Wisconsin natural resources. Vol. 12, No. 6 November/December 1988

Madison, Wisconsin: Wisconsin Department of Natural Resources, November/December 1988

SPECIAL SECTION: Wildlife people and a spirit of cooperation

WISCONSIN NATURAL RESOURCES

November/December 1988 $3.00 Volume 12, Number 6

Deer Diary

Game farming

Gifts we gave ourselves

Christmas fern

Anne Hallowell

In the heart of winter, when Wisconsin's woods are snowbound and still, a fresh green reminder of the holiday season is always a welcome sight. Christmas fern *(Polystichum acrostichoides)* provides that cheerful color. It is one of our few native plants that retains its summery green during the cold winter months. That's likely how the plant received its common name.

Christmas fern's graceful, evergreen fronds have been used extensively for holiday decorations. Some people think its fronds rival the beauty of holly when arranged with red berries. Although Christmas fern makes an attractive decoration, it is even more beautiful and appropriate in its natural setting.

Christmas fern grows in moist, often rocky woods, preferring shaded slopes with limey soils. Its hardi-

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Christmas fern brightens up a snowy day. Photo by Barbara Hallowell

WISCONSIN NATURAL RESOURCES

November/December 1988 Volume 12, Number 6

PUBL-IE-012
ISSN-0736-2277

Wisconsin Natural Resources magazine (USPS #34625000) is published bimonthly by the Wisconsin Department of Natural Resources, 101 S. Webster St., Madison, WI 53702. The magazine is sustained through paid subscriptions. No tax monies or license monies are used. **Subscription rates are:** $6.97 for one year, $11.97 for two years, $15.97 for three years. Second class postage paid at Madison, WI. POSTMASTER and readers: circulation, **subscription questions** and **address changes** should be sent to: *Wisconsin Natural Resources*, P.O. Box 7191, Madison, 53707.

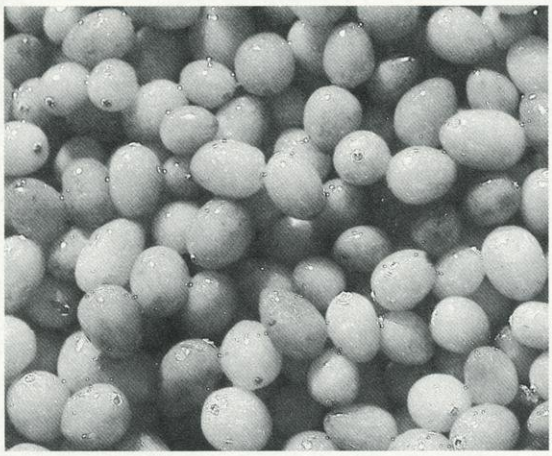


Photo by Robert Queen

Photo by Gerald Johnson

Illustration by Jim McEvoy

Deer Diary

FRONT COVER: Hmong artist Bao Thao remembers the wild animals of home deer, birds, tigers and monkeys.
Photo by Alaine Johnson. Pa'ndau (flower cloth) courtesy of Bee Her.

BACK COVER: Village life in the laotian mountains by Bao Thao.
Photo by Alaine Johnson. Pa'ndau (flower cloth) courtesy of Bee Her.

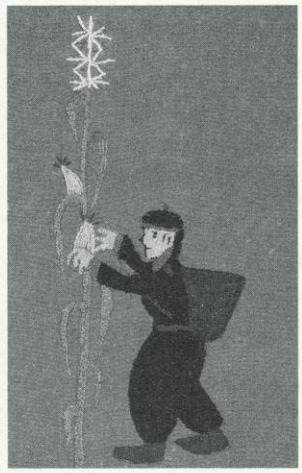


Photo by Alaine Johnson

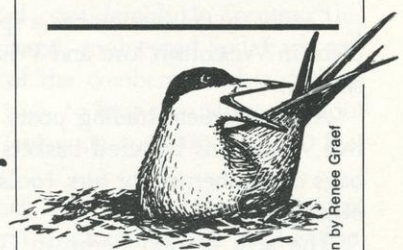


Illustration by Renee Graef

Of berries and bogs

DNR researchers are working with growers to develop practical ways of cultivating cranberries and cleaner waters.

David L. Sperling

Simmered with sugar and orange, then nestled next to a moist slice of turkey, it's hard to imagine a more natural or traditional holiday treat than cranberries. This festive, ruby red relish is rich in flavor, nutrition and history.

Wild cranberry, *Vaccinium macrocarpon,* grew in marshes and bogs in many North American regions. Native Americans ate the berries in many forms — raw, cooked with foods or mashed with meats and fats to form the jerky-like pemmican. The high-acid, tart berries preserved food and provided a rich source of vitamin C.

Cranberry cultivation has a special place in Wisconsin lore and Wisconsin law.

At our earliest trading posts, Native Americans bartered baskets and bags of cranberries for furs, tools and other goods.

The area around Berlin in Green Lake County became the hub of the commercial cranberry business in the early 1860s less than 40 years after the wild fruit was first cultivated in Massachusetts.

The glacial lowlands and ancient lake beds of Lake Wisconsin in north and central Wisconsin were readily adapted for cranberry raising. Since 1870, about 80 square miles of wetlands in Wood and Juneau counties formed a major berry-growing region called Cranmoor. In fact, our first written sales accounts of wild berries

David L. Sperling edits Wisconsin Natural Resources magazine.

Cranberries grow up from runners.

Whitney from the Cranmoor area, were recorded in 1829 by one Daniel about 15 miles west of Wisconsin Rapids.

Our cranberry businesses still flourish along riverside outwash plains, marshes and boggy soils near lakes. Today, about 135 growers raise cranberries commercially in 18 counties on about 8,200 acres of beds. Leading cranberry-producing counties are: Wood, Monroe, Jackson, Juneau, Oneida and Vilas. In 1986, Wisconsin agribusiness harvested 1.2 million barrels (100 pounds to the barrel) of cranberries valued at better than $65 million. As an income producer, cranberries are, by far, our most valuable fruit crop.

One of this state's oldest environmental laws, dubbed the "Cranberry Law" dating from 1867, encouraged the development of this new crop by giving growers special rights to water. In fact, the law gave growers expressed rights to "build and erect, keep up and maintain such dams upon and across any stream, ditch, sluice, slough or any body of water, as shall be necessary for the purpose of flooding . . . marshlands."

The Cranberry Law remains remarkably close to its original form and intent. Today, as environmental laws are crafted to provide greater public protection and rights to resources, the State Supreme Court has consistently interpreted that the Cranberry Law protects growers' rights and public rights to water. Thus, the cranberry grower still maintains special rights to divert public waters and form impoundments but must comply with other state laws regulating shoreland development. A 1982 agreement between the Department of Natural Resources and the cranberry industry sets a procedure for investigating and resolving citizen complaints about cranberry operations.

Understanding cranberry's ties to water

Long an object of admiration, this native berry is now an object of environmental scrutiny as environmental officials, agricultural officials and growers cooperate in studying how cranberry cultivation affects Wisconsin waters, wetlands and wildlife.

To better appreciate some of the environmental concerns, a short lesson on cranberry cultivation is in order.

By 1950, harvesting methods still required rugged workers. These scuttles helped by raking the berries from the vines and collecting them in the box.
Photo from the Iconographic Collection, State Historical Society of Wisconsin

The cranberry, first cousin to mossberries and blueberries, grows from vine-like runners. Runners grow several feet long and send up upright shoots that bear small pink blossoms on small hooked stems. The shape and color of these arching shoots are thought to have inspired the berry's original name, craneberry.

Cranberries are grown from plant cuttings which are placed by hand or machine on a prepared bed after ice-out. It can take three to five years for vines to completely cover a new bed and produce a crop worth harvesting.

Runners start to grow in early spring, buds swell in May, flowers form in late June into July and berries take 75-100 days to mature from flower buds. Harvest is typically in late September and the first few weeks of October.

These days, beds with ripe berries are flooded with six to 10 inches of water. The light berries float, mechanical beaters sever the berries from the vines, and the cranberries are drained toward one corner of the bed where they are raked onto conveyor belts and trucked to processors. Berries sold in fresh fruit markets are harvested by mechanical pickers that handle the fruit more gently.

Historically, cranberry beds were drained at harvest time and people crawled on their knees through the beds manually raking up ripe berries with a comb-like attachment on a box.

In late November or early December, the vines are repeatedly flooded with water until ice forms in thin sheets. Floodings continue until a five- to 10-inch blanket of ice insulates the vines and shields them from bitter, drying winds.

A cranberry bed is much more than a seeded marsh. The landscape is altered considerably in forming this structured, engineered bed. Each section of the cranberry bed is divided into two- to four-acre plots — about 160 feet wide and 500 to 1,000 feet long.

Each acre of cranberry bed can cost several thousand dollars to develop. A dragline or bulldozer scalps soil and all vegetation off the bed sites. Marsh soils are scraped three to four inches deep; drier lands that had trees are scraped deeper. Beds must be leveled or sloped slightly so water will flow smoothly when beds are flooded and drained. Leveled beds are rebuilt with sand and peaty soils. The soil is covered with a sand blanket which discourages weed growth and encourages strong roots. Irrigation systems — dikes, canals, floodgates and ditches — are installed. Irrigation ditches are about 18 inches wide and two to three feet deep. Drainage canals are five- to 15-feet wide.

Sprinkler irrigation is also installed to water the beds, apply fertilizers and pesticides, and to provide frost protection. Cranberry beds are sprayed with water to coat the vines with thin layers of ice if there is a threat of frost. As water cools and freezes into ice, it gives off heat which keeps the delicate vines and fruits just above freezing.

Major cranberry growing regions today.
Illustration by Georgine Price

Cranberry operations historically developed on marshy riverbed and near lakes because cranberries need a lot of water and sandy, acid soil that can be flooded when need be, but will drain and dry quickly for planting. Once cranberry marshes are established they can last 50 years or more in agricultural production.

Growers are quick to point out that relatively few acres of their land are commercially developed for growing berries. Only seven percent of the nearly 110,000 acres owned by cranberry growers are in production. About three percent of the land is used for ditches, dikes and roads; 17 percent upland woods; 21 percent in shallow water reserves; 22 percent in wooded wetlands and 30 percent are maintained as wetlands.

Environmental research begins

Despite our long history of cranberry production, few researchers have studied how its cultivation changes waters and shorelands. Since cranberry growers use lots of water and modern farming techniques in wetlands that feed into lakes, streams and rivers, researchers are most interested in learning how water conditions are changed.

Harvesting cranberries was backbreaking, slow work in the days when berries were handpicked.
Photo from the Iconographic Collection, State Historical Society of Wisconsin

Citizens living near large cranberry operations have complained that water downstream from active cranberry beds is occasionally weedier and cloudy (turbid). State environmental and agricultural officials are studying if nutrients from fertilizers and pesticides used in cranberry operations are degrading water quality. If water quality is being degraded, research may suggest how damage can be minimized by changing cranberry bed designs and adjusting farming practices.

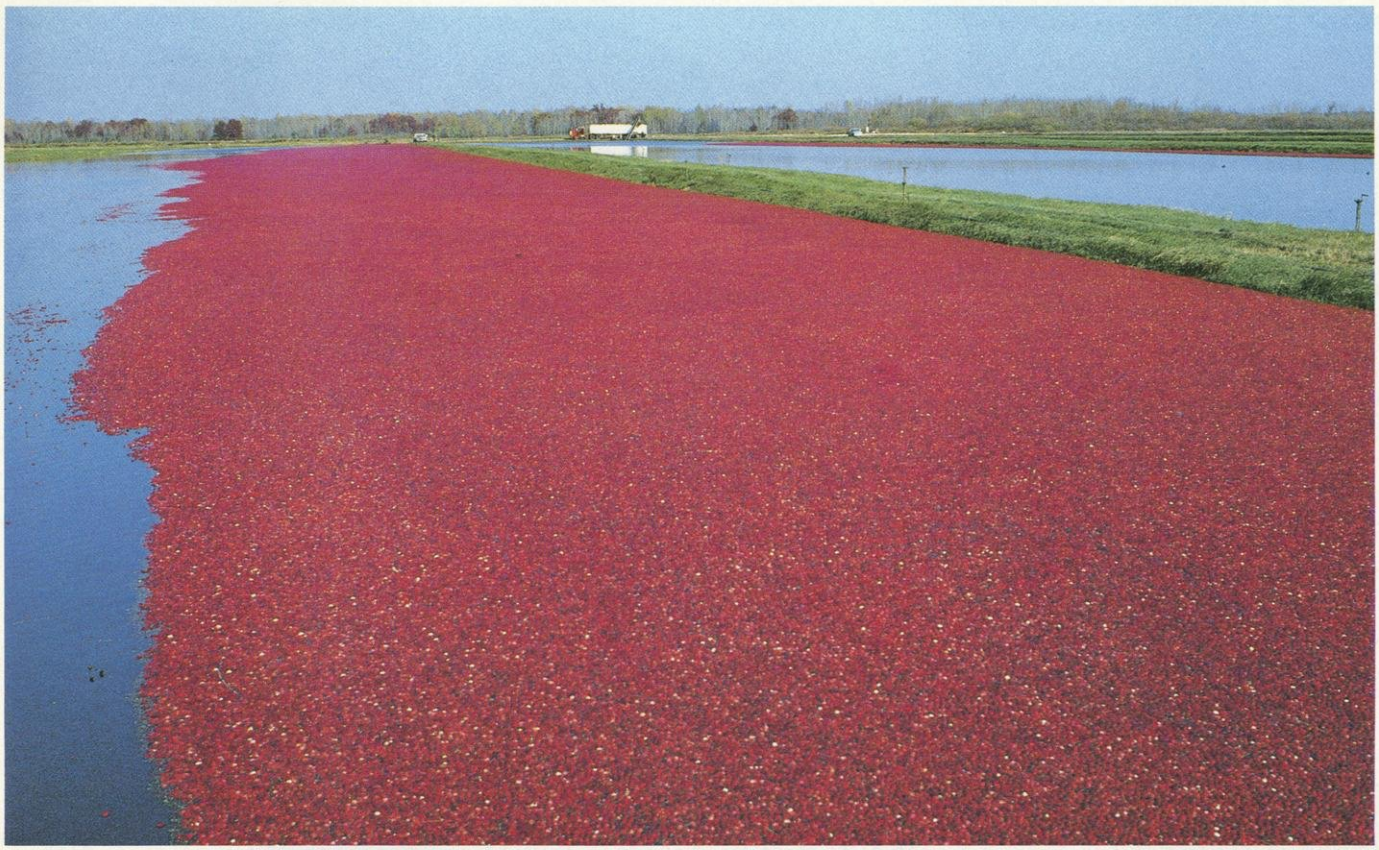
Aspects of cranberry cultivation which researchers want to study include:

MARSH CONSTRUCTION TECHNIQUES — Draining and scraping wetlands drastically changes the nature of wetlands. Cranberry reservoirs are home to waterfowl, herons, cranes, bass and northerns, but the wild wetlands they replaced supported even wider varieties of animal habitats. Researchers want to test how these habitats change with commercial development. They also want to measure how physical disturbances in preparing cranberry beds changes physical and biological conditions in downstream waters.

SOIL LOSS — During the three to five years it takes to establish productive cranberry beds, lots of soil is disturbed and exposed. Unless it's stabilized, this raw soil can erode and flush downstream as silt and sediment. Research can suggest farming practices that control erosion during this vulnerable period.

WARM WATER — By diverting river water and damming flows, cranberry growers create wide, shallow ponds to store the water for berry production. The slow-moving, shallow water in these artificial ponds is more quickly warmed by the sun than river water, as much as 20 de-

Text continued page 8



(top) Ready for the harvest. As growing and harvesting technology increases, we have to research how earth-moving equipment, fertilizers and pesticides change water quality in nearby wetlands and streams. Ripe berries are floated to one corner of the bed and trucked to processing plants.
Photo by Dean Tvedt

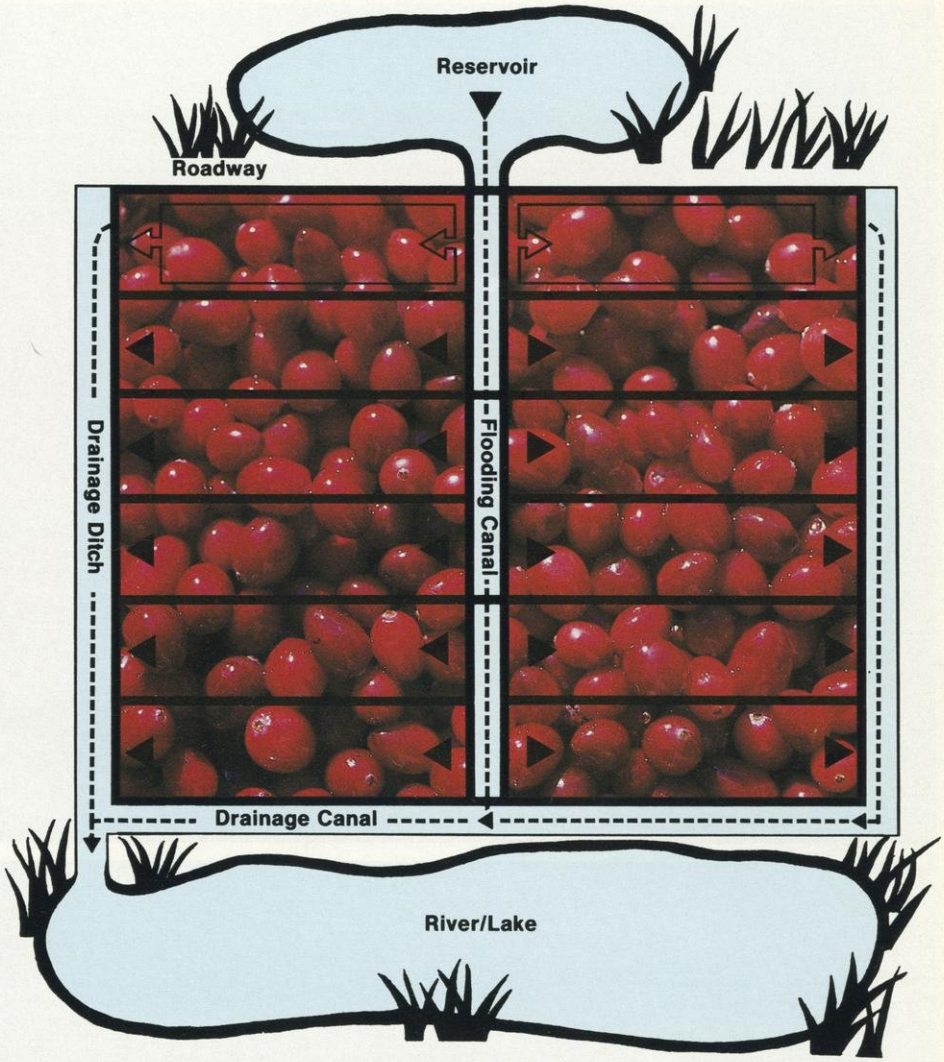
(bottom) Cranberry growing, like most agribusiness, is becoming more mechanized. Fewer and fewer operations hand-sort berries these days.
DNR file photo

grees F warmer. In regions where cranberry operations adjoin trout water, warm water discharges could harm the fishery. Management techniques like cascading drainage water over rocks could cool this water before it mixes in with stream water.

EFFECTS OF DAMMING WATER — Artificial dams and dikes can impede fish migrating upstream to spawning waters. Where this occurs, fisheries specialists could consult with growers to install bypasses around the impoundments.

NUTRIENT ENRICHMENT — Researchers will also examine how much fertilizer is needed to grow cranberries and exactly when it should be applied to the crop. Overfertilization wastes growers' money and excess fertilizers find their way into adjacent waters where they can cause lake and stream eutrophication. In addition to developing practical tests and advice for growers, researchers want to investigate how nitrogen and phosphorus move from beds to drainage ditches to groundwater or surface waters. If need be, the techniques used to trap these nutrients from streets and farmlands might be tried adjacent to cranberry bogs.

PESTICIDE MOVEMENT — Perhaps the most intriguing environmental questions from cranberry cultivation revolve around pesticide use. No one is expressing concern that pesticides accumulate in cranberries. Rather, researchers want to determine if pesticide residues are carried into streams and groundwater. Pesticides are often used in cranberry beds to control weeds, insects and fungal diseases. Pesticide mishaps like overspraying aerial pesticides, spills, and cleaning concentrates from pesticide sprayers can quickly carry pesticides into streams. Moreover, even when properly applied, pesticides may have a greater chance of running off cranberry beds than from other sources. The light, sandy soils in bogs don't retard pesticides that aren't absorbed by plants. Also, should cranberry beds be flooded to prevent frost soon after pesticides are applied or should it rain, these chemicals could more readily wash into waterways.



A cranberry bed is a highly engineered farm field complete with drainage ditches, water reservoirs, and overhead irrigation systems that shower plants with water, fertilizers and pesticides. With growers' help, environmental and agricultural researchers are examining how cranberry cultivation may change public waters.

Two additional points are worth noting. First, historically, we've documented few problems in cranberry bogs when pesticides were properly applied according to label directions. Second, in a study last year by DNR and state agricultural staff, pesticide residues were detected in stream water, but not in amounts that pose human health threats. However, pesticide residues may be harming aquatic organisms immediately downstream from places where drainage ditches enter the stream or lake.

Cranberry growers continue to experiment with nonchemical pest controls like mechanical weed cutting and selective flooding to maintain vines but discourage weed growth. They are also planting more disease-resistant stock.

These scientific studies aim to provide practical advice to farmers who are cultivating the wild berry that grew so naturally into our culture, history and holiday traditions. ■

Game Farming: Creating outdoor experiences

Appreciating the niche game farms fill may be a sign of changing times.

Story by John Beth

Quail can be hunted on licensed shooting preserves from mid-September through February. At least a quarter of the quail raised at game farms must be stocked on lands open to all hunters.

Photo by Herb Lange.

It's a highly managed hunt, but pheasant hunters flock to game farms to try their luck.

Photo by Gerald Johnson

When you hear the words "game farm" or "shooting preserve" what comes to mind? Some I asked responded: "They shoot animals in pens, right?" "It's a place where people can hunt for a fee." Or even "I think you shoot birds and other animals for fun and a price."

Very few people have had personal experiences at game farms and most have inaccurate perceptions of them.

To understand game farms, it helps to understand Wisconsin's wildlife laws. Game farms are but one form of "captive wildlife" — an all encompassing term for many situations that, by permit or license, allow someone to legally hold a wild animal captive. Why would anyone be given that permission in a land where fish and game are public resources? There are lots of legitimate reasons.

First, one might be licensed as a wildlife rehabilitator: a private individual who temporarily cares for injured or orphaned wild animals with the aim of returning healthy animals to the wild. Some 120 people are licensed rehabilitators.

Next, you can be a falconer: a hunting sport where licensed individuals can use certain birds of prey to hunt. It is Wisconsin's only captive wildlife program requiring a mandatory test and examination; approximately 60 state falconers are licensed.

A new program permits raptor propagation — a program to rebuild populations of birds of prey like hawks, eagles, and owls. Only two people are so licensed now.

Wildlife exhibit licenses allow advertising and educational displays using wild animals raised on game farms, and rehabilitated animals that can't be released back to the wild (for instance, an owl with an amputated wing). About 125 of these licenses have been issued.

Game farm operators are licensed to breed, propagate, kill and sell game year-round. A special provision in this license sets a system for pen-raising game that will be released for hunting purposes. Conservation clubs frequently secure these licenses to raise and release pheasants; 2,000 such farms are licensed.

Wisconsin's 62 shooting preserves are licensed to raise and release pheasant and quail on specific acreage. These birds can only be hunted in an established season from mid-September to the end of February and at least 25 percent of the birds released must be stocked for public benefit.

Some 835 fur farms are licensed for year-round ranching and trapping privileges. An important side benefit of this license system is that wetlands are often protected by the license holder.

Currently, 367 deer farms are licensed to breed, propagate, kill and

John Beth, from Reedsburg, is an avid outdoorsman. He frequently contributes articles and photographs to Wisconsin Natural Resources.

sell venison. Most deer, however, are sold live. Many deer farmers also buy exhibit licenses so they can advertise.

Some 300 scientific collection permits are issued to schools and researchers to promote science study and education. Permit holders must meet rigid requirements.

Endangered or threatened species permits are granted in conjunction with other permits like a wildlife rehabilitation permit to nurse a threatened or endangered animal back to health.

Finally, dog trial and training permits allow short-term capturing of wild animals (primarily birds) for field dog classes and competitions.

Volumes of laws and regulations govern these special permits. Aside from legal restrictions, some people morally question anyone's right to raise wild animals for profit.

As a former farm boy, I have no gripe with the game farm operators who run a professional, dignified operation. I love and respect wild animals. And I really don't consider shooting a game farm pheasant much different from killing my old rooster who was "raised for a reason." Historically and routinely, animals are raised and harvested for human consumption. Heck, the pheasant at least has a chance to escape!

I also don't view hunting or fishing on licensed farms as any more "unnatural" than taking the last "wild" muskie, trout, salmon, walleye, or pheasant that came from a state hatchery. I get a chuckle out of the purist who only hunts "native" ring-necked pheasants and fly fish "native" brown trout in the name of honest sport. I wonder if he'd like to hunt his next pheasant in China and hook his next brown trout in Scotland. You're only as "pure" as you want to believe you are.

That's not to suggest the captive wildlife business is without its problems and abuses. Resource managers believe some of the problems are caused by the historical hodgepodge of state laws that govern captive wildlife.

"The laws that control game farms in the State of Wisconsin are outdated and desperately need modernizing," said DNR Law Enforcement Specialist Jim Palmer.

DNR Wildlife Staff Specialist Dave Gjestson explained some of the complex gray areas in state law.

"We're in an awkward position of trying to judge why someone wants to keep a wild animal. For instance, if a caller wants to keep a badger in captivity and asks 'What license do I need?' we say you need a captive wildlife license, but why do you propose holding the animal captive? If they say to breed, propagate, study, sell . . . we have standards and they can be licensed. If they want the animal for a pet; we answer, 'No.' There is no authority for wildlife pets in Wisconsin.

"Our wardens and game managers are concerned about authorizing more and more reasons for raising wild animals. As that happens, judging legitimate proposals gets more difficult, and the chances of abuses also increases. We already have more than 4,000 captive wildlife licenses to track.

"The workload in promptly and properly inspecting captive wild animals is already overwhelming, given commitments to protect wild resources and ensure that our clients who pay the bills (through license purchases) see benefits from their investments."

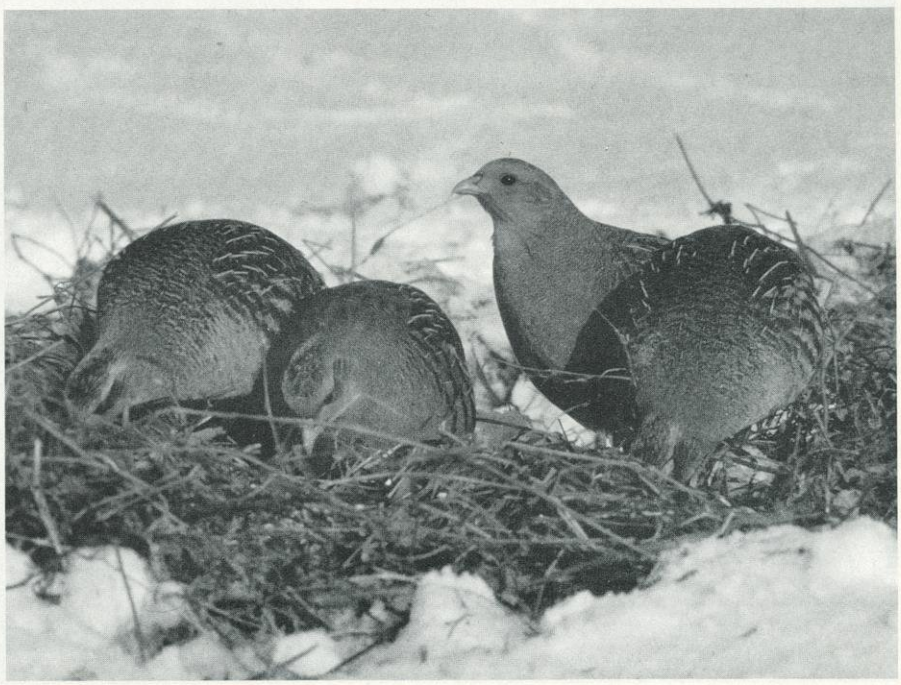
The game farm business in Wisconsin has seen many an owner come and go. The turnover rate is high. That potential that someone may walk away from captive animals concerns resource managers.

Gjestson continued, "In principle, we recognize game farming as a legitimate use of resources. We know some people find loopholes and under the table methods of 'laundering' certain resources, and that concerns us greatly. However, most of the legitimate licensees understand as well as we do that captive wildlife laws need to be updated. They maintain healthy conditions for captive wildlife without waiting for new requirements."

Profile of a well-run game farm

If there is a secret to success, one Wisconsin operator typifies the essence of a quality, successful operation to me. His customers come from 50 states and in more than 25 years, his farm has never had a customer in-

Gray partridge or Hungarian partridge are not native to Wisconsin. They are as artificial on public hunting lands as on game farms. Given cover, browse and protection, partridge can thrive and they add a welcome challenge for bird hunters. Photo by Herb Lange.



volved in a shooting accident, never had so much as a single bird disease outbreak. He works tirelessly and continuously to make it happen.

Meet Mr. Jim Martin, and listen as he reflects on the science and the sweat of game farm success:

"I've been in the security business 28 years. Some 26 years ago, a few of my security (corporate) clients said they'd like a nice quiet spot in the country to come have a cookout, maybe a business seminar and do a little hunting and fishing to round out the day. They asked me to build a flight pen for pheasants. The group bought pheasants from Janesville and would come back to my farm occasionally in the fall to hunt their birds. We're close to Neenah Creek and the Wisconsin River, and they'd do a little fishing too."

Starting from that first pen of 200 pheasants, Martin slowly added more and more pheasants: 400, 600, 800 . . . a thousand! Soon his customers brought *their* customers, and their customers and friends brought *their* customers and friends. Almost a dozen companies were doing business with him. The guests thought some deep spring-fed fishing ponds would be nice . . . and maybe a log cabin. The game farm was born.

Now, 26 years later, growing like a well-fed child, you can come here to hunt pheasants, Hungarian partridge, quail, grouse, ducks, geese and deer or fish for trout, walleye, hybrid bluegills, catfish, smallmouth and largemouth bass — a variety of hunting and fishing experiences that are enjoyable, safe and exciting. You can feel relaxed and challenged on the many ponds, fields and forest on the 2,000 acres Jim Martin manages.

"This is an expensive business to run right," Martin emphasizes, "don't even think otherwise. You need land and you must develop the cover and habitat. More than 20 years ago the Conservation Department came in here and advised me to plant and develop a large number of grasses and food crops to hold these birds. I remember those first 200 pheasant. I released them and they promptly packed their bags and left! (Jim laughs) I knew right off, habitat is critical . . . and lots of it to keep them *here!*

"Our duck hunters have several options . . . authentic marsh hunting, wild rice, decoys and all, jump shooting along the Neenah Creek, and pass shooting via releasing duck from as far away as two miles. My ducks look and fly like wild ducks. My ducks are actually 'walked' through a small-mesh fenced path to a flight tower and acclimated to the flight routes back to the feeding area. Some outfits don't have the room or desire to work with birds in this way, but it makes for a much better sport and flight performance. All our duck hunting is done with steel shot. The Fish and Wildlife personnel studied lead

More than 2,000 farms in Wisconsin are licensed to raise game animals for profit. Inspecting facilities that raise captive wildlife is a big job.
Photo by Herb Lange

Keeping farm-raised ducks and geese healthy and well-fed is a year-round job, and it's expensive. Photo by Jerry Wenger

shot here and it was clear consuming lead shot is fatal to ducks.

"Bird pens are expensive. We recently bought nearly $70,000 worth of treated lumber to build sturdy pens and stands that won't simply rot and fall apart. Animals are expensive, too — a 12-week-old pheasant goes for about $6; young ducks $4.50. The feed doesn't come cheap. We use a lot of electricity to continually pump well water through our ponds. Developing habitat, caring for employees, maintaining various buildings and lodges, paying insurance; it all adds up real high, real fast," Martin smiles, shaking his head. "You've gotta like people and you've gotta like work! You most importantly have to make good decisions.

"We have a game farm license here which lets us hunt 12 months a year. On the game farm proper, there are no bag limits on mallards, pheasants, quail, Chuckar partridge, Hungarian partridge or fish. Nor do clients need a license. All game taken is registered and tagged as coming from a state-licensed game farm and, in my case, a licensed fish hatchery.

"On the other hand, when we go to the marsh, the Neenah Creek or Wisconsin River areas then of course all our customers comply with all the licenses, stamps, rules and regulations. If a hunter or fisher steps off my land, he is subject to the same laws and limits everyone else is.

Whether pen-raised or wild, Canada geese are beautiful and graceful on the wing. Photo by Gerald Johnson

"There are funny aspects to this business. When a prospective game farm first starts up, a conservation warden comes in and makes a reasonably accurate guess of how much wild game is present. When I converted from being licensed as a shooting preserve to a game farm, I had to 'buy' all those 'wild' birds from the state, even though I'd raised most of them. The law assumed they were all public game prior to my relicensing. That can get quite expensive, especially when the whole population was already raised on your feed and previously purchased by you!

"I'm really not complaining because I've had help from the DNR folks, Department of Agriculture staff, Fish and Wildlife people, American Game Breeders Association and the state Game Breeders Association in planning a proper mix of habitat types.

"There are 11 different upland game areas on just this one farm," Martin adds. "Those areas are carefully developed with grasses, conifers, annuals, and perennials to form ideal habitat.

"My goal is to get away from that attitude of a 'shooting gallery' on a few planted strips that are pounded day-in and day-out. That is not what I or my customers want. Remember, this is a commercial business. Customers are number one. That's the reason they come back again and again. I know some small operations don't have the land and development I do, but they could if they really wanted to make the investment and sacrifice. Granted, some customers will pay to have ducks virtually dropped on their head from a tower or 'tank shoot' behind them. That's fine . . . but that's not my farm or my customer.

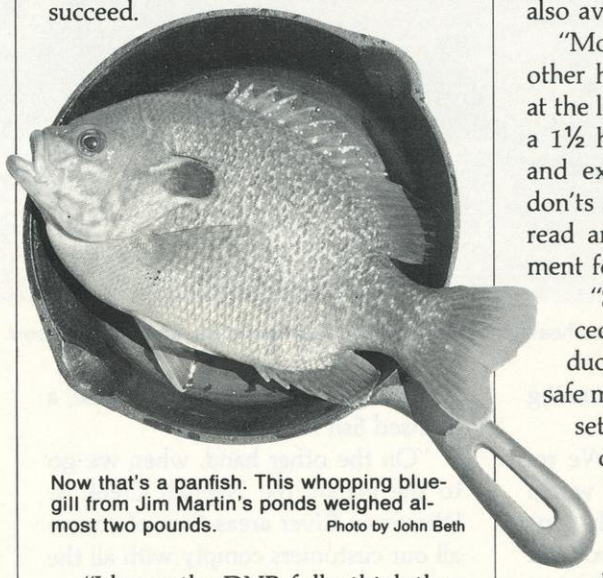
"We can provide a unique outdoor experience. Let's say a typical group of 12 comes in," Jim explains. "In groups of four, they would go into the upland game areas at 9 or 10 a.m. after an early morning duck hunt from separate blinds (there are 44 here). Then they take their pointing or flush dogs (11, plus handlers available) out to some cover and hunt quail and pheasants for a couple of hours. Then they may come back and fly fish for a few nice rainbow trout, have lunch, rest a bit, go out and hunt Hungarian partridge, have some midday walleye fishing and finish up with a duck hunt. They have a full memorable day with pleasant diversity.

"They don't go home saying, 'I pounded that one strip of corn all day for two pheasants!' If they'd like to just walk in nature, fine. I have eight miles of nature trails with 82 tree blinds for hunting, photography or just observing. We're casual and accommodating. After a nice dinner in the lodge, the fireplace glows and refreshments and a friendly card game may cap the evening. I try to give something extra, something special and I think we do."

Martin agrees that licensing, numerous regulations and stipulations go with the territory.

"We used to buy turkeys here and release them," he says. "We can't do that anymore because the state is releasing turkeys. Turkeys are very susceptible to blackhead disease. If all game farm owners raised and released turkeys, we could soon be spreading disease. I certainly can go along with those restrictions.

"I think the state should be more restrictive where they allow game farms, especially if the operation can affect wild or released animals. However, for the most part, there are enough laws and regulations already to make it tough for game farms to succeed.



Now that's a panfish. This whopping bluegill from Jim Martin's ponds weighed almost two pounds. Photo by John Beth

"I know the DNR folks think they need to protect wild birds from wandering onto my place. My experience shows far and away that more game farm animals leave my place for hunters off this farm than the other way around. I provide birds for hunters around this area. I accept and expect a certain amount of that, but seriously, state or wild birds are a tiny portion of our harvest here. I get letters from all over from hunters who shot a duck with my tag on it, and let me tell you, nearly 100 percent of the ducks taken here have my tag and toe clip.

"I should restate that, by and large, the DNR staff has been helpful and cooperative over the years. I do think they could monitor game farm sanitation more, but I realize that is time consuming. I'm a fanatic about cleanliness, but considering the alternative of putting out a diseased bird or losing many or all to a disease, I'll take the over-protectiveness every time. In 26 years I've never had an outbreak of disease. I've got 7,000 ducks here at the moment, and I have techniques of handling large numbers of birds. I spray some duck areas every two weeks. It's expensive, but it works."

How much does this special experience cost? Members pay an annual fee membership plus "pay-as-use" basis: so much per bird kept or released; so much per fish. Dogs, guns, fishing gear and other equipment, etc. are also available.

"Most hunters here never realize other hunters are here until evening at the lodge," Martin adds. "We have a 1½ hour session including movies and explanations on the do's and don'ts as well as tips. Everyone must read and sign an orientation document for insurance reasons.

"Safety and understanding procedures are a must. I love introducing new folks to a sport in a safe manner. I have a special hunting set-up for beginners where ducks only fly 500 yards to two blinds on a pond. A special guide works with a youngster (including a safety course) and dad usually goes along. In just three days, a youngster can learn a great deal. The parents and kids like it very much.

"Beyond all the work, expense and rules, I want to give a customer the feeling that he or she has had an enjoyable day(s) in the outdoors . . . a relaxed and pretty place. I never want a customer to feel like he or she was at an assembly-line game factory being pushed. Never! The rewards are in the naturalness and solitude of what we strive to offer. I want them to sit down at the end of the day and say they had a day to remember . . . hunting, fishing, photographing or just walking."

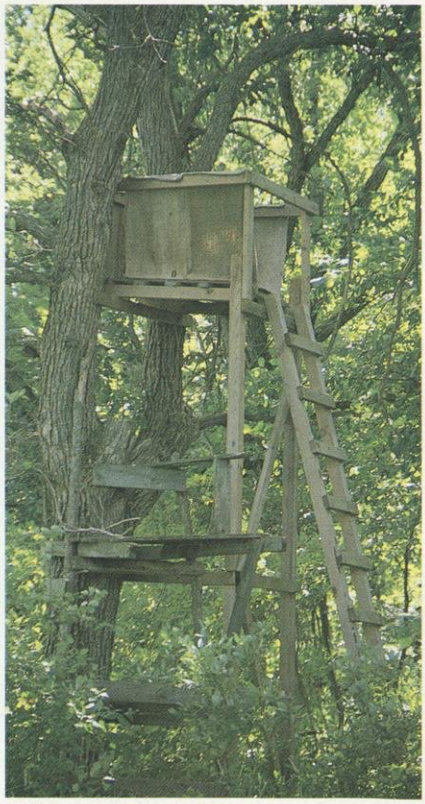
Game farms aren't for everyone, but they aren't meant to be. Perhaps the game farm experience will become even more common in genera-

tions ahead as people increasingly pay for conveniences.

I doubt the game farm experience will replace common hunting, but it may supplement the wild experience. Society is changing. So will the role of the wildlife, hunter, fisher, farmer (of the game) and the state specialists who try to make and keep it all proper.

True wildlife and "commercial" wildlife are both valuable. They should be watched, understood, evaluated and, if and when necessary, controlled. If more effort to control and check game farming operations is in our best interest, we must accept the fact and pay the bill to see it happen. The unscrupulous operator must not have the right to shroud with controversy the people who run game farms properly. Most are abiding by state laws. They should be respected.

Maybe game farms are ahead of their time. We pay for hunting and fishing now, don't we? Is leasing 40 acres to hunt deer so distinct from paying for a Great Lake stamp to restock that chinook you caught? Whether in Lake Michigan or in Jim Martin's ponds, we're still artificially stocking the waters for our enjoyment. The biggest difference is the size of the pond.



Different strokes for different folks. Martin built tree stands that double as wildlife blinds for photographers and hikers.

There are outdoor experiences the Department of Natural Resources will never be able to offer that shooting and fishing farms can: for a fee. On the other hand, publicly-managed resources provide lots of experiences that game farms cannot — wandering a million-acre forest, camping by a wild river, and catching a 25-pound salmon on Lake Michigan. I think the combination of both offers today's outdoor enthusiast a choice.

Many of our wildlife experiences are manufactured by outdoor agencies. Admit that, and you'll be closer to understanding game farming in a philosophical, economical and recreational aspect. Paying for quality outdoor experiences will continue, whether on private or public lands. ■

Jim Martin (on the right) manages trout ponds, hiking trails, 11 kinds upland game habitat and more on his 2,000 acre game farm. It's a big operation, but clients enjoy the diversity.

Photos by John Beth

Game farm visitors are as interested as nonhunters in viewing wildlife.

Mallard photo by Stephen J. Lang

Deer Diary—

"Running Buck," by Wisconsin artist Scott Zoellick.

Travel with a warden on the opening day of the deer gun season. *Story by Dennis Jameson*

Nearly 660,000 hunters harvested about 255,000 deer this year. Wardens were afield overseeing one of the safest hunts in several decades. Photo by Gerald Fuehrer

The nine-day deer season attracted about 675,000 hunters to the woods. That was a lot of hunters, a lot of camaraderie, and a lot of hunting tales to warm winter nights. You'll hear tales about the granddaddy bucks that went down and the ones that slipped away.

Somewhere out in that sea of blaze orange were 172 game wardens, on patrol, who also have stories to tell. They tried to enforce the rules and regulations designed to protect resources, increase hunting enjoyment, and promote a safe hunt.

It's a tough job that packs a certain degree of danger. But it's rewarding, too, offering a unique blend of personal and professional satisfaction.

To give you a rough idea of conservation law enforcement work, here is one warden's account of a typical opening day of the deer gun season.

I'm a 22-year veteran of the warden force assigned to the northern half of Sauk County. The county has consistently ranked in the top 10 for harvested deer during the last decade. Hilly terrain and numerous farms with small woodlots make Sauk County ideal for deer — plenty of food and plenty of cover.

5 a.m. The phone rings and it's the first of several callers asking the same question, "I can't find my back tag, can I still hunt?"

"No, sorry. You have to wear a back tag while deer hunting. Duplicate tags can be obtained at Devil's Lake State Park after 8 a.m."

Why some hunters wait until the last minute to check all their gear I'll never know.

6 a.m. I pack the last of many items I'll need during the deer gun season into the DNR patrol vehicle, a 4-wheel drive truck. Just like hunters, wardens have to be prepared. Walkie-talkie batteries, rain gear, extra heavy clothing, an extra pair of dry footgear, lunch, a supply of the necessary DNR forms are all onboard. During the next nine days, I'll put 2,500 plus miles on the vehicle. You have to be prepared.

The season opens once the magical hour of 6:30 a.m. arrives, and I never know if the next radio call will be a fatal hunting accident, a suicide that has been rigged to look like an accident for insurance purposes, a lost child, a dispute among several hunters over who killed a large buck, or a dreaded call for wardens: "all units — game warden needs help."

You have to be alert. Not many people realize that wardens face a much greater risk of being killed than even big city cops. A recent U.S. Fish and Wildlife survey estimated that wardens are nine times more likely to be fatally injured than other law enforcement personnel. Moreover, four out of five people assaulting conservation officers are carrying firearms compared to only one out of five in urban areas.

6:20 I pick up Gerald Trumm, my partner for the next seven working days. Jerry is superintendent for Mirror Lake and Rocky Arbor state parks. He carries special warden credentials. Most wardens work with a partner during the deer gun season. Jerry has worked with me for the past five deer gun seasons and his help is always appreciated.

6:35 We decide to head over to the west side of Sauk County. We haven't hit one area over there for a

Dennis Jameson is a DNR warden based in Baraboo. He was honored with the Haskell Noyes award in 1983 and the Shikar Safari International award in 1974 for outstanding conservation warden performance.

couple of years on opening day, and it seems to hold a large deer population this year. Before we go, we check the dead-end town road just west of Jerry's house to see if the hunters have blocked it again with a fallen tree.

6:40 Sure enough, an oak tree has been cut down and thrown across the town road. We pull off the road, pull the tree of the road, and notify the sheriff's department to contact the town supervisor about the problem. Some hunters will do anything to discourage other hunters from obtaining access to open hunting land!

Illustrations by Stevens Point artist Virgil Beck

As we head west, we talk about the day's activities, just as hunters make predictions about their hunt: It's 12 degrees out — that means the hunters won't be sitting tight on their deer stands too long this morning. No snow. That won't be good for the hunters, or for us. Hunters like snow for tracking and so do I. When there's snow cover, their deer kill will be higher and my apprehensions for deer violations will be probably about 25 percent higher because I can track in the snow too.

6:50 "Look at that truck parked in the alfalfa field with the motor running. I bet that hunter will have a loaded gun in the vehicle."

As I approach the vehicle, I see a hunter wearing blaze orange clothing slouch down on the passenger side.

"Hi, I'm a conservation warden, how are you doing?"

"Not too good."

"Why?"

"Sick."

"Party too much last night?"

"Yeah — I'm too sick to hunt."

There's a cased rifle lying in the back of the pickup. I inspect it and it's empty. This man hasn't even made it out of his vehicle yet.

7:10 We're still heading west at about 35 miles per hour when a car carrying two people dressed in blaze orange flies past us. My partner and I chuckle. They've likely overslept and are missing the opening of the deer season. Little did we know what was going on.

A mile up the road we turn on to a gravel road that winds through hills and valleys. A cloud of dust hangs in the cool heavy air — someone was ahead of us. Another half mile down the road the dust is still hanging. It was obvious that the person ahead of us is in a big hurry to get somewhere.

I increase the speed of the patrol vehicle. In another mile, we caught a glimpse of the vehicle that passed us earlier. The vehicle is now in a field lane. About half a mile up that field lane a lone hunter is waiting.

The normally quiet Trumm says excitedly "Step on it! There's a woman in that vehicle and they've got a deer down. He went to town to get her so she could tag the deer."

I nearly floor the accelerator and the big V-8 engine responds. Soon we are touching only the high spots of the field road.

The car is out of sight around a hill. As we break into the open, his car glides to a stop, the car doors fly open, the male driver is running in one direction toward the hunter and the female is running in the other direction toward a dead deer on the ground.

Our vehicle has not quite stopped when Trumm bails out after the male subject; I take after the female. She and I arrive at the dead deer at the same time.

"Hi, conservation warden, I would like to check your hunting license please."

After obtaining her license and those of the other two, our investigation reveals one hunter shot two anterless deer. He did not tag either deer even though he had one valid tag. He sent his partner back to town to get his wife so she could tag one of the deer. She did not own nor have a gun to use. While I'm writing the citations, they argue that they were "group hunting" and their actions were legal. Two citations are issued to the subject who shot both deer and failed to tag either one. The minimum fine for each citation is $1,900 plus mandatory revocation of all hunting, fishing, and trapping privileges for three years.

8:05 We are back out on a town road and observe two hunters returning to their vehicle. One man is wearing a bright blue stocking cap. We check their hunting licenses, and the man wearing the blue hat is informed that if he hunts during the deer gun season and wears a hat, the hat must be at least 50 percent blaze orange. The man replies, "When I am hunting I wear my hood over my hat." I advise him that when he was in the woods we observed him with no hood over his blue hat. He said he would get a different hat.

8:20 One-half mile down the road a pickup truck pulls off the road, goes to the end of a field, and backs up to a woodlot.

"Aha, they probably have a deer and are loading it into the truck." We wait. Ten minutes later the pickup pulls out onto the road. In the back are two bucks and a doe. We stop the driver and check the hunting licenses of a father and his two teen-age sons. All have beaming smiles, and inspection of their firearms shows all guns are unloaded and cased. I register the deer and congratulate the young hunters on their success.

Back in our truck we comment on

the two young teen-agers, who were proudly wearing their hunter safety graduate patches. Jerry is a hunter safety instructor and seeing this compliance speaks well for the program. It sure makes us proud to work with hunters of this caliber.

8:45 We turn down a gravel road that winds through a valley. I comment to Trumm, "There aren't many houses on this road and I would not be surprised if we pick up a road hunter." Seconds later, we observe a slow-moving vehicle approaching us. The two occupants are dressed in blaze orange and are turning their heads left and right.

"They're road hunting."

Both Trumm and I step out of our vehicle, the approaching vehicle slows to a stop, and the driver looks down and to his right. In quick actions his right hand moves back and forth as if hiding something.

"Watch it Jerry, there may be a handgun in this vehicle!"

We identify ourselves and ask the two to step out of the vehicle so we can check their hunting licenses. Our eyes focus intently on their body movements and we position ourselves defensively, anticipating a move for a handgun. Away from their vehicle, I check each for his hunting license.

In the upper right-hand corner of the driver's hunting license there is no driver's license number, indicating that his driver's license has been revoked.

"I see your driver's license has been revoked. Is this your first offense for driving after revocation?"

"No," he replies.

"You know you will spend some time in jail for driving after revocation?"

"Yes."

I lean into the car to determine if, in fact, he hid a handgun. Once my head is inside the car, I instantly recognize what he is trying to hide. The strong smell of marijuana almost knocks me over. Underneath a jacket on the front seat is a hashish pipe, a small container of hashish and a half bottle of ginger schnapps. An inspection of the two hunting rifles reveals they are properly cased and unloaded. Since both individuals appear to be under the influence of alcohol and/or drugs and one of the individuals is driving with a revoked license, I summon a sheriff's deputy to the scene.

9a.m. Sheriff's radio crackles "1-2-2, we had a horse shot. Are you able to respond to the scene?" I advise the dispatcher that I am not in that area, but would contact another warden on our DNR frequency and advise him to respond. Sauk County has two full-time field wardens, but opening weekend of deer season, an additional four to six wardens are assigned to patrol.

9:20 Sheriff's radio: "1-2-2, in the Lake Redstone area, we have several hunters trespassing on private property, none are wearing blaze orange." I advise the dispatcher I am a considerable distance from that area and that we do not have any patrol vehicles in the area either. Sgt. Frank of the Sauk County Sheriff's Department calls in and advises he is only a couple miles away and would check out the situation. The Sauk County Sheriff's Department officers have always been willing to give us a hand when needed and we sure appreciate their help.

10:10 Down a gravel road, there are two pickup trucks ahead of us with all occupants dressed in blaze orange. We follow them about one-half mile and they turn into a farmyard. We pull in behind them to see how they did, to register any deer that they may have shot, and to check licenses and firearms. No deer, and our inspection reveals all the hunting licenses are in order. When we ask to check one hunter's firearm he reaches into the truck, grabs it by the barrel and pulls it toward himself with the muzzle aimed at his belly. I step aside and thought of my hunter safety training: Keep the muzzle pointed in a safe direction — treat every gun as if it were loaded.

He unzips the gun case and grasps the barrel, pointing the muzzle toward his chest. I advise him to point the muzzle toward the ground away from us. As he opens the action and pulls back the ejection lever, a live round of ammunition falls on the ground from the 30-06 rifle. He looks at me and says "I didn't know it was loaded." When I handed him the citation I said, "You know this may cost you $167 but it may also prevent you from killing yourself or someone else."

"I know," he quietly replies.

10:30 We observe a pickup truck parked across a 40-acre field near a woodlot. We decide to investigate and turn into a farmyard to get on the field road leading back to the pickup. As we slowly pass through the farmyard, we are approached by a hunter on a four-wheeled all-terrain vehicle. On the hunter's leg is a lever-action deer rifle with the muzzle pointing upward. The rifle is uncased. Inspection reveals the weapon is loaded with the hammer against the firing pin. If the hammer had been hit or jarred from the bumpy ATV ride, it

could have fired. We issue a citation to the very cooperative hunter. His wife appears on the scene, yelling at both of us to leave the property, and using language that should not be printed.

11:15 Two hunters are parked in a vehicle about 100 yards off the road in a gravel pit. We pull alongside and spot an anterless deer in the back of a carry-all. Inspection reveals the carcass tag is for a hunter's choice permit in deer management unit 70. We are in deer management unit 54B, but the hunter from Milwaukee says he is in the right unit. Deer management unit 70 had a high deer population, with a large number of hunter's choice permits issued there. Unit 54B has fewer deer with only a few permits issued. A citation is issued and the deer is seized.

11:30 The radio crackles on a DNR frequency and warden Tom Van Haren at Janesville is advised to report to the scene of a fatal hunting accident in his county.

11:45 At a residence we observe two hunters walking out of a pole shed and closing the door. We pull in the driveway and both hunters approach us. One of the hunters has blood on his hands and his blaze orange pants. We ask the men if they want us to register their deer and we follow them into the pole shed. Hanging on a rafter is a nice buck around 175 pounds with a massive rack. One hunter says he's been watching this buck all fall. They thank us for taking the time to register their deer and, as we leave, one hunter tells us to watch for a group in a gray Dodge pickup that he observed road hunting. He is also concerned about hunters trespassing on his property.

12 p.m. Given the dry fall that we had, about 90 percent of the field corn has been picked. In this area, deer will hide in standing corn. A lot of farmers are aware of that, and they carry a firearm on their tractors while picking corn. Most farmers that carry firearms on tractors carry them unloaded and in a carrying case. If we see a farmer in the field picking corn, we usually make contact to check the firearm and ask the farmer if he has seen illegal hunting activities in the area. Most farmers do not want trespassers on their property nor hunters blazing away at deer coming out of the corn while farmers are in the field on tractors.

Around the corner we observe a corn picker headed west in a field. We turn into the field, drive through the picked corn and pull up alongside the harvester. We easily observe an uncased rifle barrel sticking up above the tractor fender.

Trumm steps out and motions for the tractor driver to shut down. He identifies himself to the driver and asks to check the rifle. After the farmer hands the rifle to Trumm, I hear the farmer talking loudly about something. Trumm walks over by my truck window and advises me he thinks we are going to have a problem. I step out of the truck and am met by the farmer who screams profanities and orders us off his land. I listen politely for a couple of minutes and then ask to see his hunting license. He screams that he will not identify himself and we'd better get off his land. Stepping a little closer, I advise him to produce identification or risk being placed under arrest, handcuffed and taken to the Sauk County Jail pending identification. After a moment of silence he said "O.K., my driver's license is in my truck."

On the way to the truck the verbal barrage continues — "I wasn't hunting, I can have that firearm to protect myself from deer hunters. I don't own a gun case. I never have owned a gun case. I'm a farmer. You need me to feed your wife and kids. You think about that the next time you sit down to the table."

He is issued a citation and, since he does not have a gun case, the rifle is seized and held for court action.

After moving our vehicle, Trumm comments "Wow! It's a good thing there aren't many people like him around." One guy like that sure makes us appreciate the positive attitude of 99 percent of hunters.

12:55 We're back on the border between deer management units 54B and 70. Some hunters are standing in a farmyard. A tractor driven by a hunter is pulling a two-wheeled trailer toward the other hunters.

"It looks like they have a deer down and are going to get it."

We turn into the yard. As we near the tractor, I observe an uncased lever-action rifle by the tractor driver. Trumm steps out and inspects the 30-30 rifle; it's loaded with five shells. The group says it has a deer down back in the woods and is en route to get it.

While I write the citation, Trumm goes with them to register the deer. Trumm climbs in the back of the trailer for what turns out to be a long and bumpy ride.

One hunter stays behind as I write the citation for the gun violation. He strikes up a conversation with me. I recognize this individual — I cited him earlier this year for possessing a live raccoon without the proper license. He asks, "What zone are we in?"

I answer, "54B."

"I thought so. I wouldn't shoot a deer here, my permit is for unit 71 across the road. That's where I'll shoot my deer."

I ask him, "The hunter that shot that deer, what unit is his permit for?"

He replies, "I'm not going to say."

"Do you live on this farm?"

"No, I live in town. They live here."

About 20 minutes later, the trailer, tractor and wagon pull back into the yard. Trumm advises me the deer was properly tagged — with a unit 71 tag. Another citation issued; another deer seized.

1:30 The Sheriff's Department advises us to contact the local meat locker; they are having problems with a deer registration. We stop at the next farm and phone the locker. According to the owner, hundreds of

bucks are being brought in with registration tags wrapped around the antlers. The processors are having a tough time removing the registration tags from the antlers and keeping them with the meat. Since deer registration is handled by DNR's wildlife management program, I advised him a wildlife manager will contact him to resolve the problem.

1:40 After leaving the farm we take a side street through a small village. A pickup truck with three occupants turns the corner in front of us. In the back of the truck are a pile of five anterless deer; none appear to be registered. We stop the vehicle. A license check reveals all deer except one are accounted for. The driver explains he is en route to his parents' place to hang the deer; the extra deer is his dad's but his dad is still out hunting. When we finally check the dad's license, he verifies he shot a deer but wanted to keep hunting. We cite the son for transporting an unregistered deer for someone else.

While we're on the road, I use binoculars to observe four hunters about three-quarters of a mile away walking toward a pickup. They all get into the truck without unloading or encasing their firearms. I'm trying to figure out how to get to them. The son who was being issued the citation says he believes they are on a field road leading from a farm.

I leave Trumm and the son on the road and drive five miles of curvy, twisty road to get to the field road.

Too late!

The vehicle I observed in the field is now parked at a farmhouse and no one is in sight. I drive back to Trumm and we register all five deer.

2:10 "Let's get off this road, and find a spot to eat our sandwiches."

Trumm thought that was a good idea, his stomach was growling also.

2:30 In the next two hours we check a lot of hunters who are all hunting legally. One group of nine has seven bucks and has seen a lot of deer, but they still think the deer population is down from last year.

As we travel past a tavern in the small village of LaValle, we observe a pickup loaded with a huge buck that has a massive rack. We stop and look — it's undoubtedly the biggest rack we had seen all day if not in the last couple years. While we examine the deer, the successful hunter comes out of the tavern, all smiles. We compliment him on his kill. With a big grin, he tells us he's already celebrating.

4:40 We're back where we observed the pickup load of hunters with loaded uncased rifles. We are there less than two minutes when a brown Blazer bounces up a woods trail to our location. Four hunters are in the vehicle — three of them have their guns cased and unloaded, one doesn't.

As I issue the citation, one in the group tells us to check out the trail on top of the hill. His dog has been bringing deer legs from that area all fall. The trail is owned by a nonresident, yet hunters in those woods were all wearing resident back tags.

5p.m. Darkness sets in as we creep up a steep rock-covered, rutted trail. We turn off our headlights. I shift the patrol car into four-wheel drive. After several long turns into small dead end fields, we pull into an open area to find several vehicles, a mobile home and a pole shed. We flick on our flashlights and observe

that license plates on the vehicles are from Ohio and Indiana. A buck is hanging in a tree. We knock on the trailer door. Five hunters let us in. After sifting and sorting information, we determine that one has been hunting deer without a license, and that two individuals who are not present have left licenses for the others to use. These are out-of-state residents who purchased resident hunting licenses.

6p.m. The Sauk County Sheriff's Department requests that we respond to a deer registration station in the Lake Delton area, about 40 miles from our location. Reportedly, a hunter has registered a deer earlier in the day then brought in a second deer to register later. On inspecting the deer at the registration station, everything is o.k.

7p.m. I drop off my partner and head home. Supper is still on the stove and my wife takes the phone off the hook until I'm done eating.

For an hour after supper I answer about 10 phone calls from hunters inquiring about interpretations of regulations. Some inform me of poaching activities. One caller wants to know if there's tracking snow on the ground and a second, from Milwaukee, wants me to recommend a good area for him to hunt the next day.

I spend another hour or so straightening out all the paperwork and writing reports on the day's incidents.

ONLY 8 DAYS LEFT! ■

Photo by Alaine Johnson

New traditions in a new land

It takes time and compassion to accustom Asian immigrants to American hunting habits.

Maureen Mecozzi

The more you know, the more you do right; the more you understand well, the more you can give and explain to others; the more you practice, the more you get experience in your knowledge.

—The Letters of Thongsar Boupha

Americans like to think of themselves as the freest people in the world. Submitting to the daily constraints of speed limits, dog licenses and a hundred and one other pesky local, state and federal regulations does nothing to diminish the notion that we've got a corner on liberty.

The Hmong, a people from the mountains of northern Laos, also think of themselves as the freest people in the world. The name they have chosen to call themselves means "free people." In Hmong country, there are no boundaries, no property lines, and no "don't walk" signs. Those constraints the Hmong have come from within the family, not from external sources.

These two free but distinct cultures became acquainted several decades ago in a now all-too-familiar way. Americans got a glimpse of the green jungle mountainsides the Hmong call home in the early 1960s,

Maureen Mecozzi writes conservation and environmental features for the DNR's Bureau of Information and Education.

when the Central Intelligence Agency recruited the Hmong to distract and attack the North Vietnamese, diverting enemy energy away from U.S. troops in Vietnam. The United States learned a hard lesson from those steeple-pointed hills in southeast Asia: the hills could not be taken, they could not be held. They are mountains that do not welcome the restrictions of armies, as the Hmong well know.

Faced with persecution at the hands of the North Vietnamese after the war, many Hmong were forced to leave their beloved mountains and become refugees. They made their way at great peril to the United States — a nation diverse in landscape and people but certain of the need for rules and regulations to maintain an orderly society. To survive here, the Hmong had to learn a new definition of free.

For Hmong and American alike, the education continues.

Traditional hunts are celebrated in Hmong stories and artwork. Hunting and farming were mainstays of Hmong life in Laos.
Photo by Alaine Johnson

Hmong hunting traditions were misunderstood

There are times when DNR conservation warden Roy Kalmerton feels like a walking, talking rulebook. He'll be the first to admit that you'll find more hunting and fishing regulations in Wisconsin's great outdoors than needles on a jack pine. "But behind every one of those rules is a reason," Kalmerton says. "We have resources to manage so everyone can enjoy them, and without those regulations we'd have nothing left to manage. It's that simple."

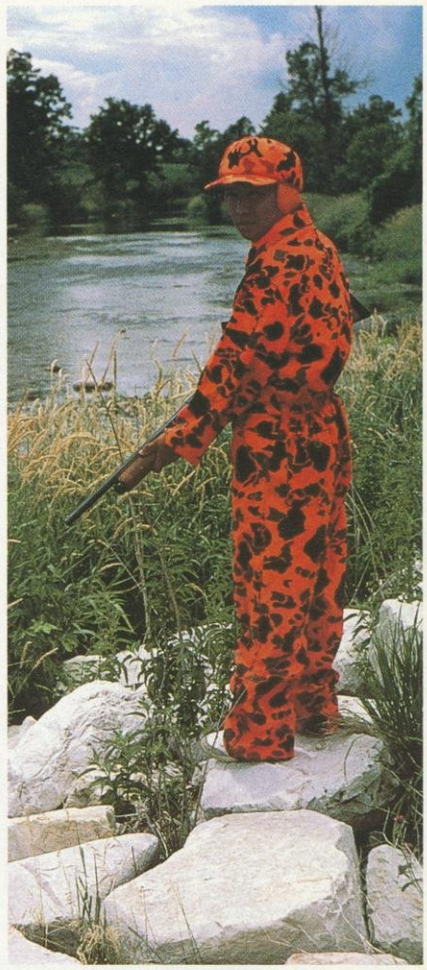
Kalmerton thought he'd met violators of every stripe out in Sheboygan County, his neck of Wisconsin's woods. He heard all the excuses, saw all the ruses — until he met the Hmong, who covered the heads of deer with pillowcases before taking them out of the woods and hung undersized fish in trees.

For many of Sheboygan County's 1,000 Hmong, hunting and fishing provided the important link with nature that had been missing since they were driven out of their thatched-hut villages high in the Chaine Annamitique, the mountain range that separates Laos from Vietnam. It didn't matter that the terrain here was flatter, or that tigers — the frequent quarry of hunting parties in the Laotian hills — weren't among the game species available in Wisconsin. In Laos hunting and fishing were vital to the Hmong's survival; in Wisconsin, it would be no different.

"Survival means bagging whatever you can whenever and wherever you can," Kalmerton notes, "and that's what the Hmong were inadvertently doing here: shooting nongame birds — little tweety songbirds — with rifles; not asking permission to hunt on private property; hunting out of season; ignoring signs posted on closed areas or refuges; exceeding bag limits; hunting without permits, or licenses; and so on.

"And the strangest thing would happen when I'd issue a citation to a Hmong hunter. He'd be smiling the whole time — very agreeable, not at all belligerent or rude — and answer "yes" to every question I would ask. 'Do you have a license?' 'Yes.' 'May I see it?' 'Yes.' And then it would turn out that he didn't have a license after all."

What they had there in Sheboygan County was, as the phrase goes, a failure to communicate. DNR wardens in Milwaukee, La Crosse, Eau Claire, Appleton, and several other parts of the state where Hmong were settling experienced the same difficulties.



Hunting customs and hunting gear are quite different in America. Hmong hunters quickly learned the importance of wearing hunter orange clothing and respecting private property. This slide is used in their hunter safety course.
Photo by John Nelson

Learning new customs in a new tongue

Members of the Hmong community, in the Sheboygan area became concerned after a number of citations were issued to Hmong anglers and hunters for violating Wisconsin fish and game laws.

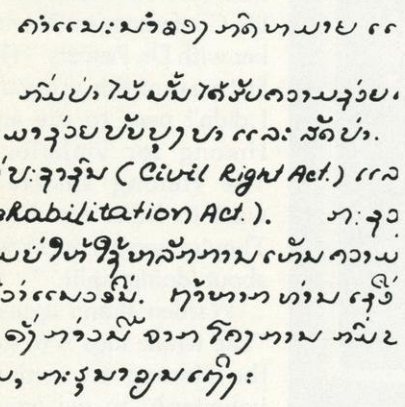
This was unheard of in the Hmong community, where respect for authority and position is ingrained from birth. It was clear that the violations were unintentional, caused by a lack of knowledge about Wisconsin's outdoor etiquette.

Anxious to learn the ways of their adopted country, the Hmong asked for help from their instructors at Lakeshore Technical College's Area Learn-

ing Centers (where the Hmong were learning to speak English).

The first meetings were held in 1983 in church basements around the area. Through an interpreter, DNR wardens and fish managers spoke with the Hmong about the importance of adhering to hunting and fishing regulations, learning safety practices, distinguishing game from nongame species and selecting appropriate hunting equipment.

Kalmerton recalled that everybody learned something during those meetings.



Wisconsin hunting rules were summarized in Hmong and Laotian languages to teach Asian hunters about Wisconsin game rules.

"For instance, the Hmong consider it improper to say 'no' to an older person or to a person in authority. That's why, when I would ask to see a Hmong's hunting license, he'd say 'Yes, I don't have a license.' He'd be trying to tell me 'no' in a polite way."

It took the interpreters a long time to translate the regulations — some of which even English-speaking hunters and anglers have difficulty comprehending. "It seemed that for every English word , there'd be 10 or 15 words in the Hmong tongue," Kalmerton noted.

The Hmong lived with oral traditions and their written language is only 20 years old, noted Dr. Judy Powers, director of the Hmong training program at Lakeshore Technical College in Cleveland. It's difficult to express English ideas in languages that were developed for cultures so remote from Western life, she explained.

There was a second reason for the long-windedness. "We all learn together, as a group, " said Blong Cha, one of the Hmong interpreters at the sessions. "If one of us does not understand, the others help until he does. Then we are ready to learn more."

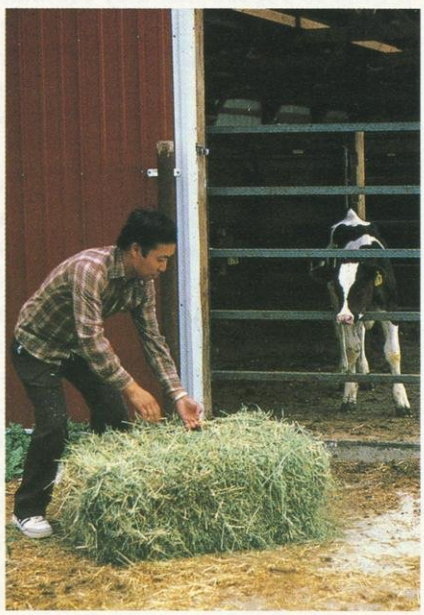
The course instructors discovered that calling attention to individual achievements in class embarrassed the Hmong students, who believe that their progress as a group is far more important — not an unusual notion for a people who place family and clan above all else.

The instructors faced other cross-cultural challenges and differences in vocabulary: "There's no way to translate 'Break down your gun' in Hmong," Kalmerton said.

And problems with the spoken word were compounded by another barrier: different interpretations of body language.

"You never, ever hold your hand up and crook your index finger to motion a Hmong to 'come over here,' " Kalmerton learned. "Make that sign and a Hmong is threatened, thinking you want to fight. What you have to do is use a more universally

Hunter safety classes encouraged Hmong hunters to become good neighbors to Sheboygan County farmers and to understand that hunting is a privilege. The Hmong help out with farm chores and farmers are happy to let their new friends hunt the rural hillsides. Photo by John Nelson



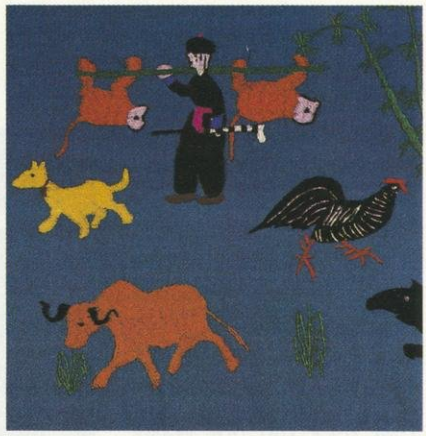


Photo by Alaine Johnson

friendly, helpful gesture: hold out your arm, hand down, palm facing your body, and gently swing the palm toward your chest."

Understanding bag limits, property boundaries, hunting seasons and other conservation regulations were also foreign concepts to the Hmong. In Laos, there were no such restrictions. Accustomed to traveling long distances in the sparsely populated hills and bagging whatever could be caught — bird, mammal or fish — the Hmong hunted and fished to survive.

The fact that in Wisconsin people hunt and fish mainly for sport seemed odd to the Hmong until the wardens explained why.

"We said that there were many people who had an interest in these activities, but there are a limited number of animals and fish. Furthermore, fish and game can only be taken from certain places in the state," Kalmerton said. "The Hmong, with their strong family background, understood very well that hunting wouldn't work if people didn't share and took all the game for themselves. They then realized that it would be very difficult to live exclusively off hunting here."

The undersized fish in the trees helped the wardens illustrate a point. The Hmong, accustomed to keeping everything they catch and letting nothing go to waste, would take the small fry and hang them in the trees to dry rather than tossing them back in the water. "Then, they would eat those little dried fish, just like potato

chips," Kalmerton said. "We explained that if all the little ones were taken, someday there'd be no big ones left. And then we explained concepts of minimum size regulations." Although the Hmong were indiscriminate in what they hunted and fished before they learned the rules, almost all of the wardens who came in contact with them noted that they did not waste game.

Other Wisconsin hunters were irritated by traditional Hmong hunting practices. The Hmong hunted in groups to drive game rather than wait in blinds or tree stands for quarry to appear. The Hmong also whistled to one another to communicate their positions. Other hunters found this distracting. There were Hmong who singed the hair off squirrels over open fires right in the forest, a traditional method of preserving meat but a potentially dangerous practice when the woods are dry. Hmong often don't field dress their deer, preferring to keep some entrails they consider delicacies. And then there were those white pillowcases.

"We were getting reports of Hmong 'sneaking out of the woods, trying to conceal deer,'" Kalmerton said. "But that wasn't the case at all. Yes, they would slip a pillowcase over the deer's head — but that was so the spirit of the deer couldn't see that it was being taken from its home."

Although some of the Hmong have been converted to Protestantism, Blong Cha says that many remain animists who honor myriad spirits that dwell in the forests and sky. In many ways their religious practices are similar to those of Native Americans: there are Hmong shamans who conduct rituals to foretell the future and ward off evil spirits, and "herb women" who collect plants and roots to prepare remedies for illness or offerings to appease the spirits.

Photo by Alaine Johnson

Continuing education

The early Hmong hunter classes proved so popular that they continue to be offered each fall at Lakeshore Technical College (LTC) and at other sites around the state, including the Chippewa Valley Technical College in Eau Claire.

DNR staff conducting the classes now have a helpful teaching aid: a booklet containing a synopsis of Wisconsin's fish and game laws written in English, Hmong and Laotian. The booklet was originally prepared in 1985 by DNR Western District Conservation Warden Mark Brann, Warden Supervisor Doug Radke, and translators Chou N. Vue and Deng Vang. LTC developed a workbook with questions to accompany the translated rule summaries, and the hunter safety test was also translated into Hmong and Laotian to accommodate non-English reading students. Furthermore, LTC videotaped the first Hmong hunter safety class so students could review and study the classroom presentations.

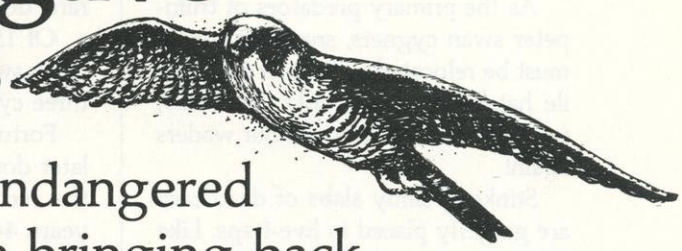
"The year before we had the classes, I'd handed out 12 violations to Hmong hunters and anglers," noted Kalmerton, who'll present a paper on the Hmong education classes during the 50th Midwest Fish and Wildlife Conference in December with Dr. Powers. "The first year of this program, I didn't need to cite any Hmong for violations. The Hmong sincerely want to learn our ways. They're very concerned about 'doing right.'"

Warden Brann agrees: "The whole idea is to get the Hmong to comply voluntarily so we won't have to arrest them. I don't have nearly as many problem with Hmong hunters as I used to."

Kalmerton says that several Hmong have expressed interest in joining conservation clubs in the area and may even start one of their own. "I think that's a great idea," he says. "The Hmong are excellent marksmen, they thoroughly enjoy hunting together, and I think other hunters could learn a lot from them.

"But you know what I'd really like to see someday?" he added. "A Hmong conservation warden/hunter/teacher. Someone who can speak in three Asian languages, who grew up cherishing the mystery of nature, who could help Asian people understand our laws and help other Americans understand the magic that's out there in the woods. Wouldn't that be great?" ■

Gifts we gave ourselves



PEREGRINE FALCON

Happy holidays for the endangered animals and plants we're bringing back. Let's celebrate!

Holly A. Kuusinen

Wrapping large, odd-shaped presents has always been a challenge: makeshift boxes, acres of paper, miles of ribbon and tape. Partridges in pear trees and lords a-leaping present their own special problems.

But where would you find a box to hold 44 trumpeter swans, seven peregrine falcons, 100 pine martens, 30 timber wolves, 420 bald eagles and hundreds of other species like snuff box mussels, eastern bluebirds, purple coneflowers and moonworts?

How much red ribbon would you need to tie bows around flourishing populations of grassland birds, songbirds, and several thousand acres of pristine natural areas filled with native wildflowers, rare prairie grasses, and butterflies?

Happily, these special gifts are already wrapped in the warm generosity of thousands of people who invested in the future and assured a place for Wisconsin's endangered, threatened and nongame species by contributing to the Endangered Resources Fund.

This is a holiday gift we've given ourselves and our children; it's a "one size fits all" present.

Recovering endangered species is not an exact science. We know which forces brought plants and animals to the brink of extinction, but restoring their populations to stable levels in suitable places is often difficult because we've altered and often destroyed that habitat.

Ecology is a relatively new science. We are the first generation to attempt bringing back endangered species. So we are learning by trial and error.

A good turn for Forster's terns

At dawn in the blustery first week of April, we don oversized, leaky chest waders and venture out on a cold, windy lake until late afternoon. Standing on mucky sands and stringing together straw-filled, floating nest platforms, we duck as screaming Forster's terns dive and swoop overhead.

Finally, as we move away, an anxious female alights gently on her new nest platform. Her mate circles above, courting her with a fishy token of affection. Then a second pair appears, and a third . . . until the sky above us is aflutter with Forster's terns eager to take advantage of our generosity.

Holly A. Kuusinen is a DNR public information officer.

BLUE-BIRD

KIRTLAND'S WARBLER

PINE MARTEN

Illustrations by Renee Graef

Herald the trumpeter swans

As the primary predators of trumpeter swan cygnets, snapping turtles must be relocated to protect the fragile hatchlings. On a cold April day, we're off to Waukesha, in our waders again!

Stinking, slimy slabs of dead carp are gingerly placed in live-traps. Like Cajuns, we spend three weeks cagin' more than 160 snappers and finding them a new home. And to think we only used 200 pounds of carpy bait.

A priceless cargo of trumpeter swan eggs are candled and carried by canoe caravan to the reedy nests of four mute swan pairs.

As we paddle over to their nests, these foster parents-to-be hiss, flap their wings and stomp off their nests to wait in the reeds.

The trumpeter eggs are gently lifted from their insulated carrying case like three-pound diamonds and placed quickly in the nest. They must not cool. We drift back, and the mute swans cautiously reclaim their territory. We cringe as the female lowers her 20-pound downy body atop the rare, delicate eggs.

OSPREY

Of 15 eggs placed in four separate mute swan nests, all hatch, but only three cygnets survive.

Fortunately, generous benefactors later donate 30 young trumpeters to the recovery program. In just two years, 44 trumpeter swans now reside in Wisconsin where for so long there have been none.

We praise the common terns

It's July now. At 8 a.m. it's already 89 degrees. The heat on Kidney Island in Green Bay quickly drains strength from those who climb ladders leading to the 52-acre dredge spoil island 10 feet above.

Endangered common terns dive relentlessly at us as researchers slowly walk through the nesting colony. After too many days of 90 degree temperatures, hatchlings lay dead and dying. And there's nothing we can do. Adults skim over the water to cool themselves and bring back a cold, wet breast to comfort their young.

Heat is not their only enemy this summer; a raccoon kills 58 percent of the hatchlings. His eventual capture protects the few hatchlings that survive the heat.

In remote quarters, the news is better. Way up north in Chequamegon Bay at Ashland, common terns are thriving on a community-made "island." Biologists, city planners, sportsman's groups and other volunteers bent on creating a shoreline park worked for weeks building an island they now name "Tern Island."

More than 250 chicks from 171 pairs of common terns survived the drought of '88 on their new island, and the people of Ashland are justifiably proud. Their park and their island stand as testament to what happens when people work together.

Banding baby baldies

Elsewhere in the north, an eagle biologist scales a 90-foot white pine. Above him, a five- by six-foot nest is occupied by two eaglets. His mission: band each eaglet, check for parasites, collect molted feathers for future contaminant studies and take a "family portrait" of sorts for supporters of the Adopt an Eagle's Nest program.

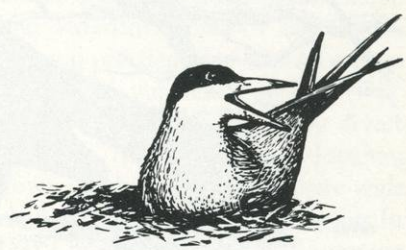
Not all babies are adorable, and eaglets are just plain . . . well, ugly: wrinkly, with ruffled downy feathers and big, yellow feet.

The biologist firmly grabs those feisty feet, gently crimps a little silver band around one leg, does a quick health check, holds his breath to avoid the rotten fishy stench, takes a picture, and climbs down to the crew waiting below to find another nest.

Bringing back the woods weasel

This fall, the forest is cool, crisp and more colorful than in recent years. Another biologist slowly climbs out of his truck for the 29th time in one day and tromps toward a live-trap nestled in the leaves and underbrush of Minnesota. He hears a muffled rustle of leaves and a familiar sound that's a cross between a chuckle and a growl. Got one; another pine marten joins three companions in the truck headed for release in Wisconsin.

Pine marten look like scrawny two-pound house cats with teddy bear faces. Their thick, lustrous fur ranges in color from golden tan to chocolate brown. A bright orange



FORSTER'S TERN

BALD EAGLE

throat patch sets them apart from their larger cousins, the fishers.

Feisty, defensive personalities are backed up with sharp teeth. Right now, the martens are not enjoying their caged ride to their new turf in Wisconsin's Chequamegon National Forest.

Six hours later, the ride is over and the martens spend a night napping before their release. It will take about six minutes to anesthetize, ear tag, weigh and measure each pine marten. The instant their boxes are opened, the pine martens scamper up the nearest tree, turn and look back down at us. One last little chuckle-growl and they take their rightful place in the tops of their Chequamegon forest kingdom.

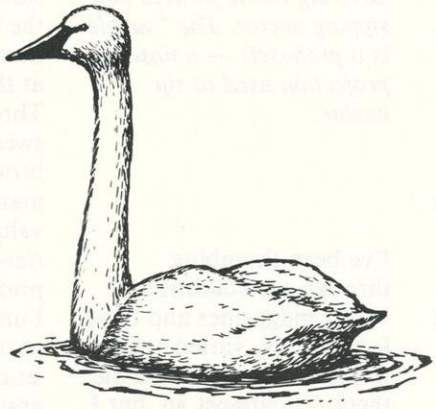
The gifts continue to grow

In Milwaukee, peregrine falcons nest in a hack box on the 41st floor ledge of the First Wisconsin Center. On Van Hise Hall on the University of Wisconsin-Madison campus, six falcon chicks successfully fledge in July, and all survive to migrate south for the winter; in Milwaukee, one of four chicks survives to fly south.

Nevertheless, Wisconsin is once again the home for peregrine falcons after an absence of almost 25 years.

Not all wild gifts fly or scamper. Some are the forests, prairies and wetlands themselves — 215 natural areas where thousands of endangered and threatened plant and animal species live protected from development. Maintaining those areas takes lots of work. Despite August heat, more than 100 young women carefully remove unwanted plants that invade fragile habitats. If it wasn't removed, this unwanted vegetation would quickly shield the rare plants from the sun.

So the work continues — slogging through bogs, scaling trees, braving cold winds to check nests, peering in the nooks and crannies that are home to wild things. These are the gifts your donations buy. During this holiday season, we hope you feel as good about this work as we do at the Department of Natural Resources. Wild animals, wild plants and wild places are worth the work; they are special gifts worth having and preserving. ■



TRUMPETER SWAN

Readers Write

A Wealth of Wisconsin Butterflies by Ann Swengel held interest for both my wife and me. Many years ago my brother and I collected butterflies as well as moths. In my later years I have seen Giant Swallowtails as I'd fish for trout in Grant or Crawford County. I always wanted to get a photo of one with wings open and had seen them on thistles or in places where cattle had walked across streams.

The best place I ever saw for finding butterflies was in Crawford County. My brother lived for a short time in a house which was reached by driving across a small stream. It seemed like all the butterflies of the area would gather there. Had I wished to, I could have made a real nice collection at that place. Now, I'd rather see them flitting about alive than mounted under glass.

I was most interested in the tips for stalking butterflies for now I am sure that with the author's tips perhaps I can take a photo of this one I want.

One time while gathering water-washed beach stones my wife and I saw several thousand monarch butterflies. On another trip, north of Ridgeway, WI, a group of low trees was full of monarchs.

Not everyone sees this. Most people travel the main highways and only go on them to get to where they are going in a rush. People interested in nature as well as the world around them seldom miss a thing.

We notice.

Kenneth Van De Bogert, Delavan, WI

I keep several large flower beds, most of which contain marigolds, orange cosmos and petunias. Recently a strange creature started visiting these gardens. It resembles a moth with antennae and legs but its wings never stop moving — they move so fast you can hear a humming sound. It also has what I'd call a suckle, which goes into the flowers and can curl when the animal feeds.

This creature isn't people shy. Shortly after it arrived a smaller version came on the scene. This one has green on its head, orange on its back and a white belly. It appears to have tail feathers, but also antennae and what look like legs. Its wings never stop moving.

Both animals are fast. Do you know what they are?

Cristopher LaPlante Oxford, WI

Most likely you saw either a Snowberry Clearwing or a Hummingbird Clearwing — both moths. Unlike most moth species they fly during the daytime. They are indeed remarkable to view, hovering above flowers and sipping nectar. The "suckle" is a proboscis — a nose-like projection used to sip nectar.

I've been thumbing through my collection of WNR magazines and have found many varied articles to my liking. I cut and file them. I'm almost 86, but I still develop files for future reading.

I'm saving the cover of the September/October 1987 issue, which shows a muzzle-loading hunter firing a flintlock rifle. I hunt with a .54-caliber Jaeger-type replica flintlock of the Revolutionary War period. And I would like to see more areas set aside for black powder hunting. Like bow hunting, it requires more skill, more patience.

I am retired from a military career, and have hunted Fort McCoy several years. They have a well regulated hunt and also an earlier season one. I hope that Wisconsin, like many other states, will adopt a special muzzle-loading rifle season for deer.

Robert L. Gregory Racine, WI

I enjoyed your article on the Wisconsin Conservation Corps (July-August 1988) and agree they deserve credit for their hard earned work. I also think the Wisconsin Youth Conservation Corps (ages 15 to 18) deserves a lot of credit. Being 15 and a sophomore in high school, I spent the past summer in the YCC in Kettle Moraine State Forest. Close to 100 of us each session chose to work in the heat instead of staying home in the cool house or at the beach resting. Through all the blood, sweat, and tears, we brought home with us many life-time friends, a valuable educational experience, and a feeling of pride and accomplishment. I am proud to have been part of it and would like to let others know of this program through your magazine. An experience like this should not be wasted!

Nicole Schroeder Rice Lake, WI

I've read the article entitled "Showtime Under Starlight" in the July/August issue, and would like to know how I can contact the Heritage Ensemble group. I'd like to be able to schedule them for a performance at the school where I'm employed.

Cynthia Pahl Green Bay, WI

Schools should get in touch with David C. Peterson, 720 Lowell Hall, 610 Langdon St., Madison, WI 53703, (608) 263-3369.

I have enclosed a slide I hope you'll examine and identify. ▶

I found this little guy (about 1/4-inch long) feeding on a Virginia winterberry bush. It is snail-like, has no legs, and travels on a slime-producing "foot." However, I couldn't see any antennae. I've done some research, and the creature most closely resembles Chitons (Class Amphineura, Order Polyplacophora), but I think they may all be saltwater animals.

So what is it?

Greg Scott, Gilman, WI

We believe you've photographed a Tortricidia, probably testacea, a slug caterpillar that feeds on the foliage of hardwood trees. Slug caterpillars have larvae that are short, fleshy and sluglike. Many of the larvae are curiously shaped or conspicuously marked. The cocoons are dense, brownish and oval. The adult moths are small to medium-sized, robust and hairy, and are usually brownish and marked with a large irregular spot of green, silver or some other color.

NEXT ISSUE:
Building Igloos
Ice Safety
Muskrats in winter

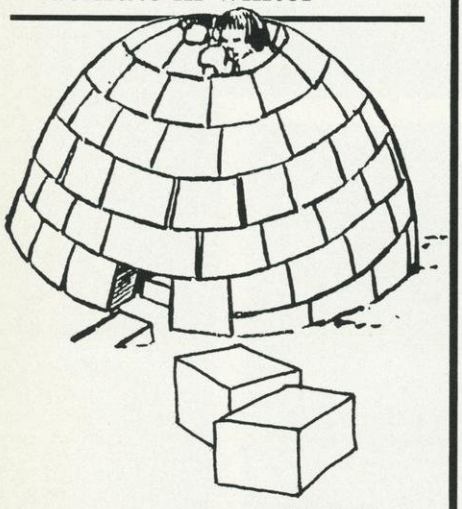
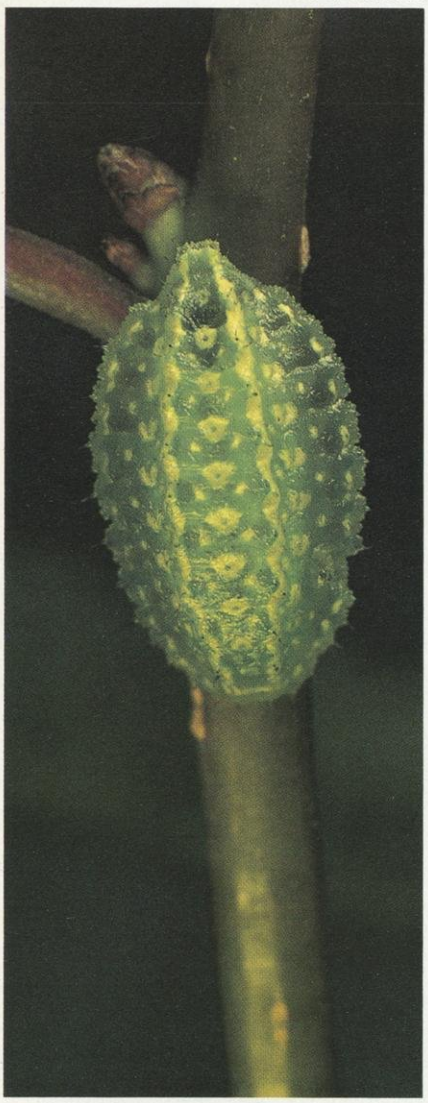


Photo by Greg Scott



Like little, green christmas stockings, Christmas fern leaflets shed festive light.
Photo by Barbara Hallowell

Continued from page 2

ness makes it an excellent woodland garden plant. It ranges from eastern Canada south to Florida, extending westward as far as Wisconsin and Texas. Our state is at the edge of its range. Although relatively rare, Christmas fern can be found in counties along Lake Michigan, and in Walworth, Columbia and Grant counties.

In early spring, the clustered, evergreen fronds that lasted through the winter lie in a flat crown on the forest floor. New fronds arise at the crown's center. The unfurling new fronds are called "fiddleheads" because of their shape. They uncoil to a height of 1 - 2½ feet. Last year's fronds gradually decompose, becoming part of the rich woodland soil that nourishes the new leaves.

Each frond is a single leaf, but is divided into many leaflets, called pinnae, arranged along the central stalk. The pinnae of Christmas fern are toothed and have a little "ear" near their base, giving them a characteristic "Christmas stocking" shape.

Most familiar plants, like dandelions and daffodils, produce flowers and consequently seeds, from which new plants grow. Ferns, however, produce no flowers or seeds. People in the Middle Ages, puzzled by the absence of flowers and seeds, thought fern seeds were invisible and believed that if they could be found, the finder would obtain the power to become invisible at will!

We now know that ferns reproduce by way of spores, tiny cells that form inside spore cases, or sporangia. Sporangia are often grouped in clusters (called fruit dots or sori) on the back of the frond. On the Christmas fern, the sori are in rows on the backs of pinnae toward the tip of the fertile fronds. Sometimes people mistakenly think these small brown dots are scale insects or a sign of disease.

When a spore is released and lands in a suitable spot, it grows into a little fingernail-sized plant, the prothallus. The prothallus produces both female and male cells that unite to form a new fern. An understanding of this amazing process eluded people until the 1850s!

Our state's ferns provide unbounded opportunity for finding delight in the beauty of the outdoors. Christmas fern's deep green, enduring fronds add a festive, holiday spirit to Wisconsin's winter woods. ■

Anne Hallowell edits educational publications for DNR's Youth and Education programs. She has written extensively about ferns.

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