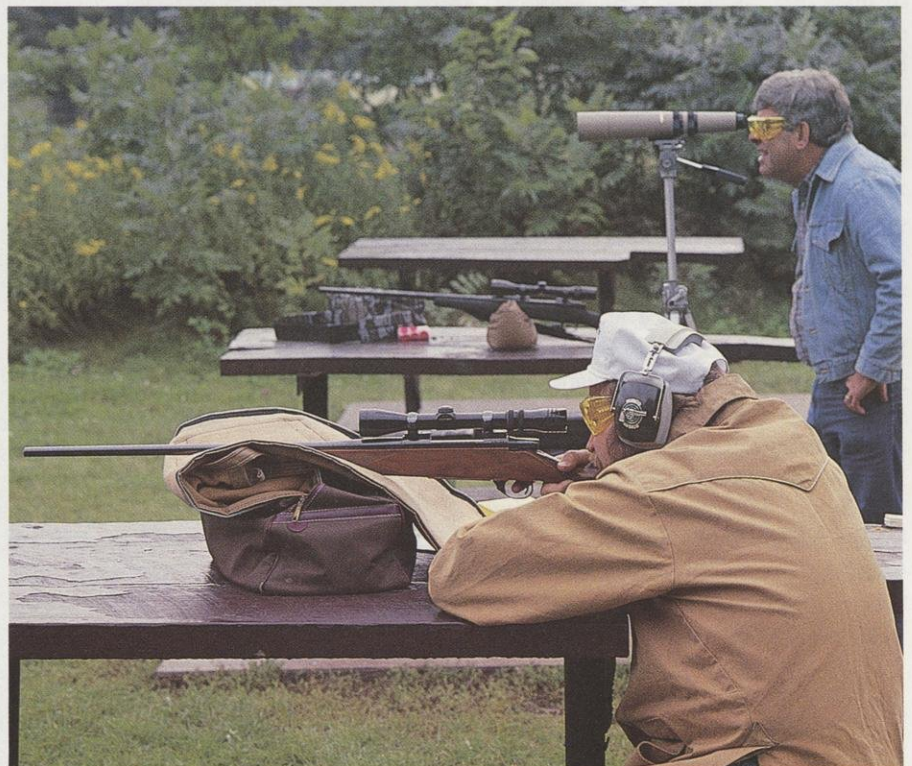
old pair of bluejeans filled with sand. The wooden blocks usually found at a shooting range can be padded with your rifle case to prevent scratching of the stock during shooting.

Using sand bags will decrease contact between your moving, jiggling body and your rifle to give you as

firm rest as possible. Both the stock and butt of the rifle should rest on sandbags. Elevation can be changed by squeezing more sand under the gun butt or flattening the sand bag out.

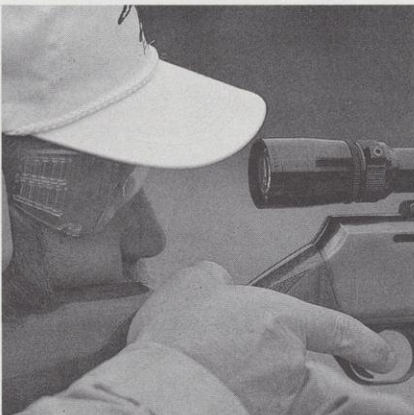
Whether you're a left- or right-handed shooter, the dominant hand or trigger hand should hold the rifle tight to the shoulder. The sand bags supporting the rifle should be high enough on the shooting bench so you can place your cheek comfortably against the rifle stock without undo crouching or bending. The rifle should fit naturally and comfortably

Bring along a buddy and a spotting scope. The shooter concentrates on aiming and the spotter provides feedback to make sight adjustments.



to your shoulder. The sight picture through the scope should be clear without having to move your head back and forth. The same setup would hold true for shooting with open (ramp or buckhorn), or peep sights.

You'll also need some targets. Many targets have one-inch square markings around the bull's eye. This will help determine what fine sight adjustments have to be made after shooting a three-round group. A spotting scope will help you view shot placement on the target and aid in making sight adjustments. Bright orange dots placed on the bull's eye help shooters concentrate on the target. Ammunition should be the same as you plan to use for hunting. Buy the same brand and bullet weight for consistency. If possible, buy as many boxes of shells as you plan to use for practicing and hunting at the same time. Record the manufacturer's lot number so you can buy the same lot of ammunition if you buy only one box at a time. After extensive practicing, you'll probably only need one shot in the field to bag your game.



Check that the target lines up vertically and horizontally with cross hairs or sights before shooting.

The rifle you shoot should be in good mechanical repair. The bore should be cleaned and oil-free before shooting. Check the bore for any fouling or obstruction before shooting. Make sure the scope mounts are secure. Try to move the mount. If it's loose, remove the scope, loosen the mount screws and retighten. You should use a drop of Lok-tite or other lubricating oil on the screw threads to

insure against loosening. The scope rings should be tightened the same way. If the rings are loose, recoil from shooting will slide the scope in the rings. You'll likely see scratch marks from such movement after you're done.

If mechanical problems cause accuracy problems, take your rifle to a reputable gunsmith.

When you shoot, take your time. Think through your shots. Relax and settle in on the bench. Make sure you feel comfortable. Be alert to the way the rifle feels as you hold it to your cheek and shoulder. Think about your view through the scope. Make sure the cross hairs of the scope are aligned vertically and horizontally with the lines on the target.

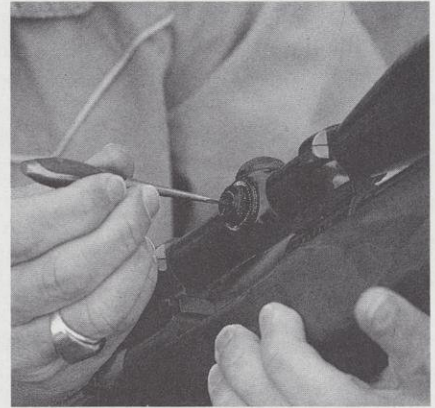
Take a deep breath and squeeze the trigger. Repeat this procedure in the same deliberate manner for each shot. Fire at least three shots at your target to form a pattern of where the bullets are hitting. Shoot at least three shots before adjusting the scope. The three shots should be grouped. Where the shots lie in relation to where you centered the cross hairs will dictate how to adjust your scope.

Generally shooters concentrate on shot placement at 100 yards. If the shots aren't grouped on the target at 100 yards, move the target to 50 yards and try another three-shot group.

For most calibers, a pattern that is three inches above the bull's eye at 100 yards will allow a "dead-on" hold at distances up to 250 yards. That means that the rifle will be properly sighted-in for that distance. For most Wisconsin hunting that's a long shot. Hunting in western states will at times provide longer shooting, but most responsible hunters will only attempt a long shot if the game is standing and the hunters are shooting from a rest.

After shooting the three shots, check the target and determine what changes need to be made. Most scopes will adjust in quarter minute increments, which means the point of aim will change at 100 yards one quarter inch for each click adjustment

made. If the center of the grouping is one inch right and four inches high at 100 yards, the scope must be changed four clicks left and four clicks down to achieve the point of aim of three inches high at 100 yards.



Make sight adjustments gradually until groupings of three shots produce a point of aim three inches high at 100 yards.

With open sights, adjustments in the rear sight should be made in the same direction the shooter wants to change the bullet impact. If you want the bullet holes to move left, move the rear sight left. Trial and error will dictate the amount of movement.

Judge your own shooting. When you're confident both you and the rifle are performing equally well, begin practicing other shots.

Simulate your field hunting situations at the range. Practice shooting from standing, sitting and kneeling positions. Practice shot placement by swinging the rifle from off-target to on-target, from the left and right sides.

While rifle hunters get a great deal of recreation pursuing fox, coyote, bear and deer, sport shooting can provide a lot of satisfaction and fun. Chances are your game-hunting experiences won't give you enough experience to make you an accurate shooter. Accuracy must be developed on the range and the key is practice, practice, practice. ■

Dave Kunelius leads the Resource Management Information Unit for DNR's Bureau of Information and Education.

Readers Write

ON THE MOUND

I have always enjoyed your magazine for its informative materials and wonderful illustrations. In the interest of accuracy, however, I must point out that the wetlands timeline published in "Wetlands, Wonderlands" (April 1990) contained one substantial error. Attributing a date of 8,000 B.C. to the Bird Mound at Lake Wingra is incorrect by some 9,000 years.

Archaeological research, including a great deal at Wisconsin's state parks and other DNR lands, has demonstrated that mound building did not begin in Wisconsin until circa A.D. 1, and that animal-shaped effigy mounds were constructed during the period circa A.D. 600-800, perhaps lasting until A.D. 1,100. This is not to say that Native Americans did not utilize wetlands since their earliest known arrival to Wisconsin some 13,000 years ago. Indeed, research continues to demonstrate intensive settlement adjacent to and exploitation of wetland resources throughout prehistory and into the historic era.

*Robert F. Boszhardt
Regional Archaeologist
Mississippi Valley
Archaeology Center
La Crosse, Wis.*

Count on an archaeologist to dig up the dirt! You're absolutely correct — we misinterpreted our research and came up with the erroneous date. We can't even claim this one as a typo! Thanks for the correction.

CRANBERRY CONUNDRUM

I enjoyed your "Wetlands, Wonderlands" supplement.

I was concerned, however, about a bar graph accompanying the article "Wisconsin's Wetland Way-sides." It suggested that the largest loss of wetlands is attributable to cranberries.

Cranberry marshes are some of the highest functioning wetlands in the state. Growers have long recognized the value and beauty of wetlands. In many instances, growers' management practices have enhanced wetland functions and wildlife habitat. They have also created many acres of wetlands in the state.

Your readers need to know that a cranberry wetland is a managed wetland system. Studies have shown that many wetland functions are maintained or increased by growers through their water management practices.

Here in Wisconsin, growers own and control about 110,000 acres. Roughly nine percent are in cranberry beds, the remainder in dikes and ditches as well as reservoirs, wild land and forested land. These are beautiful areas which abound in wetland wildlife. In addition, these remote areas are preserved at no cost to the state.

We are sure the activities of cranberry growers in wetlands are beneficial and compatible with nature. We invite residents to visit the growing regions to view firsthand this tremendous resource.

*Tom Lochner
Executive Director
Wisconsin State
Cranberry Growers
Association
Wisconsin Rapids, Wis.*

Having lived my entire life in the Warrens area surrounded by wetlands, I was excited to see a special sec-

tion devoted to wetlands in the April 1990 issue.

My first disappointment came when I found there was no clear definition of a wetland given in the article.

Then, on page 13, I saw the bar graph. What exactly was meant with this graph? Does it represent the total loss of wetlands since the white man first moved in? The acres of wetlands lost per year, every five years, every 10 years? Aren't cranberries a part of agriculture? Why were they separated out? Where was this data taken from? This graph is terrible!

True, the area I live in has been altered to support a cranberry monoculture, but the basic character of the wetlands has not been changed. Has any consideration been given to the number of "natural/wild" wetland acres created by the cranberry growers? They have added to the natural diversity and recreation potential of this area through the creation of lakes and ponds where none occur naturally. Most of the waterfowl production in this area occurs on cranberry marshes. During drought years, the cranberry marshes were the only places around here that had any ducks and geese.

*Becky Potter
Warrens, Wis.*

The chart on how we lose wetlands is based on a summary of federal wetland alteration permits pending and issued from 1982-1989. Historic losses and losses to currently unregulated activities were not included.

There is cause for concern about the alteration of wetlands to support cranberry culture. Diverse natu-

ral wetlands are forever changed once converted to cranberry monoculture; the manipulation of water levels create deep-water marshes where there were once varieties of bogs and swamps. This conversion eliminates or at least greatly changes the mix of plants and animals unique to these wetlands. Soil erosion from construction activities in cranberry marshes coupled with fertilizer and pesticide use can be detrimental to the water quality of nearby natural wetlands, lakes and streams.

The Department of Natural Resources works with cranberry growers to select sites and develop cultivation techniques that change natural wetlands as little as possible. Readers who want to know more about research on cranberry cultivation should refer to "Of berries and bogs" in the November/December 1988 issue of Wisconsin Natural Resources.

By the way, definitions of Wisconsin's four basic types of wetlands — swamps, marshes, bogs and fens — are listed under all-capital-letter headings at the beginning of the first article in the wetlands supplement. Sorry you missed them.

FAR-FLUNG FANS FANTASTIC!!!

Your magazine is such a treat. I've been a subscriber on and off for about five years and have watched the growth and improvement of your magazine.

Being from Madison, and currently living in Iowa — the land of lime-green leisure suits and Chevy Novas — your magazine has kept my mind where it wants to be . . . in Wisconsin.

Keep up the great work, and thank you for such a wonderful publication.

*James Emery
Ankeny, Iowa*

Every time I take a few minutes to read another article in Wisconsin Natural Resources I think, "I should write . . ." to tell you what a great magazine it is. Finally, after almost four years of living in Muncie, Ind., I'm writing.

I didn't need to move here to appreciate Wisconsin — being from Superior, I've done that all along! But when I get my copy, I appreciate Wisconsin all the more. Imagine what it's like to live where the only water you see is in people's basements after you've lived on the shores of Lake Superior. Your magazine is one of the finest I've ever seen. The photography is superb; the articles are timely, informative and well-written. Thanks for the effort you all put into giving me a little taste of home every other month. It's been a great way to keep in touch while I finish up my degree at Ball State.

*Jane Stephan
Yorktown, Ind.*

As usual, your publication was very well done and is quite timely. I am a Wisconsin native now living in south central Minnesota working for the U.S. Soil Conservation Service (SCS). In my role as district conservationist, I have encountered similar problems and solutions as stated in the article "What's a Wetland Worth" (April 1990). Although the SCS does not regulate the use of land, we are constantly bombarded by the desire of farmers to develop acreage at the loss of wet-

lands and the critters and plants living in those wetlands.

*Donald L. Schuster
Mankato, Minn.*

EarthNotes

Issue 2 of "Earth Notes" in the April 1990 issue was outstanding! Being a Wisconsin resident who was raised on well water in Washington County and an avid fisherman, I am quite concerned about our water pollution problem. Wisconsin's lakes, ponds and rivers are her greatest resource. They must be protected for future generations.

*Morgan Gottschalk
Milwaukee, Wis.*

STEWARDSHIP

I think the article about the Stewardship Program (February 1990) was a terrific way of reminding citizens they can make a difference. The projects in motion seem to aim at the heart of the environmental problems so vivid in our society. I am not presently a member of a specific organization but am very interested in the preservation of the environment and would like to become more involved. Can you give me some ideas on how I would go about doing this?

*Carla J. Hoffman
Eau Claire, Wis.*

Start by recycling, composting, cutting back on energy use, and supporting candidates, legislation and companies friendly to the environment. These are just a few of the small changes you can make in your own life, but they make a big difference!

As far as what group or groups to join, ask yourself a few questions: Are the environmental issues that con-

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searchers hadn't examined a single doe with polished antlers. Pennsylvania studies by Roger Latham estimated about one in 8,000 to 10,000 does are antlered.

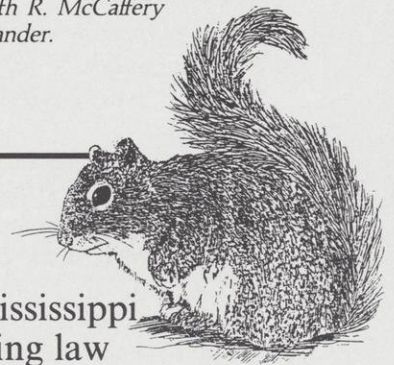
We've aged more than 20,000 deer annually during each of the past several years and the two antlered does mentioned here are the only ones that have come to my attention. Perhaps we'll be on the lookout for antlered does next fall at registration stations.

Normally, ovarian hormones prevent antler development in white-tailed does. However, abnormally high amounts of the hormone testosterone will cause antler growth in some does. Does with antlers in velvet are normally fertile. Does with polished antlers are believed to be hermaphroditic and infertile. They may lack exterior male genitalia and possess rudimentary vaginae. Researchers will need to thoroughly examine more specimens to better understand the phenomenon.

Meanwhile, some enterprising individual will likely start keeping records. How about a Boone and Crockett Doe Club! I'd suggest two classes: one for does with velvet, the other for polished antlers. An account in the March 1989 issue of *Outdoor Life* may have described the current record-holder: an Ohio bowhunter who bagged an 11-point doe in velvet. ■

DNR Northern Forest Biologist Keith R. McCaffery studies deer from his base in Rhinelander.

NEXT ISSUE: Coulee Country fall Bushytails Busy boating on the Mississippi Wisconsin's new recycling law



cern you most local, national or global in scope? Do you enjoy working outdoors? Do you enjoy being politically active? Your answers will govern your choice of organizations, since groups take different approaches and have different agendas. One may be devoted to saving the Amazon rainforest while another may need people to plant trees in a community park. Some ask members to write letters and work on proposals for national environmental legislation; others may want you

to circulate petitions in your neighborhood to protect a local wetland.

Write the Citizen Involvement Program, Conservation-Environmental Network, Bureau of Information and Education, P.O. Box 7921, Madison, WI 53707 for a list of groups in your area. Call a few and ask about their philosophy and activities. Attend a meeting or two to get a better idea of what the group is all about. When you find one that feels comfortable, join!

Calls

Justin Isherwood

I have a Faulk's number C-50 crow call, at least this is what the logo says on the walnut barrel. Also, a few others: a CH-44 goose call, a pewter and wood Audubon bird call, and a bellows-type Olt squirrel call. P.S. Olt and Company use birch for the call barrels, Faulks run more to maple and the newer models are plastic which sound the same, but don't feel as good.

It isn't that I wish to collect call boxes. I think it's to collect the wild noise and the idea that people can and would talk to the animals: a latter day rendition of Noah and the Ark.

I realize this call thing has about it the peculiar eccentricity of an English choirmaster who collects muffin tins or weather vanes. After all, what can I say is my purpose when I don't want to eat who I'm talking to?

Still, this whole call business is darn peculiar.

I understand in Minneapolis they hold an annual contest to determine who can issue the most loon-like call. Thousands attend. Some in costume. All attempting to reproduce that anachorism of loon noise in the city. For those who have never heard, it is a trembling length of vibration, the sound too bold for the modern ear, too insistent, less bird-like than the mating whoop of an air compressor.

The call companies do not sell loon calls because sane people don't shoot loons. Never have. This is because people who maintain respect for the bird and their digestive tracts don't eat loons. But then, neither do normal people eat crow, yet there are crow calls, which shoots that whole line of argument.

The Hudson's Bay Company sponsors a Canadian contest for those who can make a verifiably wild noise without artificial implements. There is a Cree who can, with his tongue, teeth and cupped hands, sound the



very same as the goose Mr. Faulk installs in maple wood. I've heard this guy several times and every time I feel my reality bend. Out of him lifts all the complex dialogue and ideology of a goose flock: swaying, swearing, spending insult, threatening litigation, telling lies and dirty stories the way geese do. It is uncanny and unnerving. I've heard him imitate the rumble-thump of a sharp-tailed grouse and you'd think one just broke cover six yards off. That Cree is less a caller than a conjurer.

It disappoints me that call companies tend to restrict their manufacture to edible species, except for the crow. While I grant they offer quite an assortment — pintails, mallards, goose, rabbit, squirrel, deer and fox calls — it strikes me there are lots of animals that people might want to talk to, if not necessarily eat. Surely the Olt and Faulk folks would have a ready call market for a Holstein and a Brown Swiss, sheep, goat, horse, dog, cat . . . you know, household calls, maybe something to get through to the kids when their stereo is on full choke.

Even this range of calls misses the mark. There are people, millions of people, who'd like to talk to cardinals, robins, blue jays and purple martins; hundreds of others who'd reach out to hawks, whales, wolves, coyote, gophers and cranes.

Myself, I'd like a hawk call, a nice black cherry barrel with a high C of the kind some revved-up singers aptly near the last note of the "Star

Spangled Banner." The same note the car brakes hit when worn down to the rivets . . . eeee! Or the grunt-croak of a great blue heron, something like the concluding note of a toilet flush.

Better yet, the land-flattening, head-ringing, mastitis-inspiring, whoop and trill of the sandhill crane. Now that is noise. I realize I'm revealing my own psychological paralysis, but sandhill noises do something to me. Never mind X-rays and curies, this bird's radiation alters my bones. I want to hang a stick of that energy around my neck and on an early summer morning cut loose with an awhoo . . . awhoo . . . maybe break into dance if no one is coming down the road.

The sound transforms the world. I have seen my fields tip into sandhill noise. I hear that call and the smell of birch rind and sphagnum moss is suddenly present. A breeze stirs of the kind made by lonely lakes and marshes. I am a hunter of such places. The call is as much for the creature as the place of it. I want a call in my pocket, a little gadget I can withdraw and begin this dialogue with the wider realm of being.

Anybody with any business sense at all can see there's room on the ground floor for entrepreneurs. Opportunity for experimenters and inventors to discover what combination of aluminum, plastic, wood and reed might produce the sound of the night heron, sandhill, chipmunk, muskrat, blue jay, saw-whet owl. . . we're talking capitalism here folks, a new economy. No nature-freak will thereafter go to the woods without his/her pockets filled with calls. They will carry them in bandolier belts, a different call in every loop. Calls, cries and whispers tuned to every species on the planet, and to do no more than bring them closer, or is it us? From



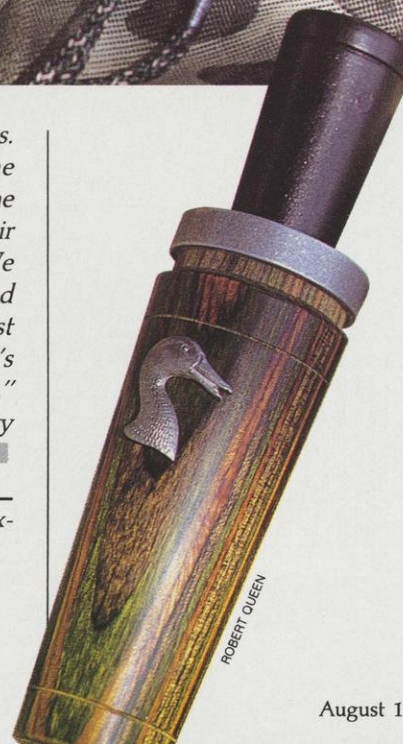
ROBERT QUEEN

California grey whales to English sparrows, row upon row of gleaming calls at your favorite hardware and sporting goods store, in walnut, birch and virgin plastic. Everything from loon calls to invocations of the lavender salamander.

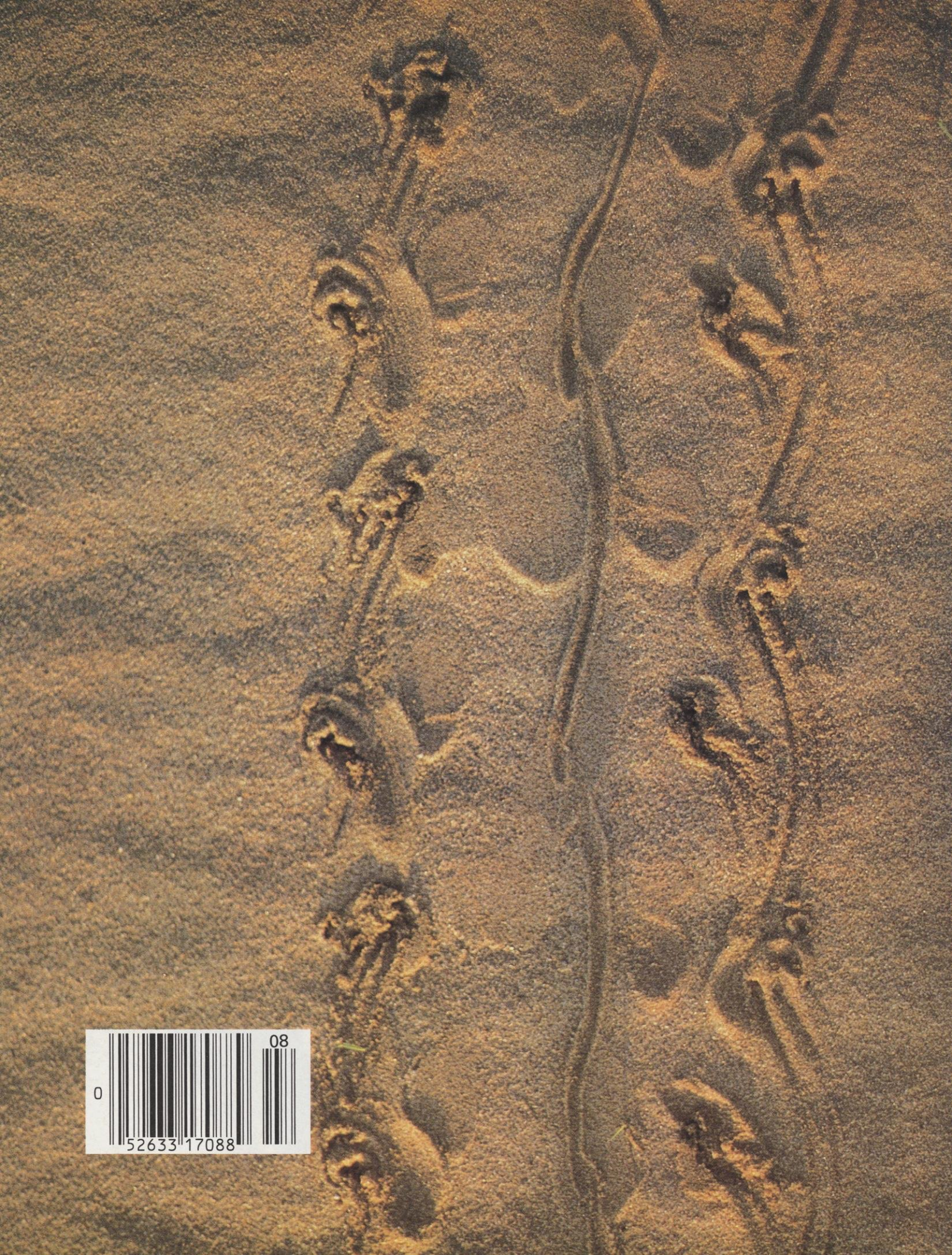
Finally, everyone beckoned to nature will have some gear to polish. Collectors can arrange hundreds of calls in knotty pine cabinets: one for every species, each in its handsome green-felt liner. The pricier sporting emporiums will stock engraved, handmade calls with inlay and silver plate, calls handed down generation by generation. And at last the nature-

freaks will be equal to the hunters. They will sit around great stone hearths unto old age telling of the times they lured chickadees to their very hands with 12-gauge Faulks. We will pass the calls hand to hand, and the stories of the watcher will at last satisfy and glint brightly in the child's eye. And they will whisper, "Please," as all old hunters know, "tell the story again." ■

Justin Isherwood farms, writes and explores nature in Plover, Wis.



ROBERT QUEEN



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