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Special Supplement:
Groundwater: Wisconsin's buried treasure

Goldenrods

ROBERT H. READ, DNR Botanist

When I was a child, one of my summertime playmates would always lament at the first droning of the cicadas: School was just around the corner. To me, the harbingers of summer's end were the flowering of goldenrods on the roadsides and in the fields.

Actually, Wisconsin's 20 species of goldenrod inhabit a wide range of habitats besides roadsides and old fields. Some species prefer woodlands (elm-leaved and zig-zag goldenroads), some wetlands (swamp, rough-leaved, and Riddell's goldenrods), and others are found in grasslands (Canada, Missouri, showy, and grass-leaved). Certain species are, in fact, downright fussy in where they grow. The blue-stemmed goldenrod, for example, is found only in rich woods in southeastern Wisconsin, and the dune goldenrod exists in our state only along a few miles of shore in Door County. These two species are so rare in Wisconsin they have been listed as endangered and threatened, respectively.

Look closely at the yellow wand of flowers and you will likely see an entire insect community hidden among the blossoms. One of my favorite goldenrod insects is the ambush bug (which I usually call the "Popeye" bug due to its thickened front legs which look like Popeye-the-Sailor's forearms). It is camouflaged from the insects on which it preys and catches them in those Popeye-arms—actually very deadly (to the hapless insect) pinchers. These ambush bugs can catch insects many times their size, as big as a bumblebee.

The galls often found on goldenrod stems are familiar to anglers. These thickenings are actually nurseries for a number of small flies and moths. When adult insects lay their eggs, they also inject a plant growth stimulator and after the eggs hatch the larvae eat on the ample tissue and are housed within it to boot! The worms make good fish bait.

The goldenrod has been much maligned as a hay-fever causer, but as with other insect-pollinated flowers, its pollen is heavy and sticky, not prone to be wind borne. Ragweed pollen, on the other hand is picked up by every breeze.

One of my favorite goldenrod anecdotes comes from E. Laurence Palmer's classic *Fieldbook of Natural History.* Says Palmer "It has been proposed that since goldenrods of one sort or another are to be found conspicuously and widely distributed over America, they should be our national flower. Unfortunately, this might be taken to mean that we worship gold and the idea has not won favor."

Goldenrod has also inspired many poems. I like this one best.

The Golden Rod
FRANK DEMPSTER SHERMAN

Spring is the morning of the year,
And summer is the noontide bright;
The autumn is the evening clear,
That comes before the winter's night.

And in the evening, everywhere
Along the roadside, up and down,
I see the golden torches flare
Like lighted street-lamps in the town.

I think the butterfly and bee,
From distant meadows coming back,
Are quite contented when they see
These lamps along the homeward track.

But those who stay too late get lost;
For when the darkness falls about,
Down every lighted street the Frost
Will go and put the torches out!

Photo by Hazel Hiemstra

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A wildlife artist needs to draw from many sources when he does a painting — field studies, photographs, sketches of landscapes, mounted specimens and, most of all, memory.

I have always wanted to do a picture like Artist's Studies, showing several of the things a bird artist uses in his work. So, I gathered up some bird eggs, feathers, a couple of bird skins and color notes and arranged them on a velvet cloth in my studio. Specifically, there is a turkey feather, a barred owl feather, scarlet tanager and indigo bunting skins (with their museum tags attached), a variety of eggs and a page from one of my notebooks. I have endeavored to make this painting very realistic and detailed.

From The World of Owen Gromme
Complete story on page 4

Back Cover: 1983 Waterfowl Stamp Contest

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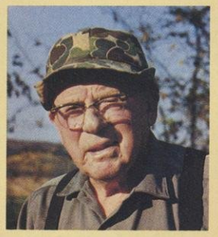
The world of Owen Gromme



A biography of octogenarian Owen Gromme, Wisconsin's most famous wildlife artist will be published in October by Stanton and Lee of Madison. Called *The World of Owen Gromme,* the book not only recounts Gromme's development as an artist and his emotional involvement in resource issues, it also contains 100 full color reproductions of his finest works. Each reproduction contains a commentary by Gromme on the piece of art — on technique, natural history, circumstances of creation or perhaps philosophy. Several are reproduced here along with excerpts from an introduction to the biography by Roger Tory Peterson and from the book itself which was written by Michael Mentzer. In format the book measures 13 by 10 1/2 inches and contains 300 pages. It sells for $60.00 and will be available from bookstores and from the publisher.

Owen Gromme was born in Fond du Lac in 1896. The acknowledged "dean" of wildlife artists, he has filled his life with over eight decades of achievement in careers as a taxidermist, naturalist and wildlife artist.

Following the mold of John James Audubon and Louis Agassiz Fuertes, Gromme shares the belief that birds and other animals should be painted by those who know their subjects and feel deeply about them. His artistic skills were developed in tandem with his skills as a museum taxidermist, a position he held with the Milwaukee Public Museum for 43 years.

Gromme was and still is a conservation activist. He was one of the prime movers in the successful campaign to reflood Horicon Marsh after it had been drained for agriculture. He was one of those who recognized DDT's threat to birds very early and along with Rachel Carson helped alert the public to its dangers.

Gromme first gained national recognition by winning the 1945 Federal Duck Stamp design contest. However, his canvases remained relatively unknown until the publication of *Birds of Wisconsin* in 1963, a collection of 600 bird portraits depicting 328 species. In 1965, Gromme was commissioned by the Marshall and Isley Bank of Milwaukee to paint whatever he pleased for three years. By 1968, he had produced 43 originals which were then placed on permanent display at the bank's headquarters.

These brought him international recognition. Today he continues to paint daily with skill and speed as his list of commissions grows longer and longer.

Gromme and Anne, his wife of 56 years, live on a 160 acre tract of land in Briggsville, Wisconsin. There, he remains an active outdoorsman, a prodigious artist, and a committed conservationist.

"I love the outdoors and everything about it and the whole universe in which we live. My one aim in life is to record it for my own satisfaction and the satisfaction of the people who come after me. That's all there is to my art."

Owen J. Gromme

Bobwhites

"My old friend Herb Stoddard, in his authoritative book on the species entitled **The Bobwhite Quail: Its Habits, Preservation and Increase,** *stated that the old fashioned rail fence did more to conserve quail than almost any other factor. The reason lies in the fact that each angle between the sections of fence prevents the mowing machine from getting in. Consequently, there is almost always a lot of brush growing along rail fences, providing great protection for the quail. With the disappearance of the rail fence in many parts of the United States, much of this ideal habitat for northern bobwhite quail was lost."*

Virginia Deer with Fawns

"There is no large mammal which is quite as well-known or loved as the whitetail deer.

One day I very carefully observed this doe and her two fawns as they approached the water for a drink. The sun shone behind the animals, causing the light to filter delicately through their ears, making the ears seem almost translucent.

The mother is a scrawny doe with her ribs and loins showing because most does are quite lean at this time of year, since the nursing fawns keep their mother's weight down. And she has a few scars on her skin where she has been tangled in barbed wire fences. But she makes a beautiful picture with her new fawns.

Finally, the water, coffee-colored due to the tannic acid of the tamarack swamps it flows through, contrasts nicely with the soft green of the summer foliage."

Now, more than at any other time in his life, Gromme is frustrated and angered by the policies of the current federal administration. Gromme believes that the progress wrought by a generation of environmentalists like himself is now on the auction block. He cautions that while "we may in time change the government, there is not much we can do to replenish our natural resources."

"Once the resources are gone, they're gone," Gromme argues. "We'll never have them back again. Current policies are turning our natural resources into fat bank accounts, and that is what really disturbs me."

Gromme laments what he calls "change in emphasis" at the Department of the Interior in particular. "I want my grandchildren to have fresh air to breathe and clean water to drink. I don't think that's too much for any of us to ask."

Gromme expounded on this environmental ethic in detail during a commencement address at Fond du Lac's Marion College in June of 1978: "We owe a great deal to those who came before us, and it is our duty to pass on to posterity a world morally and physically as good or better than the one we live in... By every legal means, it is our duty to oppose those who, out of greed and avarice, or for selfish or other reasons, would pollute, defile or destroy that which means life itself to every living being."

From The World of Owen Gromme

Common Gallinule (Moorhen)

"The major elements of a wildlife painting are subject, composition, light, color and detail. These are things which I strive for in each and every painting. I try to make each work that I do better than anything I have ever done before. The completed painting may not be the best that has ever been done, but I want it to be the best that I have ever done.

Take this painting of a common moorhen (gallinule) as an example. In it, I placed the moorhen (or Florida gallinule as they are also known) in a setting which is typical for it. Then I made the plants and land formations lead the viewer's eye to the bird. Without fencing the moorhen in it, the plants establish a direction for the eye, always bringing the viewer back to the bird.

As far as light and color are concerned, they are interdependent, for the direction and type of light — morning, midday or evening — largely determine what colors predominate. And the bird itself is portrayed with the kind of detail and accuracy that many years of observation bring."

Canvasbacks

"Canvasbacks, like other diving ducks, can be thought of as cold weather ducks. They stay in the northern climes until freeze-up and are often seen when the snow is blowing. This picture, for example, shows a flock of 'cans' winging in over the ice and frozen shore to a patch of open water. On their way south against a dark, cloudy sky, they have probably spotted this open water and are coming in for a rest before continuing their southerly flight.

Canvasbacks are easy to recognize in flight because of their large, rusty-red heads and muscular necks. Considering the speeds they attain (up to 70 mph), 'cans' have comparatively short wings which they must flap very rapidly to attain such great speed."

Barn Owl

"We call this bird a common barn owl because of its habit of nesting in old barns, silos, church belfries or other old buildings. Actually, I have only known of one owl which ever nested in a barn, but the name seems quite appropriate nevertheless.

There is something 'ghostly' about the common barn owl. Its light color, heart-shaped face, dark eyes and silent flight all contribute to that sense of "other-worldliness" which the barn owl evokes. And since they are often seen flying at night, just beyond the reach of a car's headlights or else in the dim light of some old, musty building, they give a sense of being unreal.

Embracing this point of view, I painted my barn owl in a setting which would contribute to its ghostly aura. Peering down from the haymow of a musty, rough old barn, the owl is surrounded by cobwebs, dust and relics from a bygone day. This was a commissioned work, with the patron requesting the background of an old barn, and I was quite pleased with the final result."

When the National Audubon Society held its annual convention in Milwaukee in 1970, the Gromme exhibit at the Marshall and Isley Bank was the big attraction. Inasmuch as I had not yet seen any of his original canvases, I was unprepared for what I found. As I stood before each canvas I was dumbfounded. Here was an artist, 12 years older than I, doing his very best work at a time in life when so many other painters were putting their brushes aside. It was a moving experience; an extraordinary affirmation of life and vitality. An example to follow.

Owen Gromme demonstrates as convincingly as any man I know that creative growth can continue, and need not taper off or atrophy when a person reaches the traditional age of retirement. Quite the contrary. It was then that his art — painting birds — soared to new heights. His output was prodigious and it became almost a status symbol to own a Gromme original, many of which were reproduced as limited edition prints by Wild Wings, Inc. Over 40 years at the museum had given him the training and discipline that made his formidable skills possible.

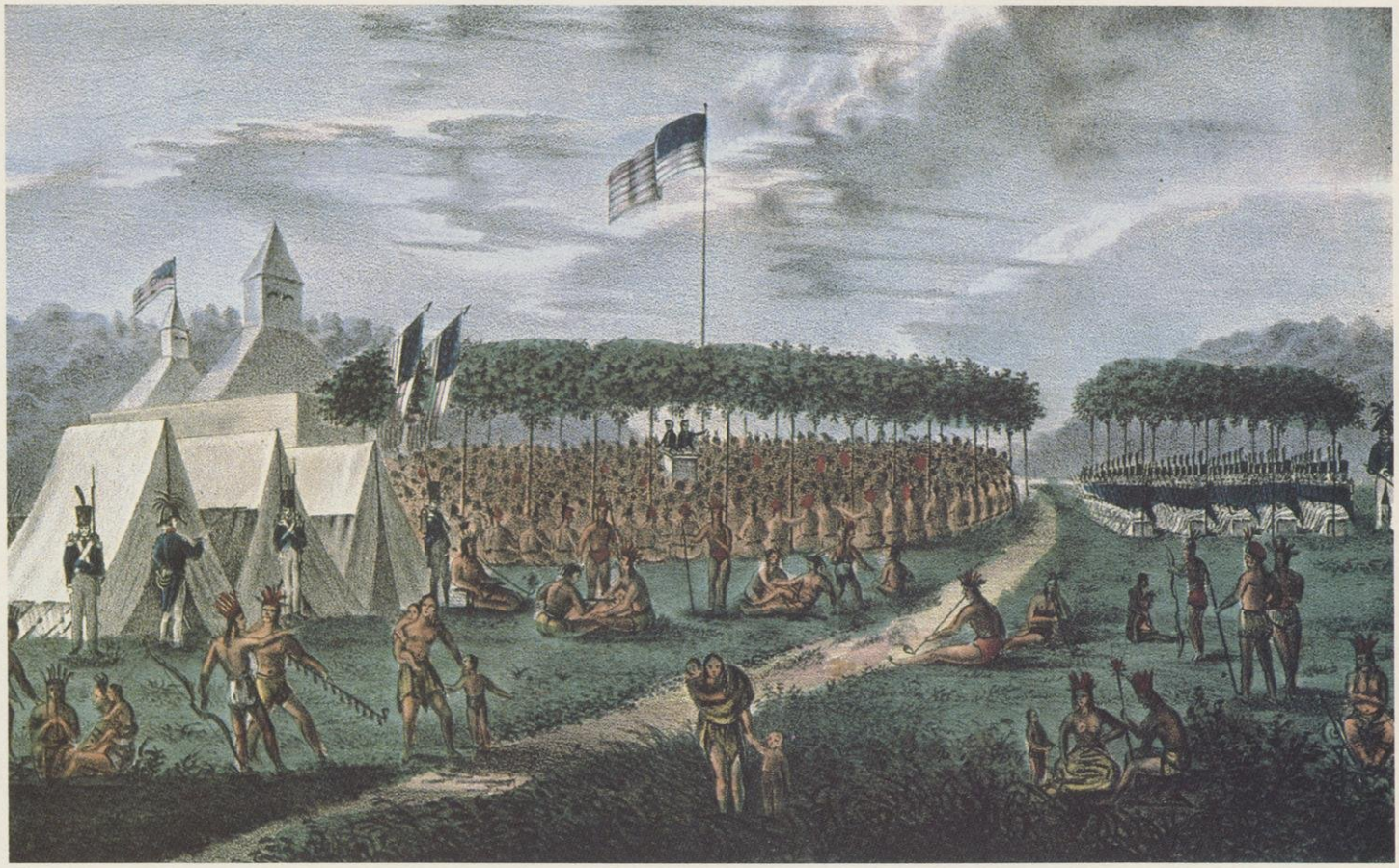
From introduction to The World of Owen Gromme *ROGER TORY PETERSON*

Despite the setbacks, the frightening prospect of acid rain, the continued erosion of some of our nation's most precious topsoil, the threats to pure water and the expanding list of endangered species, Gromme remains hopeful. He is convinced, much as he was in 1935, that education of the nation's young people will insure the preservation of our country's natural resources. "If we are to save this fair land of ours," he contends, "conservation must be taught to the school children."

Pausing for a moment, he adds, "I like to reduce things to a few sentences, something easy to understand. If you think about it for a minute, it's all very simple. The next generation needs pure water and clean air. It's our job to make sure they have it."

From The World of Owen Gromme

Ceded rights:
The Chippewa tribes



More than 5,000 warriors of the Chippewa, Sioux, Sac, Fox, Winnebago, Potawatomi, Menominee, Iowa and Ottawa tribes attended the signing of the Treaty of Prairie du Chien in September of 1825. Governors Lewis Cass and William Clarke were the US Commissioners. This lithograph was painted at the scene by Artist James Otto Lewis.
State Historical Society photo

William Wildcat Sr.
Photo by author

Robert E. Deer

Tribal-state agreements may be the way to ultimately guarantee Native American rights.

ROBERT E. DEER, DNR Native American Coordinator

"When I was very young," William Wildcat, Sr., said, "My dad told me that grandpa used to talk about the tribe and their territory. He said that we gave up a lot of our land to keep a little. We used to hunt and fish all over. After a while we couldn't live that way anymore; the land was crowded and game was scarce. But we never gave up those rights! They were taken from us and some day we'll get them back.' Old

Grandfather's story-telling was right I guess." Bill was referring to the Chippewa Nation's ceded rights on the former Indian territories including those in Wisconsin. And it now looks as though the Chippewa may have reaffirmed those rights and reclaimed a lost practice. Time (and the courts) will tell.

Bill Wildcat, former chairman of the Lac Du Flambeau Chippewa Band and the Great Lakes Intertribal Council, was talking to me from across the table in his home and illustrating the Indian perspective on the ceded rights issue. He didn't think it was a crisis and felt that the Chippewa tribes and the Department of Natural Resources could work cooperatively on this new court decision.

However, the court ruling has caused a certain amount of anguish in the non-Indian world. It states that the Lake Superior Chippewa can hunt, fish, trap and gather on all non-reservation public lands in northern Wisconsin and that permissible regulation by the state must be determined by the courts.

The case has been in litigation for 10 years. A US Appellate Court issued the latest decision to allow Native American's their so-called "usufructuary*" rights of hunting, fishing, trapping and gathering. This reversed a decision by a US District Court.

The appellate ruling will either be reviewed by the US Supreme Court on appeal or remanded back to District Court where the concept of permissible state regulation would be considered. That is, just what type and what level of state regulation over Indians in the ceded territories, is permissible or perhaps, "reasonable and necessary?" Either way, the adversarial, contentious court process will result in a fight over Chippewa Indian rights. It may take a long time to settle.

Litigation does not always lead to predictable results. In another case heard by the US Seventh Circuit Court of Appeals the issue was not off-reservation Indian rights but on-reservation, non-Indian rights.

The ruling gave the State of Wisconsin exclusive jurisdiction to regulate hunting and fishing by nonmembers of the band on the Lac Courte Oreilles Reservation.

The paradox of the two decisions is interesting. Non-Indians may now enter a reservation where there is public access to navigable waters and fish free of tribal regulation while the Indians could possibly leave the reservation and hunt and fish free of state regulation. Both of these cases are being appealed but where will it end? The results appear to be unpredictable.

Historically, the Indian tribes in Wisconsin, the Menominee, Chippewa, Winnebago, Oneida, Potawatomi, and Stockbridge-Munsee lived nomadically, travelling throughout Indian country in search of fish and game. Their lives and their needs were tied to their natural resources. During good harvests the tribe prospered and during poor harvests they suffered. Such direct dependence upon natural resources where life itself depended upon the harvest, made ownership and possession of the land critical to the tribes. They did not give up land and resources willingly or easily. However, they were eventually forced into various forms of compromise as non-Indian settlers moved into Indian country.

One method of compromise was the treaty. Herein, the tribes surrendered large tracts of Indian country for various concessions from the federal government. Typically, treaties contained such language as, "A treaty of peace and friendship... The parties, being desirous of reestablishing peace and friendship between the United States and the said tribe or nations..." (Treaty with the Menominee, 1817) or "The right to hunt on the lands herein ceded so long as the same shall remain the property of the United States, is hereby secured to the nations who are parties to this treaty..." (Treaty with the Chippewa, 1829). This language not only recognized the sovereignty of the tribes as a society but also their dependence upon and right to use the natural resources. The treaties were signed by various US representatives while the chieftains of the tribes made their x-mark.

That Wisconsin Indian tribes have rights should surprise no one in a society where the rights of the individual are of major importance.

A number of critical concepts used in contemporary court interpretations are derived from the treaties. One of these originated in 1832 when the US Supreme Court stated:

"If words be made use of, which are susceptible of a more extended meaning than their plain import, as connected with the tenor of the treaty, they should be considered as used only in the latter sense... How the words of the treaty were understood by this unlettered people, rather than their critical meaning, should form the rule of construction."

This approach recognized the fact that the Indians and Indian leaders at that time could neither read nor write English. Many of them couldn't even speak it and translators were needed at the treaty-signing ceremonies.

In 1899, the US Supreme Court again reiterated this principle when it held that "A treaty must therefore be construed, not according to the technical meaning of its words to learned lawyers, but in the sense in which they would naturally be understood by the Indians."

Another court rule is that ambiguous words and phrases should be resolved in favor of the

*Usufructary is a legal term that refers to property rights. It comes from two Latin words: *usus* which means use and *fructus* which means enjoyment."

Indians. A recent US Supreme Court ruling stated that:

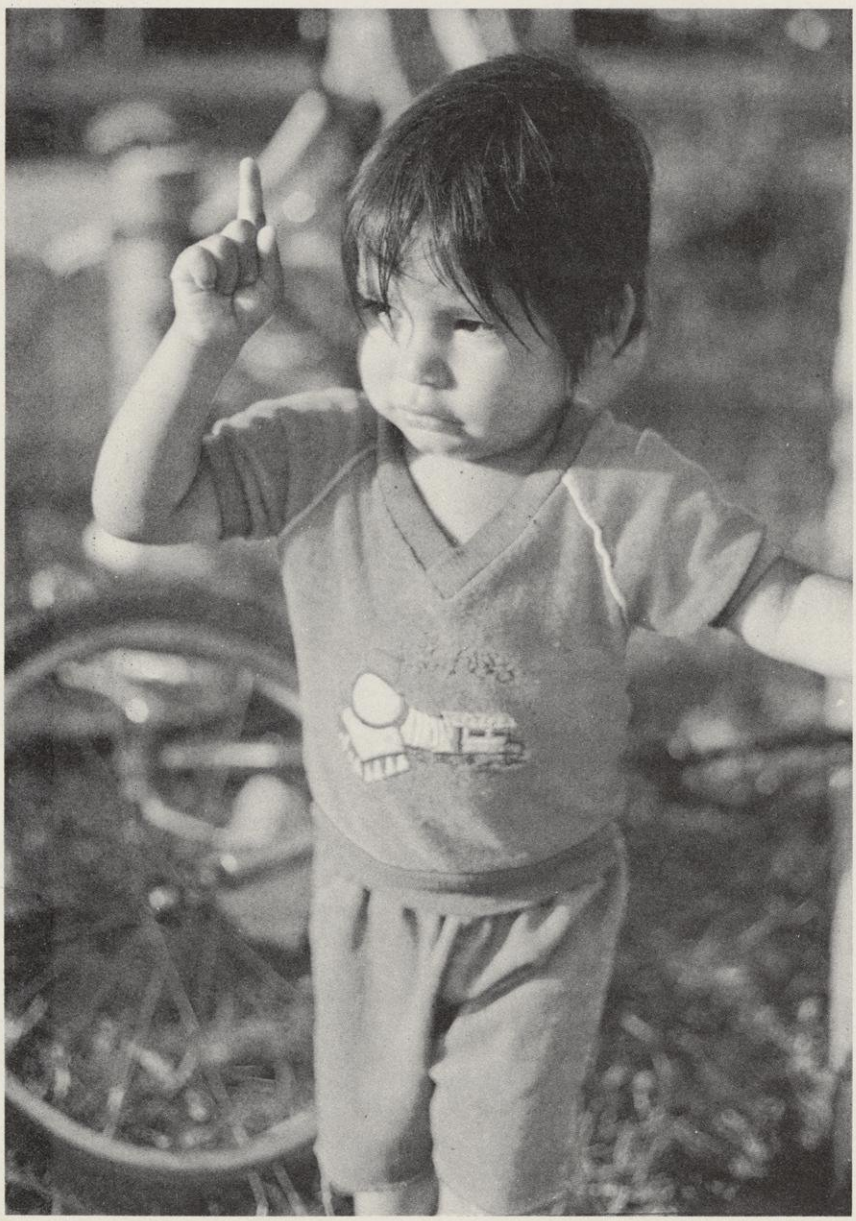
"On account of their relations to the Government, it cannot be supposed that the Indians were alert to exclude by formal words every inference which might mitigate against or defeat the declared purpose of themselves and the Government even if it could be supposed that they had the intelligence to foresee the double sense which might some time be urged against them."

These court standards require a liberal interpretation of disagreements in favor of the tribe.

Recently, the US District Court of Oregon made a ruling based on this so-called "canon of construction." It upheld the Klamath Indian tribe's claim that a 1906 cession agreement did not abrogate the tribe's treaty rights to hunt, fish and trap free of state regulation on the 700,000 acres of land ceded in the agreement.

The courts will probably continue to decide contested rights issues in favor of Indian tribes both in Wisconsin and elsewhere. This legal battle for rights, however, is only one of the roots of litigation. The separation of the tribes on reservations by geography, culture and race, their subordinate economic, political and legal status and the attitudes and values of the rest of society are also at the roots of Indian litigation. In fact, the total complexion of the non-Indian presence and actions vis-a-vis the tribes often leads to an embattled reservation Indian perspective. That is, the tribes are determined to preserve whatever expression of culture, history and existence they have left at almost any cost in any form. The reservation is, literally, the last "home of the brave." The tribal leadership will fight in the courts to preserve what is left.

Native American treaty rights are important to the future of Indian youngsters. Photo by author

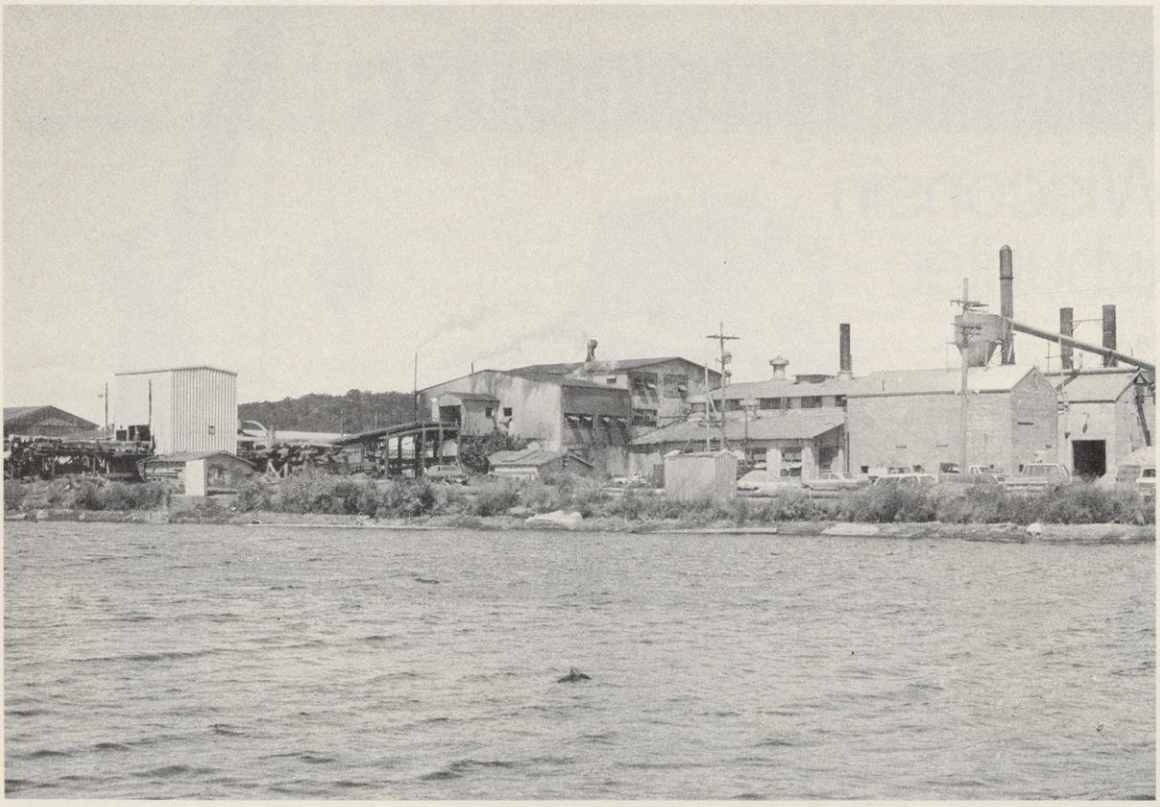


That Wisconsin Indian tribes have rights should surprise no one in a society where the rights of the individual are of major importance, where the Constitutional rights and the Bill of Rights support the nation's existence and where the court system is available to guarantee the rights of the citizen. After all, society is loaded with rights concepts: property rights, corporate rights, employment rights, union rights, legal rights, state's rights, federal rights and the right to bear arms. With such a focus on rights it seems only logical that the Indian tribes would define and assert their rights. And they do! They have treaty rights, reserved rights and ceded rights. And the court systems at the state, local and federal level acknowledge and support them.

A recent Wisconsin Supreme Court case ruled on this issue. In State vs. Lemieux the court said that the state cannot enforce hunting regulations against members of the Bad River Band of Lake Superior Chippewa on the Reservation because it impermissibly infringes upon their treaty-guaranteed hunting rights. The treaty rights of the tribe are paramount and even supercede the state's safety statutes.

Twelve years ago, in the case of State vs. Gurnoe, the Wisconsin Supreme Court decided that "whether the right to fish in Lake Superior is denominated 'off-reservation rights' or interpreted to be inherent rights under the treaty, the result is the same — the Chippewa are entitled to the right to fish Lake Superior." Furthermore, the state must show that "the regulations which it seeks to enforce against the Chippewa are reasonable and necessary to prevent a substantial depletion of the fish supply." This raises an interesting question or two. When does depletion occur; at a level of fish stocking which supports a sports fishery, a commercial fishery or an Indian subsistence fishery? Who manages? Who regulates?

The rights questions pose interesting challenges to DNR's resource management concepts and practices. The idea that a class of resource users has legal rights to use the states resources free of state regulation is anathema to traditional conservationists. It seems to make no contemporary sense. Yet, not too long ago unregulated resource use was the norm for everyone. Trees were clear-cut, the buffalo were almost exterminated and other species of animals and birds were hunted to extinction. The motto "Do as I say and



The Menominees operate this sawmill at Kenosha. It is supplied by their 200,000 acre forest which the tribe manages with DNR and the Bureau of Indian Affairs in consulting roles.
Photo by author

not as I do" holds no credibility among the tribes when they view non-Indian conservation practices from a historical perspective.

But what of the Indian conservation practices? Do they protect the resource and are they demonstrably valid? Are the apprehensions of the non-Indians justified by the practices of the tribal governments? To answer these questions, one should examine contemporary tribal examples of resource management and the interests therein.

Perhaps one of the best examples of tribal resource management can be found on the Menominee Indian Reservation just northwest of Green Bay. Here, the tribally-owned sawmill processes most of the logs produced from the Menominee forests (over 200,000 acres of commercial forest land). The forest is cut on a sustained yield basis — each year only the amount grown is cut. It is self-perpetuating and will not be destroyed as long as sustained yield cutting is maintained. The forest is a lesson in tribal government relations. The Menominee Indian Tribe manages it in cooperation with the state and federal government. The tribe contracts with DNR for fire control and also gets assistance in sustained yield management. DNR personnel are stationed on the reservation. The Bureau of Indian Affairs also helps. Together, the joint management effort creates a better resource.

Other examples of Indian/State cooperation exist. DNR and the Red Cliff Chippewa have formed a management partnership regarding the Lake Superior fishery. Its long term goal is to protect fish resources. Under it, sport, commercial and subsistence users all receive a fair allocation. The plan is new and experimental but seems to be working.

A recent Tribal/State agreement between the Menominees and DNR was concluded in August. It gives environmental protection services to the tribe in regard to spills of oil and hazardous substances and establishes a policy of environmental cooperation with DNR. The reservation's resources are bound together with those of the state and environmental protection is in the interest of both.

The Lac Courte Oreilles Chippewa display an equal interest in preserving the resource. They have pledged themselves to cooperative state relationships, "promoting tourism, preserving endangered and threatened species and enhancing wildlife propagation... and taking a positive approach for the good of Wisconsin citizens, visitors and Indians."

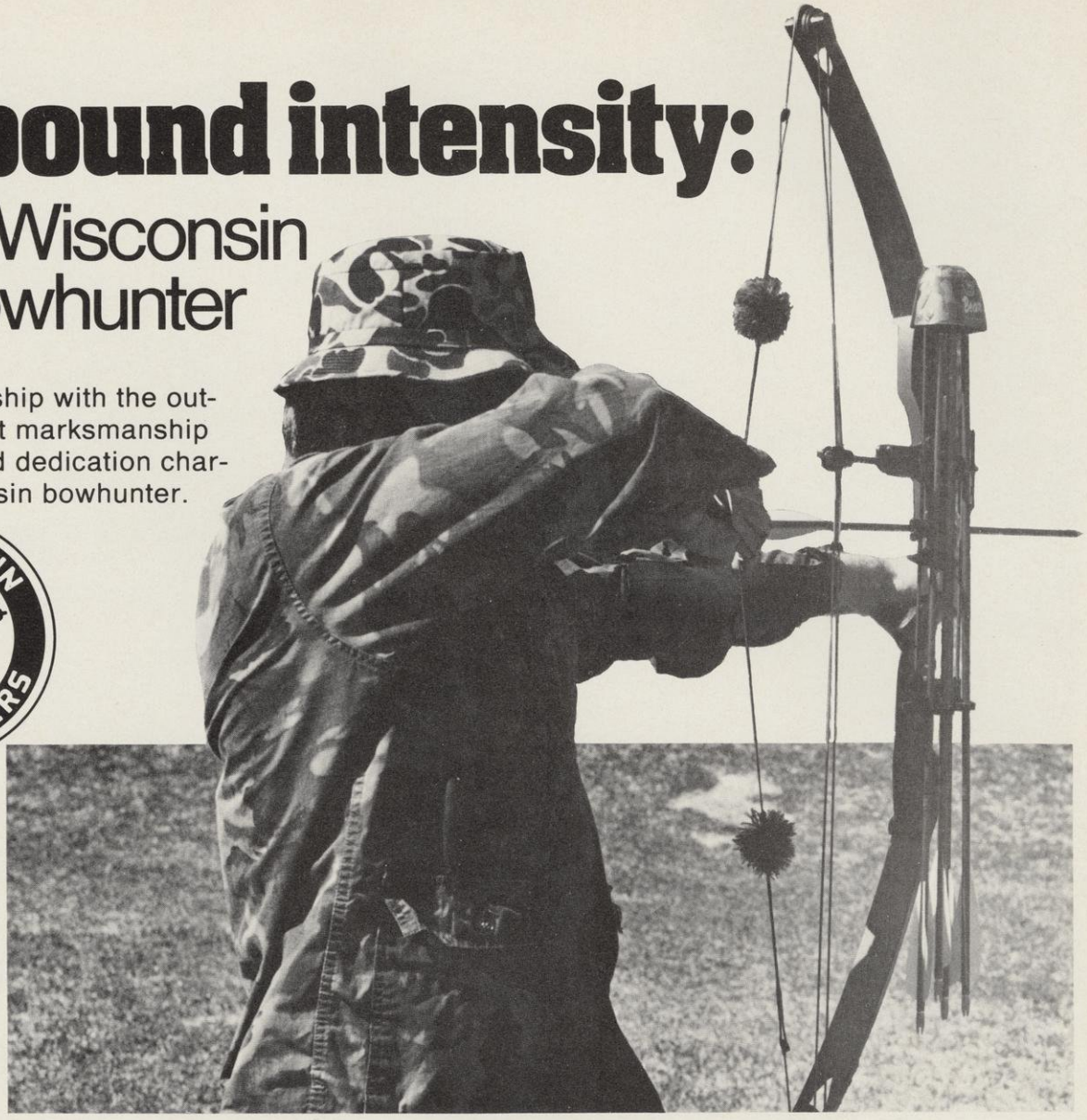
Given the record, attitude, and approach of the tribes to resources management issues, it is unlikely that the resource base will be harmed. What is necessary, however, is a different accommodation. The tribes will expect and demand that their legal rights be fully acknowledged, respected and implemented. It is only right in a society based upon "rights."

The ultimate nature of Tribal/State agreements is purely speculative but regulation may involve distinct differences between Indian and other user groups. These might include differences in enforcement practices, in bag limits, seasons, gear and possession limits. Tribal courts which have an increased level of tribal sovereignty are also probable. There may be monitoring and intervention by the Bureau of Indian Affairs. Whatever the case, the basis for Tribal/State cooperation has been established. With the help of court definition and mandates, it may be ordered and preserved.

Compound intensity:

The Wisconsin bowhunter

A personal relationship with the outdoors, a fetish about marksmanship and single-purposed dedication characterize the Wisconsin bowhunter.



Marksmanship is important.
Photo courtesy Bear Archery.

ROBERT JACKSON, UW-La Crosse

Let your imagination work, and recall a time when you were alone and absolutely quiet in the Wisconsin woods. The hush that struck you when you finally stopped walking and took a comfortable position has now been broken by a jay picking acorns overhead, a chipmunk darting beneath a deadfall and an awareness of hundreds of trees singing their different songs in the gentle winds of evening. Your eye, free to do more than pick out a placement for each footstep, provides hundreds of details that must be sorted out and interpreted. You gradually become a part of all that is around you.

If these thoughts seem familiar, you can begin to sense some of the unique experiences and satisfactions to be found in bowhunting — Wisconsin's fastest growing shooting sport. This article will try to help nonhunters understand the appeal of bowhunting based on three years of extensive research. Individual and group interviews with members of 20 of Wisconsin's bowhunting clubs not to mention a few personal and other mistakes were the sources of this material.

For most of us bowhunting presents a shadowy mix of mental pictures from sightings of camouflaged hunters sharing a favorite grouse cover to memories of Errol Flynn gliding through Sherwood Forest. It also has a new, unfamiliar vocabulary — words such as compound, recurve, longbow, fletching, spine, shaft and strange new identities such as Bear, Savorra, Rocky Mountain and the WBA.

Wisconsin, of course, has been a leader in the development of bowhunting. It established the first special season in 1934. Its Wisconsin Bowhunter Association (WBA) is the largest in the country. The state ranks third in the number of bowhunters, an estimated 200,000. And one of the most unique organizations found in outdoor recreation began here — the Stump Sitters and their bimonthly magazine, "Deer and Deer Hunting."

Members of our research team talked to more than 300 Wisconsin bowhunters in the field after shooting hours. Two of the five major bowhunting regions of the state were covered — a 30 mile radius around both Black River Falls and Stevens Point. Home interviews with 100 of these fol-

lowed after the season. Bowhunters like to talk, and these sessions often lasted as long as three hours while men and women described their development as hunters, their attitudes and values and their hunting activities. Bowhunting experience ranged from the beginner in his first season, to one individual enjoying his 32nd. Finally, two hour group interviews were conducted with 20 bowhunting clubs located from Grantsburg in the northwest to Racine in the southeast; and from La Crosse in the southwest to Peshtigo in the northeast.

Bowhunters, 90% of whom also hunt deer with a gun, again and again described a close intimate relationship with nature. Eighty-three percent of those interviewed in the field were hunting alone. Most hunting is done from a tree stand or a blind waiting for the deer to come to the hunter. This preference for solitary hunting actually increases with years of experience and is in marked contrast to Wisconsin's waterfowl hunters who prefer to hunt with partners, and the state's deer-gun hunters who told researchers that their first choice is a group of three to nine including family members where possible.

It is generally agreed that in exemplary sport hunting the animal should exercise a normal behavior pattern appropriate to the season. It should be in its natural habitat and the hunter's skills must include an intimate knowledge of the quarry's daily and seasonal activities and of the area being hunted. Using this definition, the solitary bowhunter, not dependent on the presence and movements of others, comes closer than most deer-gun hunters to meeting the criteria.

A bowhunter who does not know deer and deer habits will not be successful. A key motivation for most of the bowhunters interviewed was that they were able to hunt without being hassled or affected by other hunters.

Again and again, bowhunters used the word "personal" to describe the unique nature of their sport. A staring match with a whitetail deer at 10 yards is indeed "personal." One friend who waited years for a crack at a big buck so panicked at the opportunity last season that his arrow fell off the rest, out of his fingers, and clattered harmlessly down from the tree stand and off the buck's antlers. It also happened to me last October. I dropped to my knees to hide behind some natural cover as a deer approached my ground blind. When what seemed like "hours" later the deer finally walked into a clearing a few yards in front of my blind, my 53 year old legs, arms and fingers were absolutely paralyzed...they just refused to work. End of opportunity! Then there was the Black River Falls hunter who, when a deer walked beneath his stand, lost his balance and fell right on top of the animal's back. That was real "personal."

Personal was also used by our research subjects when they described the unique relationship they developed with their bows. One individual described it as a "love affair." Another stated, "You have to know your bow better than you know yourself." The data backs this up. Both deer-bow and deer-gun hunters were asked to rate 22 different satisfactions on a scale of one to five. Gunhunters ranked shooting as 16th of the 22. The 100 bowhunters, in contrast, ranked it 4th and bow club members placed it first. Bowhunters emphasized the absolutely essential importance of matching equipment; then pointed out that casually selecting a bow and arrow at the local discount store is unwise and usually irresponsible.

"True bowhunting," hunters said, means "the bow is hand held, hand drawn and hand released!" Hunters are particularly challenged by the many aspects of shooting that are directly and subtly under the shooter's control. "It's very individual," a Neenah hunter claimed, "What you put into it you take away."

This dedication to developing marksmanship and competence extends to participation in year round programs on indoor and outdoor ranges as well as hunting during the season. The pursuit of excellence, however, doesn't always extend to teaching one's wife. One such spouse related to us that when she asked her husband to introduce her to archery, "Gordy just handed me a bow and said to go and shoot it!" That's a little like giving someone a guitar with no more instructions than "go play it." Regina Damp, mother of three, was described by fellow members of the Oconto Falls Club, as "one of the premier marksmen, male or female, in northeastern Wisconsin." Crivitz resident, Anne Fancher, all 110 pounds of her, took a 450 pound black bear during the 1982 Ontario spring season.

Another striking thing about bowhunters is the intensity of their commitment and interest in their sport. The average bowhunter reported more than 20 trips a season; a few were in the field more than 60 times in a season that ran over 80 days. This fact has motivated many a wife to take up bowhunting "or I wouldn't have seen my husband

Anne Fancher of Critivz, editor for the Wisconsin Bowhunters Association, shot this 450 pound black bear last year.

Bowhunter Gordon Bentley with a 10 point buck taken just across the Columbia County line in Marquette County. Bentley operates the Madison Archery Center.

from the middle of September to the first of January." When a local hunting club responded to the writer's questions about intensity, a quick tally indicated 27 divorces among a group of less than 40 men. One member allowed that there might be some relationship between bow hunting and marital status.

Comparison between bow and gun hunters' prehunting activities and activities associated with the taking of game clearly emphasize the bowhunter's intensity of commitment.

Percentage of Bowhunters and Gunhunters Typically Involved In Preseason and Seasonal Activities

Activity	Bowhunters	Gunhunters
Pre-Season		
Target and range practice	98.0	86.0
Scouting	83.0	71.1
Contacted landowner for permission	65.0	51.6
Built/used a tree stand	64.0	25.2
Member of sportsman club	23.0	21.7
Attended preseason deer hunting clinic or course	11.0	6.2
Season and Post-Season		
Field Dressed own deer	92.0	86.0
Consumed most of deer	90.0	80.5
Skinned own deer	76.0	68.2
Butchered own deer	62.0	58.3
Utilized hide of deer	45.0	32.8

A larger percentage of bowhunters than gunhunters practiced shooting at targets and on the range, scouted, contacted landowners for permission, belonged to a sportsman club and dressed, skinned and butchered their own deer. For many bowhunters, intensity and excitement grew higher each day of the season, peaking during the rut in early November. A Madison Blackhawk hunter said "I hunt for weeks before really getting ready to kill. I want to see every deer that runs that cover before I pick my buck and really start to hunt." In contrast, for many of us who hunt deer with a gun, everything peaks at about 9 a.m. on opening day; actually many hunters leave the woods for good by noon of the second day — with or without a deer. For them everything is downhill after the first few hours.

Our research also found different developmental patterns for bowhunters and deer-gun hunters. Half the firearm hunters said that their fathers initiated them to deer hunting. By comparison, only 16% of the bowhunters were started by their fathers. Fifty-two percent began bowhunting through peer group influence and judged that self-study and peer group direction were their strongest influence. Of course, this pattern may change; bowhunting is a relatively young sport with few older men participating. Twelve to 14-year-old sons and daughters still have trouble drawing a hunting bow and even more difficulty in sitting still for long hours on a stand. Real readiness for bowhunting may develop closer to 20 years of age than at 12.

One other developmental difference may be important. Many forms of hunting and fishing are taught by an apprenticeship system; a son or a friend learns the skills and strategies at the mentor's side. Would-be bowhunters rarely apprentice. They are much more likely to be put in the field on their own. Only rarely did bowhunters talk of someone who took them into the field to share the selection of a stand, the reading of signs or interpretation of hits. Strangely enough, club members who go all out to provide "hands-on" instruction for new members on the target range often draw a line and refuse to help on a real hunt. Frankly, I believe the challenges and requirements of bowhunting demand a competent and comprehensive introduction to the sport. It's time to develop more programs in Wisconsin where experienced bowhunters take beginners "into the woods" as well as "out on the range."

Bowhunting clubs in Wisconsin range over the entire state and many are affiliated with the 42 year old granddaddy of American bowhunting organizations, the Wisconsin Bowhunters Association. Individual differences in clubs abound! In the western half of the state most clubs focus on hunting, and uncharacteristically like to hunt in groups. They have an almost exclusive male membership and members relish and anticipate the rituals and traditions of group drives organized every Saturday and Sunday as the season moves into October and on through December. Eastern clubs, by contrast, are characterized by family membership and greater, if not primary, interest

Club Members vs. Nonmembers (percentages)

Categories	Members	Nonmembers
Target and other range practices	98.5	98.7
Used camouflage clothing	97.3	93.5
Used camouflage bow	90.0	87.0
Scouting (preseason)	90.0	39.2
Used buck scent or other odor controlling techniques	89.7	83.1
Read archery and bowhunting publications	82.4	74.0
Contacted landowner for hunting privileges	80.1	55.8
Built or used a portable tree stand	73.9	57.1
Used a hunting sight	66.7	61.0
Used a bow to hunt small game or rough fish	66.7	20.8
Used a self-made improvement (or modification of) equipment	67.4	23.4
Fletching and making arrows	60.5	24.7
Attended April fish and game meeting	51.3	5.2
Built or used a bowhunting blind	37.2	14.3
Attended a preseason deer hunting clinic or course (Stumpsitters, DNR, etc.	18.8	6.5
Used a game tracking aid	16.9	7.8

in indoor and outdoor archery range activities. There are exceptions like one Sheboygan area club whose members were a little disdainful of a neighboring organization "who were just paper shooters" (targets). The year's activities for a Fond du Lac club featured 15 different events beginning with a Valentine's Day Shoot and proceeding through archery golf, corn roasts, an annual banquet, work parties, summer league and a healthy number of summer picnics. Of course, these stop abruptly once mid-September rolls around. That's hunting time and first things first.

The club provides far more than social contacts to members. Right at the top of its list is education. Eighty percent of the members interviewed did some bowhunting before they joined the club. They joined to develop skills. And it works! Said one member, "Everytime we have a meeting I learn something. We help and correct but never embarrass each other." A club officer from Peshtigo testified to the effectiveness of that instruction by pointing out that range targets "used to be sprayed all over with arrow holes." These patterns contracted after a year or two to tight, heavily chewed-up circles.

Development of good marksmanship is an indispensable part of responsible hunting. As one Winnebago Archers member put it, "I'm not sure I really belonged out there the first 10 years." Equally impressive is the informal instruction club member's offer in retrieval of a "hit" animal (interpreting a blood trail and other skills). A Grantsburg bowhunter put it this way, "Hunting really starts after you hit a deer."

Almost all clubs have developed an effective support system for finding wounded deer including a "hot line" system with which the hunter can call for help at any time of the day or night. A River Valley (La Crosse) member pointed out that "Darned near the whole club will turn out to go after it if we need help." A number of interviewees stated that they found the challenge of retrieval more important and satisfying than any other aspect of bowhunting. In light of studies indicating that potential crippling loss is a major concern of nonhunters, this total commitment of bowhunters is a particularly important finding.

If bowhunters are to be described as intense, those belonging to clubs can only be described as more so. The two groups, bowhunters who are affiliated and those not belonging to clubs,

The end

CHAD MCGRATH, Marshfield

What do you say to a deer who has beaten you? I had spent a hundred hours standing, climbing, walking, sitting, waiting. There was only one shot, conceived at 25 yards, taken at 35. A clean miss and 30 minutes looking for the arrow.

Soon it will be over. Only a short time now until the last minute of the last day of the season. A lovely last hunt, with new snow falling and all the pearly grayness of such scenes. Walking to my car I notice new tracks crossing from the woods to the standing stalks. A brief sojourn to follow them as they cut across the rows tells me I've sent this deer bounding before me, unseen except for dents in the snow. My walk by the rows resumes and in a few seconds I have rounded a corner and am walking at the head of all those khaki and white soldiers. A glance down their ranks might let me see my friend, many long yards away. Nothing. Nothing. Nothing.

But wait! Across two rows, hard to see in the dim light. What else could it be? But so close! Only 20 corn stalks away, 30 at most. Downwind yet! We look at one another. I slowly nock an arrow out of habit, ignoring my tree stand still slung on my shoulder. He watches. As I raise my bow he disappears. Rows of corn close like a curtain and he is gone, without sound, without haste.

Knowing full well the outcome, I enter the corn and find his tracks. Mostly I need assure myself that what I see is not merely apparition. The big tracks only 10 yards into the rows assure me. I mutter something to myself out loud. He responds by rustling some corn as he moves away.

What do you say to this deer who has laughed at you? I wished him a warm winter.

Wisconsin bowhunters spend many hours practicing. Photo Courtesy Bear Archery

responded yes or no to a list of 16 different bowhunting activities and practices. The results for target practice, were almost identical — 99% participation. For every other item, club members indicated a higher level — camouflage, scouting, reading publications, use of sights, fletching of arrows and attending meetings and clinics. Club membership apparently adds significantly to the characteristic intensity of bowhunters.

It seems easy to predict that bowhunting is an up and coming sport. About 71% of its participants disclosed that their interest increased over the past few years compared to 47% for a comparable group of deer-gun hunters. Will there be growth and a continued carrying of the bowhunter gospel? About 91% of our sample tell us that "They would miss bowhunting more than most or all other interests" compared to 61% for deer-gun hunters. Will there be a broadened base of participation in archery and bowhunting? You bet! Because these sports are proving their capacity to attract wives, single women and families into the fold. I predict that the percentage of women who participate in bowhunting in the next 10 years will at least double and could quadruple if Wisconsin's men would really encourage it.

Part of my conviction stems from personal experience. Last season, this old bird hunter tried bowhunting just to do a better research job — and got hooked. Now my own hunting dreams in winter and early spring revolve around bowhunting. They have made me understand and empathize with Jim of the Madison Blackhawk Club who summed up his bowhunting world with these words, "If I'd have to quit, I'd die."

PETERSON'S LAWS

Last year during duck season, the editor received a set of "laws" from Attorney Richard E. Peterson of Weyauwega. Here is what was written:

- The shooting is always at the other end of the lake.
- Mallards always decoy to the other guy's set.
- Geese always fly low over the location of your last year's blind.
- Dead birds always dive.
- If you wait they never come back.
- Ducks always decoy while you are retrieving blocks.

Cartoons by Artist Virgil Beck, Box 66, Stevens Point, WI 54481

- Some idiot always spooks your birds.
- When ducks make their turn it is always away from you.

- On a low close shot your safety is always on.
- Boats always have to be bailed.
- Boat lights never work.
- The wind always starts up when picking up decoys.

I don't know about other places but these laws are always true on White Lake in Waupaca County.

Wisconsin NATURAL RESOURCES

HUNTER'S ALMANAC '83

By Cindi Gerber, DNR Information Assistant

New rules and laws for 1983

1. Tyvac carcass tags replace metal tags for deer licenses. **You must provide a string or fastener.** DNR estimates that at least 5% of the 1982 metal tags were defective.

2. Liquid used in baiting is defined as a substance, neither solid nor gaseous, that at 70° F flows freely and takes the shape of its container. Liquid scent means any liquid except honey. Bait includes honey and any solid material attractive to wildlife.

3. Ruffed grouse hunting opens on Sept. 17, two weeks earlier than last year. Research at the Sandhill Experimental Wildlife Area established that early season hunting mortality does not contribute directly to reduced breeding populations the following spring.

4. Quail, Hungarian partridge, jackrabbit and gun bear seasons are statewide. Quail and Hungarian partridge located in marginal habitat are the first to disappear in severe winters, resulting in lost recreational opportunity. Jackrabbit populations have improved only slightly in both closed and hunted areas, so hunting is not limiting the population. Gun bear hunting will start one week later than in 1982 to help reduce the harvest.

5. The sharp-tailed grouse season is closed in Marinette, Florence and Langlade counties pending a research and population evaluation.

6. When required to be cased, **firearms must be completely enclosed in a gun case.** No portion may be exposed. Because of recent changes legalizing certain handguns for deer hunting, the Legislature directed DNR to establish casing requirements to insure that all firearms are treated in a safe manner.

7. Coyotes may be hunted year-round, statewide. Previously, certain northern deer management units were closed to coyote hunting during the gun deer season to protect look alike endangered timber wolves. But now the wolf population has expanded to other areas and selectively closing the coyote hunt would be very complex. **Timber wolves, however, still are fully protected.**

8. Deer management unit 70B has been expanded southward to the county line. In the past, hunter's choice permits could not be used south of Highway 60 in Columbia County. This created a "buck only" deer season in the southern part of the county and increased the risk of crop damage as populations grew. Hunters now can do a more effective job of controlling the herd in this area.

9. The boundaries of deer management units 59C, 59D, 70, 70A, 71, 73, 74B and 75 have been changed. The 1983 deer management unit map in the hunting regulations folder shows the changes.

10. New furbearer seasons have been established to create more uniformity in the rules:

Fox: Hunting and trapping red and gray fox are now zoned with Highway 64 as the north-south boundary. **Bobcat** may be hunted north of Highway 64 only. Season limit is one and requires a permit. Apply for this permit by Oct. 7. **Raccoon** hunting and trapping by residents starts Oct. 15 and runs throughout Jan. 31. Nonresidents may hunt Oct. 29 through Jan. 31. Nonresidents cannot trap in Wisconsin. **Beaver and otter** trapping is also zoned with Highway 64 as the north-south boundary. **Beaver do not have to be registered** with DNR. The regular beaver/otter trapping seasons are:

North
Beaver: Dec. 3—Mar. 31
Otter: Dec. 3—Mar. 4

South
Beaver/Otter: Dec. 3—Mar. 4

Special beaver seasons will be in effect for certain areas. Consult the 1983 regulations pamphlet for details.

11. To avoid accidental trapping of raptors new bait rules prohibit certain materials within 25 feet of any trap. **Definition: Sight exposed bait** means any bait which can be seen from above the bait. During the open season, no person may use sight exposed bait consisting of feathers, animal flesh, fur hide or entrails within 25 feet of any trap.

Nongame tax checkoff: Return a gift to wildlife

Wisconsin has joined 27 other states in adopting a "Nongame Tax Checkoff" to finance an Endangered Resources Fund. **A line on the State income tax form will provide a way in which citizens can donate to Wisconsin's endangered and nongame wildlife.**

Unlike the political campaign checkoff, endangered resources donations either decrease the refund or increase taxes owed and therefore do not reduce state tax revenue.

The Wisconsin Trappers Association, Ducks Unlimited, the Conservation Congress and the Wisconsin Chapter of the Wildlife Society testified at public hearings in support of the nongame checkoff.

While donations will help relieve the nongame management burden now borne by sport license funds, a significant percentage of contributors are expected to be hunters, anglers and trappers. **The checkoff will also provide a means for others who enjoy wildlife to support wildlife programs.**

Wisconsin species the fund will benefit include pine martens, bald eagles, barn owls, loons, peregrine falcons and the eastern gray wolf. Projects are also likely on plants, urban wildlife, amphibians and fish.

The checkoff is completely voluntary and is deductible on the following year's tax form. **Look for "Endangered Resources Fund" on your State tax form and return a gift to wildlife.**

1983 permit deadlines

Apply on DNR forms, which can be obtained from agency offices, county clerks or license outlets.

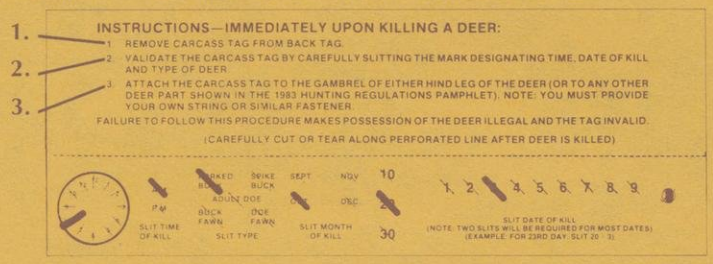
- Hunter's Choice Deer: Postmarked no later than Oct. 7, 1983.
- Canada goose Horicon Zone, Central Zone: Postmarked no later than Sept. 15.
- Canada goose Mississippi Valley Population (MVP) Zone: Applies to counties surrounding Horicon Zone. **Free** permit available about Sept. 10. No deadline.
- Turkey: Postmarked no later than Oct. 1.
- Sandhill Wildlife Area deer hunt: Postmarked no later than Oct. 7.
- Bobcat: Application must be postmarked by Oct. 7.
- Otter: Application postmarked by Oct. 21.
- Disabled: Permit to hunt or shoot from a standing automobile. Apply to your local warden at least 10 days before date of use.

Deer Hunting

New deer tag

After a three year successful tryout by bow hunters, the Tyvac tear resistant paper tag will replace metal tags this season in the deer gun hunt. Tyvac tags will save $7,000 and are also expected to be more dependable than the old metal tags. The Tyvac is bright yellow and much wider than the metal tag. **It comes attached at a perforated line to the back tag** which means there is one less piece to lose. It must remain there until a deer is bagged, and then, be immediately tied to the carcass. At that time also, **the hunter must slit the tag, to show the month, date, time of kill and type of deer.** This validation assures that the tag will be used only once. The tag is then tied to the deer's gambrel (hind hock). A piece of string or twine at least 20" long is needed to secure the tag properly. Hunters must provide their own string, twine or other fastener.

Example — you kill a 4 pt. buck 8:15 a.m. on Oct. 23:



4. Register deer at deer registration station.

Hunter's choice

A big deer herd has resulted in an all time high in either-sex hunting permits for Wisconsin this fall. Statewide, the herd is estimated at more than 850,000 animals, and therefore **166,500 hunters will have an opportunity to bag an either-sex deer in November. This is 40,000 more than in 1982.**

Mild winters, excellent habitat and conservative seasons in the past produced the population increases, especially in southern Wisconsin, but also in the central part of the state. Farm complaints about deer damage have been frequent this year.

Central Wisconsin carries the highest deer densities but there is much private, posted land there. Pre-season permission to hunt these lands is usually required. Public forests in Clark, Jackson, Juneau and Wood counties have good deer populations but tend to be crowded. In the north, on the other hand, hunter densities are usually low, public forest lands are prevalent and chances are better for trophy bucks.

Permits are not issued for all deer

Special hunts

Fort McCoy Military Reservation

Fort McCoy issues permits for gun deer (including muzzle-loader), bow deer and small game hunting.

Small game hunters must register to hunt in person on Saturdays, Sundays and holidays. Each day they also must call (608) 388-GAME for a recorded telephone message about areas that may be closed to hunting that day. In addition, civilian vehicles will be prohibited in hunting areas, except during gun deer and muzzle-loader seasons, because of training requirements.

McCoy has been taking mail-order applications for gun deer permits since Aug. 26 so the limited number of permits will probably be issued by the time you read this. Permits to hunt deer with bow and arrow or to hunt small game are sold over the counter in the Morale Support Activities Office, Building 1130, and through mail order. The office is open from 9 a.m. to 3 p.m. Tuesday through Saturday. Write for application forms to: Morale Support Activities Office, ATTN: Permit Sales, Building 1130, Fort McCoy, Sparta, WI 54656, or call (608) 388-DEER.

Bong State Recreation Area

Daily permit hunting began at Bong in 1981. The area features duck hunting from state-supplied blinds and hen-rooster pheasant hunting. Game farm pheasants are stocked frequently throughout the season. The number of hunters allowed at any one time is restricted, so reservations are advised. Apply on DNR forms. If all openings are not filled at the August 31 drawing, applications will continue to be accepted until all are filled. Write: DNR, Route 1, Box 141B, Kansasville, WI 53139.

Sandhill Experimental Wildlife Area

A one-day deer hunt takes place here one week before the statewide gun-deer season. The area is being managed to increase the number of large, full-antlered trophy bucks. Permit holders may take one deer of either sex, including antlered bucks. Permits are issued by advance reservation only. Applications must be postmarked no later than Oct. 7 and are available at most DNR offices. Daily permits for small game are also available at the Sandhill office near Babcock.

Muzzle-loader only deer hunt

Governor Dodge (Unit 70C), Blue Mound (70D) and Perrot (61A) State Parks are restricted to hunters carrying muzzle-loading rifles, and holding hunter's choice permits for those quota areas. Request hunter's choice permits for these units *only* if you intend to hunt with a muzzle-loader.

Violations

In 1982, the most frequent deer hunting violations were:

- loaded or uncased firearms in or on a vehicle
- hunting within 50 feet of a highway
- possession of an untagged deer.

One hundred or more people were arrested for each of these violations.

"Enclosed within a carrying case" means a firearm must be completely contained in a gun case expressly made for that purpose. The case must be fully closed by being zipped, snapped, buckled, tied or otherwise fastened, with no portion of the firearm exposed.

management units. A map showing the number assigned to each unit is available at DNR and county clerk offices and other license sales outlets. **Applications for permits must be postmarked no later than Oct. 7.**

Handguns

It is legal to use certain handguns again this season to take deer. Regulations concerning them are printed in full in the 1983 Wisconsin Hunting Regulations pamphlet, and read in part:

"It is illegal to hunt deer with handguns except those loaded with .357, .41 and .44 magnum caliber cartridges or any other caliber handgun chambered for commercially manufactured cartridges which produce a minimum muzzle energy of 1,000 footpounds. Such handguns shall have a minimum barrel length of 5½ inches measured from the muzzle to the firing pin with the action closed. Handguns used for deer hunting are restricted to areas open to rifle deer hunting. Hunters using such handguns may not possess any other firearm while hunting deer."

Antlerless-only experiment

To reduce crop damage and the deer herd but control hunting pressure, an experimental antlerless-only season will be held this fall in units 67, 70, 70A, 70B, 70E and 71. **A hunter who applies for and receives a hunter's choice permit in any of these units will be restricted to antlerless deer only in the unit for which the permit is issued.** Antlerless means does, bucks with no antlers or bucks with spikes less than three inches long. A successful applicant may hunt bucks or any legal deer in units other than that for which he or she holds an antlerless permit.

Unsuccessful applicants and those who do not apply for hunter's choice permits in these units can hunt for bucks as usual.

The antlerless deer is not an extra or bonus deer. Hunters must use the deer tag to validate and register their deer.

A hunter's choice application for any antlerless unit will be treated as a request for an antlerless permit. Hunters will have hunter's choice preference this year if they applied for and did not receive a permit last year, and next year if they apply for and do not receive a permit this year. Applications must be postmarked no later than Friday, Oct. 7.

The antlerless only deer season was recommended by the Conservation Congress.

Dates and outlook

Game species	1983 Dates and locations	Game supply*	Hunting prospects
Coyote	Statewide, all year	No change	Fair-good. Best in north.
Snowshoe Hare	Statewide, all year	Down	Good. Best in north.
Turkey	5 units — 3 hunting periods between April 19 and May 7, 1984	Improving	Best in southwest counties along Mississippi River.
Ducks	South: Noon Oct. 1-9; Oct. 15-Nov. 24 North: Noon Oct. 1-Nov. 19	No change	Fair-good. Best along Mississippi River and in east counties.
Canada Geese	Statewide, dates published about Sept. 15.	Down	Good. Best in east central portion of the state.
Woodcock	Statewide, Sept. 17—Nov. 20	No change	Good. Best in northern ⅓ of state.
Bear	Statewide: Bow: Sept. 17—Nov. 13 Gun: Sept. 17—Oct. 2	Down	Fair-good. Best in northern forests.
Gray and Fox Squirrel	Statewide, Sept. 17—Jan. 31	No change	Good. Best in southern ⅓ of state.
Jackrabbit	Statewide, Oct. 1—Oct. 31	No change	Poor. Not abundant in any region.
Cottontail Rabbit	North: Oct. 1—Feb. 28 South: Noon Oct. 29—Feb. 28	Up	Good. Best in southern ⅓ of state.
Ruffed Grouse	North: Sept. 17—Dec. 31 South: Sept. 17—Jan. 31	Down	Fair-poor. Best in western Wisconsin.
Sharp-tailed Grouse	North only, Oct. 15—Nov. 6	No change	Poor. Not abundant in any region.
Raccoon	Residents statewide, Oct. 15—Jan. 31 Nonresidents statewide, Oct. 29—Jan. 31.	No change	Good. Best in southwest and west central.
Bobwhite Quail	Statewide, noon Oct. 29—Dec. 11	Improving	Fair. Best north of Wisconsin River in southwest Wisconsin.
Pheasant	Statewide, noon Oct. 29—Dec. 11	No change	Poor-fair. Best in southeast ¼ of the state.
Hungarian partridge	Statewide, noon Oct. 29—Dec. 11	No change	Fair. Best in counties near Lake Winnebago and Lake Michigan.
Red and Gray Fox	North of Hwy. 64: Oct. 15—Jan. 31 South of Hwy. 64: Oct. 29—Jan. 31	No change	Fair-good. Best in west central and southern Wisconsin.
Bobcat	North of Hwy. 64: Oct. 15—Dec. 31	No change	Poor. Not abundant in any region.
Deer	Gun: General Nov. 19—Nov. 27 Bow: Statewide Sept. 17—Nov. 13 Dec. 3—Dec. 31	Up	Excellent. Most deer in central Wisconsin, trophy opportunities in north.

*Compared to 1982.

Geese

This year Wisconsin received a 15,000 Canada goose quota from the US Fish and Wildlife Service (FWS) to be taken from an expanded Horicon-Central tag zone. **Wisconsin should harvest approximately 25,000 Mississippi Valley Population (MVP) geese in the 42 counties of the state east of the MVP line which includes the 15,000 tag zone.**

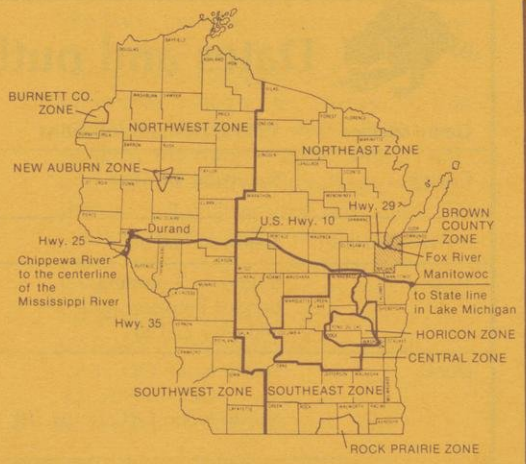
The MVP flock, one of 12 nationwide, nests in the Hudson Bay vicinity and migrates to the confluence of the Ohio and Mississippi rivers. The MVP line in Wisconsin is a north-south line which follows county lines beginning in the north between Iron and Vilas counties and ending in the south between Lafayette and Green counties.

The expanded tag zone will include six counties around the Horicon Zone — Dodge, Columbia, Marquette, Green Lake, Winnebago and Fond du Lac — and the Horicon Zone, which will include Theresa Marsh Wildlife Area in Washington County.

Seasons within the 42 eastern counties outside the tag zones will follow the new duck zone line using Highway 10 as the north-south boundary and are: North, noon Oct. 1 through Oct. 20; South, Oct. 15 through Nov. 8.

In the 30 counties west of the MVP line, a 50-day goose hunting season will coincide with the zoned duck season.

Consult the Waterfowl Regulations pamphlet for bag limits in the various zones.

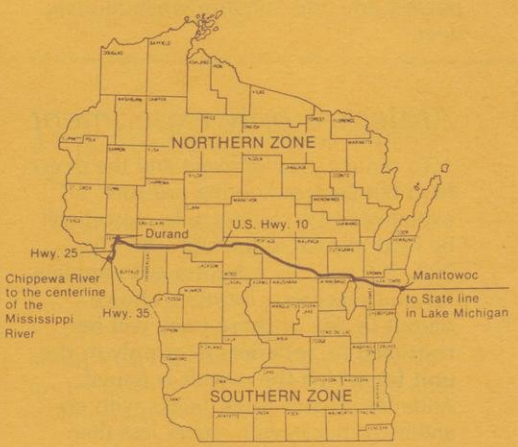


Ducks

A new zoned duck hunt will permit a continuous season in northern counties with more hunting opportunity prior to freeze up and the option of a split season in southern counties which will have a later closing.

Moving westward from Lake Michigan, the north-south boundary includes Highway 10 from Manitowoc to Durand, Highway 25 south to Highway 35, Highway 35 east to the Chippewa River, and the Chippewa south to the Mississippi.

North of this boundary, the duck season opens noon Oct. 1 and runs through Nov. 19. A split season in the southern half of the state will run from noon Oct. 1 through Oct. 9 and again from Oct. 15 through Nov. 24. For more details, consult the 1983 migratory bird regulations pamphlet.



Pheasant hunt changes proposed for 1984

Revisions in pheasant hunting rules contemplated for next year include the following:

- **A statewide season opening one week earlier (in 1984, Oct. 20).** This would provide five full weekends of hunting before deer season, eliminate conflicts with other openings, harvest natural birds before losses occur and save money by releasing pen-reared pheasants earlier.
- **A one-bird daily bag (possession limit two) for the first 14 days** of the season to give more hunters a better chance to take birds.
- **Close hunting at 2 p.m. daily on 18 public hunting grounds.** DNR would release pheasants twice each week during this period. The 2 p.m. closing would give stocked birds more time to adapt to the release site before being hunted.
- **Allow hen pheasant stocking and hunting on 10 state properties.** Most hen chicks hatched by DNR are currently either sold to game farms and shooting preserves or destroyed. Very few stocked game farm hens survive the winter to produce roosters for the next fall's hunt. The properties selected for hen shooting will have relatively low native populations. Permits to shoot hens would be free, but both hens and roosters would have to be tagged. Each hunter would be eligible to receive up to 10 tags upon application to DNR.

Pheasants: new facilities

New modern pheasant-rearing buildings went into operation at the state game farm at Poynette this year in time to produce almost 300,000 chicks. **Two of the new buildings house 9,000 breeders, and the four new chick rearing units can brood nearly 70,000 baby birds.** Birds are transferred to outside range fields at seven weeks of age. Some 45,000 roosters were reared for stocking on about 100 Wisconsin public hunting grounds.

In addition, each year 90,000 day-old pheasant chicks are distributed to 120 cooperating sportsmen's clubs and Future Farmers of America classes. These chicks are reared and released in 40 counties to supplement wild pheasant populations which have been declining because of intensified crop production on farms and other major changes in land use. Birds from the state game farm now provide more than one-third of the pheasant hunting opportunities enjoyed by more than 180,000 Wisconsin hunters.

Stop The Poacher

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1-800-362-3020
24 Hour — Strictly Confidential

Wisconsin fishing: The historical angle

Today's commercial fishing gear is based on ancient equipment used long ago by Native Americans. But sport fishing gear is relatively newfangled, not far in time from the wooden spool reel and tree limb pole.

BETTY LES, DNR Fish Management Analyst

Wisconsin's first anglers were Native Americans. If you had lived among them in the early 1600s, whether you were Potawatomi, Chippewa, Fox, Sauk or Winnebago, fishing would have been a big part of your life. Together with game, wild rice and maple syrup, fish would have been a diet staple, perhaps your most dependable food. People today feel lucky if they can spend a few hours a week fishing, but in 1600, fishing could be a full time occupation. It was serious business, since survival depended on it. Seasonal camps were set up near favorable fishing spots, and the answer to the question "where is fishing good?" sometimes determined the location of entire villages.

While Indians first fished with spears, by 1600 they were using hook and line, seines, hoop nets, gill nets and weirs. Hooks were made of bone or copper and Indians used them with pride, for they were finely worked. Line was made of hair, deer and moose sinew, twisted plant fibers and pine roots. Basswood fiber was the favorite. Stripping the inner bark of young sprouts, Indians boiled the fibers with wood ashes for softening, then twisted the shreds into twine for fishing.

The same natural materials used for lines were woven into tough nets. Floats were whittled out of cedar and smooth stones used to weight the nets, usually notched to make them easier to tie on. There were long nets or seines for working lakeshores and streams, scoop nets and hoop nets for gathering fish concentrated below stone dams or funneled into a small area by weirs, and gill nets for deep-water fishing.

When Wisconsin Indians made the first gill nets, they were a breakthrough, allowing them to fish deep, offshore waters. These nets were fished out of canoes in large inland lakes as well as the Great Lakes. Although high seas came up just as suddenly then as they do today, Indians used the nets eagerly, knowing the good catches they brought in fall before the long winter.

In winter Indians fished through the ice with spears, often using a pearly shell as a decoy to lure fish within striking range.

Spearing by torchlight was a primitive Indian fishing method, but actually Native Americans used sophisticated gear that has been copied by today's commercial operators. State Historical Society photo

Fish supplies were so abundant compared to the number of people, there was no need to limit or regulate the catch. The best time to fish was when the fish were easiest to take. Spawning runs and other fish concentrations were heavily exploited. Torches were used to help spear fish at night. Knowing where and when fish spawned was vital, and the ways of the lake sturgeon, sucker, whitefish and trout were familiar lore. Indians preserved their catch by freezing, smoking or drying. What they didn't eat, they used to fertilize corn or render for oil. Favorite dishes might be wild rice, corn and fish, boiled together, or roe cakes made from sturgeon eggs.

The year 1634 brought the first European explorers to Wisconsin and by 1700 exploration was intense. A lucrative fur trade was established and the French and British vied for its control. Fishermen at fur trading posts on Lake Superior caught trout and whitefish then salted and shipped them to outlying posts. Fish were also an important food source to the scattered villages of frontier Wisconsin. Accounts of huge, strange fish fill the diaries of explorers and settlers. Wisconsin Indians, meanwhile, continued their centuries-old fishing patterns, incorporating iron hooks and harpoons from the fur trade into their gear.

Territorial status and statehood in the 1800s brought a wave of settlers to Wisconsin, including native-born "Yankees," Canadians and European immigrants. The land was plowed, timbered and crisscrossed by railroads. Subsistence fishing by remaining Indian groups continued and large-scale commercial fishing by new settlers began. The new phenomenon of fishing for pleasure, or sport fishing emerged into a major pastime.

In the early days, sport fishing gear was a sapling, a piece of twine and a hook from the local hardware store. Later came store-bought poles made of cane or shaved hickory or elm. Lines were held by hand or wound around a discarded spool from the family sewing basket. In fact, the first manufactured reels were called spools, and the term lingers today. The difficulty of travelling very far in a buggy or wagon confined fishing to local spots, but this was no handicap in Wisconsin where good fishing was always nearby.

In the latter half of the 19th century, great strides were made in fishing gear and travel. The golden age of fishing began. Hardware stores carried a full line of tackle, or you could mail-order "fancy" gear from eastern stores. Catalogs from John Krider of Philadelphia; Dame, Stoddard and Kendall of Boston; Thomas Chubb of Post Mills, Vermont; Charles Orvis of Manchester, Vermont and William Mills and Sons of New York brought the latest in lines, reels and rods to the angler's doorstep. For $10 you could buy a pillared brass reel and for $4 a split bamboo rod.

Experimentation and fine craftsmanship produced precision click and multiplying reels with ball bearings and silver mountings. The Milwaukee level wind mechanism was patented and incorporated into better reels. Lancewood, greenheart and bethabarra — woods never even heard of today — were used for rods alongside hickory, elm, ash and bamboo. The technology of splitting wood or bamboo into strips and gluing them together, was well developed. The number of strips varied but six was most common. Rods generally ran long, 10 to 16 feet for fly rods and 7-1/2 to nine feet for bait or bass rods. The different types of rods, ferrules, windings and reel seats were hotly debated issues, with each variation staunchly defended by designers and hyped with testimonials from users.

Lines were less of a question. Although cotton and linen were used, the resilient thread of the silk worm ruled the day. Twisted or braided, boiled or raw, enamelled (water-proofed) or not, tapered or straight, silk lines graced fishing rods throughout the country, from the plainest to the most expensive. All the lines had one thing in common: they rotted easily. So, the end of every fishing trip found anglers unwinding and drying their lines, or on the next trip they wished they had.

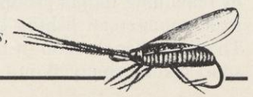
Trains greatly increased the fishing area. At least five major rail lines serviced Wisconsin, with many stops made along the way. At 3¢ a mile, fares were affordable, but not cheap. Wagons met anglers at the station and took them to lodgings where boats, oarsmen and guides were available for hire. Tourism was already big business in Wisconsin, and fishing was a summer drawing card to resorts throughout the state. Fishing tackle easily accommodated travel of the day. Collapsible landing nets, jointed trunk rods, even folding boats and oars were available, the latter designed precisely to meet train baggage room requirements. If you were going all the way north to Lake Superior, you might opt for steamship travel. Great Lake routes catered to northern tourist and fishing resorts.

The "wolf of the water," the muskellunge, was a prime target in northern Wisconsin, but pike, walleye, perch, "black" bass and "speckled" trout also had a large following. By the end of the century, brown trout, rainbows and carp were introduced. In newly-exploited waters, catches were astounding both in size and number but such catches were short-lived. The fantastically abundant fish life known to Native Americans and early settlers was greatly reduced by the end of the century.

While fish meant sport to some Wisconsinites, they meant jobs to others. Enterprising newcomers recognized the tremendous food resources of the Great Lakes and set about using them for profit. Swedish, Norwegian, Polish and Finnish immigrants took naturally to fishing and many brought this skill from the old country. Others simply learned by doing, educated by the lakes. Since it is labor-intensive, fishing was a family affair. Father-son and brother-brother partnerships were common, with relatives for hired help. Today, Smith Brothers, Johnson Brothers and others continue this tradition.

Six miles further and we come to **EAGLE RIVER STATION,** a town of considerable expectations. It is a very desirable location for sportsmen, being situated on the Eagle River and in the midst of a magnificent chain of lakes known as the **EAGLE WATERS.** There are twenty-six lakes, large and small, included in the Eagle series; some are extremely beautiful, while all are literally alive with bass, pike, pickerel, perch and muskalonge. The latter is said to excel all previous records elsewhere. However that may be, we know they are extraordinarily plentiful and of the finest flavor. Sportsmen will find the best of accommodation at Eagle River, and can engage from Messrs. Perry & Lawler, Indian guides, boats, etc., for tours either through the Eagle Waters or for more distant points. Both of these gentlemen are personally acquainted with every stream and lake in this section of the State.

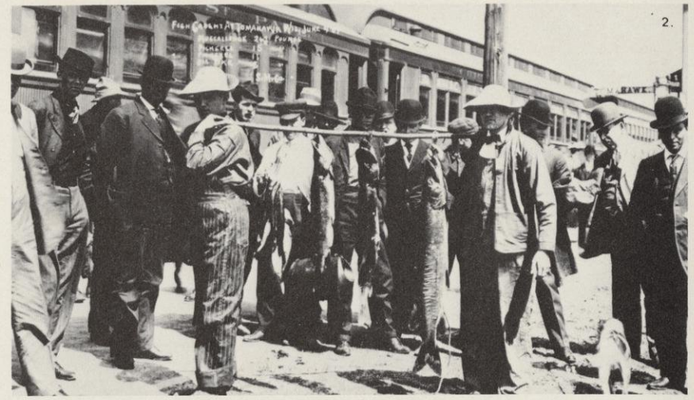
From: *The Sportsman's Guide to the Northern Lakes,* by George Francis Thomas, 1885.



The Cornucopia commercial fishing fleet in the early 1900s. State Historical Society photo

Haul seines were the first gear and nearshore whitefish the catch. Pound nets and gill nets were soon added and the catch expanded to include lake trout, herring, sturgeon, yellow perch and chubs. Salted and stored in barrels, smoked or shipped fresh, Wisconsin fish reached Chicago and New York markets. Sailboats, especially the *Mackinaw,* plied the lakes in the early years, but steam tugs replaced them by the late 1800s. Steam pile drivers and winches made the hard life a little easier, but the daily rhythms of fishing remained the same — up before daybreak to steam toward the nets at first light. Harvesting the catch went on until early afternoon then back to port, cleaning fish along the way. By mid-afternoon the catch was ready for market, but the work of cleaning and drying nets still remained. This finally done, commercial fishermen then set about preparing equipment for the next day's run.

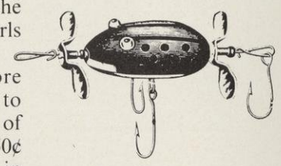
The early years were glory years. Fish in the Great Lakes seemed endlessly abundant, and the growing population provided a ready market. Fishing camps and shanties dotted the Wisconsin shoreline. Algoma, Two Rivers, Cornucopia and other fishing towns were founded. But as early as 1870, there was trouble. Catches declined. New fishing grounds had to be found or different species caught to keep business going. Only more nets and longer hours at work kept the catch high through the end of the 1800s.



1. At the turn of the century fishing was sometimes a dress-up affair. This equipment is makeshift but fancy gear was already available. State Historical Society Photo

2. Guides and the fish they helped catch were displayed at railroad stations by resorts hoping to lure customers. This picture was taken at Tomahawk in June of 1909. State Historical Society photo

The Mississippi River presented the same opportunities for jobs and food, and it, too, was eagerly fished. Gear was similar to the Great Lakes but small sailboats, row boats or houseboats were used with one person fishing alone or with a single helper. Catfish, drum and buffalo were the big catch but suckers, paddlefish, sturgeon, walleye and eel were also important. Most were shipped fresh by riverboat to major cities, often with much spoilage until refrigeration became available at the end of the century. Mussel fishing to supply the pearl button industry began in 1889, luring many a city-dweller or farmer to the river to make their fortune. Although a comfortable living was made by many for a time, the fortunes went to those lucky enough to find pearls inside their catch.



In the 1900s, fishing tackle became more affordable and its manufacture moved closer to home. Sears Roebuck and Montgomery Ward of Chicago produced the $1 fishing rod and the 50¢ reel, and the Weber Company opened its doors in Wisconsin, offering a fine line of gear. Bamboo, wood and steel dominated rod materials through the 1940s when the revolutionary age of synthetics began. Strong yet supple, durable and cheap, fiberglass made an ideal rod material, although, bamboo remained a prized material for trout fishing and still is. Rod size shrank to seven to eight feet for most fishing, and reels were lightened by aluminum and plastic. Bait casting and fly reels diverged with bait reels retaining the squat, cylindrical shape and fly reels becoming flat and narrow. Dry fly fishing gained a following among trout anglers, and fly tying equipment became available to home tiers. Fishing stockings were renamed hipboots and wading pants became waders as anglers moved onto the streambed to fish. The silkworm was left to another destiny when nylon replaced silk fishing lines.

Through the 1930s, trains still transported most fishing tourists to Wisconsin resorts with schedules designed to accommodate overnight trips. Boarding in Chicago at 7:00 Friday night, you could arrive in the northwoods early Saturday, passing the night comfortably in a sleeping

Cover of an old fishing catalog.

car. Sunday afternoon trains got you home for work on Monday morning. Excursion trains and trolleys whisked Milwaukee residents to nearby lakes to fish. For the adventurous, motor car camping was popular. Duck tents, wool sleeping bags, rubber bath tubs and campfire cooking gear outfitted the camper. There were tent garages to protect the car and ingenious toilet tents to provide all the privacy of home.

After 1940, highways replaced the railroad. Existing roads were improved and new ones built, while personal ownership of cars skyrocketed. As postwar prosperity put spending money into the pockets of working people, boats were hitched to cars and boat liveries formerly so common on Wisconsin lakes became rare.

The prolific but vulnerable brook trout fishery declined by the early 1900s and carp were cast as villains for muddying water and hurting game fish. While inland fishing remained about the same otherwise, there were more people fishing which meant trophy fish became fewer and stringers lost some of their sag. However, Wisconsin remained a regional focal point for fishing, and waters like the Brule and Wolf rivers commanded national fame.

On the Great Lakes, tremendous changes occurred in the 1900s. Sea lampreys destroyed the native lake trout fishery, and the alewife took over from the yellow perch to leave little for sport anglers. But in the late 1960s, stocking of salmon and trout combined with sea lamprey control to make big changes. Today the sport fishery has revived and attracts millions of anglers each year. But for commercial operators, the dramatic changes in the Great Lakes were devastating. The lake trout fishery was gone, whitefish and perch catches declined, and the only chub being harvested was a former nuisance species. Making the best of a bad situation, commercial operators turned to smelt and alewives and now harvest them alongside traditional species. The 1960s brought improvement and stability to commercial fishing but the number who can safely participate remains low.

On both inland and Great Lake waters, Wisconsin Indians have asserted their fishing rights on areas they ceded to the US Government a century ago, reclaiming a portion of their original way of life. The nature and extent of future Indian fishing will be more defined in this decade through the courts and through negotiation. It is certain, however, that Native Americans will be part of the fishing picture in Wisconsin both now and in the future.

Technological advances have changed both the sport and commercial fishery. For sport anglers, fish locators, depth-temperature probes, lake contour maps, computerized fishing tips and information on fish behavior take a lot of the guesswork out of fishing. For commercial fishing, the advances mean sonar, powerful boats, radar and a worldwide market. There are better nylon and monofilament nets, which have reduced the laborious drying and repairing time. The industry is intensely managed and so are the fish. Although operations are a far cry from their free-wheeling beginnings and not always comfortable they work and hopefully will improve.

Today sport anglers believe that clean water, fish numbers and size are important. But they realize nothing is sure. Given the large number of people fishing and the competing uses for waters and shorelands, sport anglers are uncertain about the future. Maybe their fishing won't be the same, but they're hoping it will be good. And it should be.

HOTEL ACCOMMODATIONS, which as a rule are first-class, costs the traveler usually $2 per day; occasionally at the more popular Summer Resorts the rates are $2.50 to $3.00, but seldom higher, except for extra rooms, etc.

PRIVATE FAMILIES in the larger towns often take summer boarders, and charge from $5 to $12 per week.

SMALL BOATS are to let, at nearly all places of resort, and range from 50 cents to $1.00 per day the higher price as you go northward.

GUIDES, OARSMEN AND COOKS, serve at from $2 to $3 per day, and found.

From: *The Sportsman's Guide to the Northern Lakes,*
by George Francis Thomas, 1885.

The Readers Write...

My son recently gave me his '82 *Wisconsin Natural Resources* magazines. I enjoyed them all, but the supplement on endangered flowers in the July-August issue was special to me. It brought back many memories from almost 80 years ago when my mother took me for walks in the woods and cutover land on our farm in northern Outagamie County. She taught me names of flowers and plants (some old fashioned names), and it was good to see them again. Thank you.

NOLA F. SPOEHR (age 84), Spooner

"Wisconsin's Endangered Flora" is still available to order. Send $2.95, check or money order to Department of Natural Resources, Box 7921, Madison, WI 53707.

A pair of western grebes, *Aechmophorus occidentalis* has been inhabiting a small lake in Polk County. Although it's a common bird in the western United States, it is very rarely seen here.

I appreciate that without the DNR's conservation efforts our quality of life and wildlife would certainly be diminished. Please keep up the vigil, despite all the unjust criticism.

PETER SOCKNESS, Milltown

On behalf of the County Solid Waste Commission and Columbia County, I wish to express our appreciation for your special feature article about the Columbia County Recycling Center. Since then, representatives from more than half of Wisconsin's counties have toured our center and attended information meetings about recycling. Environmental groups have made us a regular field trip for their workshops, and we've heard from states as far away as Washington.

In six months this year, the Columbia County Solid Waste Program has saved $30,000 in landfill operational costs by recycling. More recyclables are being collected, and the market for them is improving.

INGEBORG LOTHE, Poynette

Some of the phrases used in your story about Project ELF distort the real picture. ELF as a "massive military communications system?" The transmitter site covers just over two acres in the middle of the forest. The antenna lines, seven miles in each direction from the site, are frequently mistaken for common power lines that spread out through much of Wisconsin. "Widespread opposition?" Sen. Proxmire's 1981 poll indicated more than 60% of the people in the counties affected support the project.

Many people have had a thorough tour of the place and have gone away wondering what all the fuss is about. To set up a visit, contact Project ELF, P.O. Box 46, Clam Lake, WI 54517. This is a very important national defense issue. As a submarine veteran and as a concerned citizen, I beg you not to treat it lightly.

KIMBERLY WALLIN, Grand View

The governor and the Natural Resources Board are on record as opposing ELF because of its detrimental environmental affects.

I have seen the desecration of our roadsides — the cutting and spraying and destroying of our wild flowers, shrubs and habitats of our birds and small creatures.

I have loved these wild flowers as each season, in turn, made its contribution. But each year there are fewer and fewer, with some even having become extinct at least along a certain, favorite roadside of mine. A few years ago there were several wild coreopsis plants blooming, but no more. There were always a few wood lilies, but no more.

Wild cherry trees have been cut, along with small pine trees, but why? Can they possibly be a hazard to motorists? Just last week I noticed where in the woods high above a steep bank on two different roads, small birch trees had been cut and then let lie. They couldn't possibly be a hazard to anyone, but only make washing from heavy rains more likely and possible, not to mention the sad eye-sore they create.

On another road (county) which I have enjoyed over the years have been Wisconsin laurel bushes, Jacob's ladder in profusion, carrion vines, wild roses, and, later in the fall, rose hips — but no more — just sheer cutting back to fence lines.

When brush and young trees are sprayed, and turn brown and die, why are they left standing and when brush is cut along fence lines, why is it piled and left in unsightly heaps?

With our inter-state highways built for utilitarian purposes and practical reasons, (and rightly so), many folks like to take to side roads for interest, beauty and nostalgia during the various seasons. Seldom do they find what they seek anymore.

Roadside beauty is a worthy goal, and we should strive for that, along with practical objectives.

LAURA A. VENNES, Boyceville, Dunn County

If you can print the cost of licenses for sportsmen, why not the costs of commercial licenses for set line, gill net or seining?

GLEN D. KIDD, La Crosse

Set line, gill net or seining licenses are available only to Wisconsin residents. Their use is strictly regulated by DNR. The fee for each license is: set line — $10.50 plus 25¢ per tag; gill net — $10.00 for the first 2,000 lineal feet, $1.00 for each additional 100 lineal feet; seine — $20.00 for first 500 lineal feet, $10.00 for second 500 lineal feet, $2.00 for each additional 100 lineal feet.

I suggest more diversity in your publication. I have absolutely no interest in fishing, the only topic of a recent issue. I am greatly interested in conservation, wildflowers, animals, birds, etc. By including articles in these areas, you would provide something of interest for everyone. I am sure there are people who found the fish issue most interesting, but for me there was nothing. It was just for the trash collection.

HERBERT H. HADOW, Milton

As a musky guide in Ashland County, I am in contact with many people who think your issue on fish management was really good — educational to say the least. Keep up the fine work.

"MUSKIE" FRED JELICH, Milwaukee

The Readers Write...

This "60ish grandmother of eight" was totally enthralled with the HAVENWOODS article in the March-April issue. It takes a special talent to capture the vision of hundreds of eyes that were saddened by the desolate appearance of the land, but never once gave up the dream to keep it in the public domain and that's exactly what your article did.

The greatest satisfaction is knowing that we were able to pass onto Milwaukee's children and grandchildren a part of their heritage that could have been lost forever.

I wish I could say the same about the 40 acre Army wildlife refuge but efforts to save it are not going so well. A letter writing campaign is underway and support letters can be sent to Senator William Proxmire, Dirkson Senate Building, Washington D.C. 20510.

The fragile ecosystems of the beach/maple forest and the Lincoln Creek environs are of significant historical and ecological value to Milwaukee and its people and a deluge of letters in support of honoring the 1973 agreement that established the refuge just might make the difference between saving it or losing it.

CARI BACKES, Milwaukee

In checking percent increases for some basic fees to Wisconsin residents vs. nonresidents, I noted that resident fee increases varied from 28 to 50%, but nonresident fee increases varied 10 to 26%.

By projecting some of these fee increase percentages, I found that 33 years from now the resident small game license fee will be about that for the nonresident deer license fee. How many more Wisconsin youngsters will be denied a chance to hunt and enjoy the outdoors, while we cater to nonresidents?

It would seem fair to me if all fees were increased the same percentage.

FRANK WYWIALOWSKI, Beloit

Articles like "Wisconsin Rockhenge" and the one on Aztalan a while back provide a balance to current issue features. I encourage you to continue writing articles on natural and human history, archeology and the old ways.

JIM TRUMPY, Madison

The wood duck population of Wisconsin and elsewhere has been declining rapidly since World War II, partly because of the lack of suitable nesting habitat. Wood ducks like to nest in hollow tree trunks well above the ground and not too far from water.

Last year, the Silver Lake Sportsmen's Club constructed two batches of plastic pail houses. Construction materials were donated, and many people worked for free to help some wild ducks. A follow-up survey showed a high occupancy rate by nesting wood ducks. This is another story that shows hunting and hunters are beneficial to wildlife.

HOWIE KOUBENEC, Silver Lake

In his article, "A Clearcut Explanation," the author states, "Mature forests provide poor food and cover for wildlife. In fact they are often called biological deserts." It might be more correct to call them game deserts. What about the countless species of songbirds, raptors, mammals, invertebrates, plant life and soil organisms which are unique to mature forests? Old forests probably support as much or more animal life than young ones, but there may be a higher proportion of species in the high foliage canopy or in the soil. Clear-cutting is a valuable management tool in the hands of thoughtful, ecologically aware managers. It quickly becomes cancerous when used with the concept of replacing a biological desert with a sportsmen's paradise of rabbits, grouse and deer.

ROBERT B. STREETER, Stevens Point

As a Milwaukee area native, I was pleased and proud to read about Havenwoods. It just shows you what caring, energetic people like Cari Backes can accomplish.

ROB LUNDGREN, Nampa, ID

September-October 1983 Volume 7, Number 5

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Second-class postage paid at Madison, Wisconsin.

The creek at Buena Vista Marsh. Drawing by Artist Jim McEvoy, 5227 Harbor Court, Madison, WI 53705

Ancient home of reptiles, birds, fish, grass and flowers, the marsh is really a mirror of humanity.

Buena Vista Marsh

JUSTIN ISHERWOOD, Farmer, Rt. 1, Plover

At equinox, the sun sets down the centerline, which bears some testimony to the road's accuracy. A quarter mile west this surfaced road intersects a gravel one, headed south. Half a mile down, the gravel road dips unexpectedly and the land sighs a full six feet from level. Earth there changes color from a golden silica sand to a gray and experienced looking ground. The dip in the road and the old color define for all practical purposes the mood and mold of the Buena Vista Marsh.

Another quarter mile and the road leads to a single lane bridge with painted yellow rails crossing Buena Vista Creek. The bridge, courtesy of the Civilian Conservation Corps 40 years previous, is in the shade of a prosperous group of popple that the wind unnerves. The stone bridgehead and the bridgerails are the responsibility of the township of Plover. The well-painted bridge testifies to the legitimate need for different tasks, shaded tasks, by the town roadcrew. That the bridge gets its yearly paint job on the misty Monday morning following the opening of trout season is probably sheer coincidence.

Marshes have been part of Wisconsin for 100, perhaps 500 million years. Their previous existence is scribbled into the stones. Limestone diaries gossip of tree ferns, leather birds and lizards of nightmare proportions. We might suspect it was the marsh whose cautious experiments among cattails and stagnant green water, first spilled the legacy of life itself onto dry ground. It was a marsh that spawned breath as a burp of ammonia chemistries, and speculated on the first flower and in turn the first death.

Mankind as a whole has not been extravagant in affection for marshes. Marshes were held to be an evil kind of earth, sulfurous smelling, giving only reluctant passage to foot and road. And history is aligned against the marsh. In Goethe's morality story, Faust sold his soul to a certain high bidder and escaped his preheated destiny by

reneging on the contract; saving his immortal conclusion by draining a marsh. History may well have been gentler with the marsh had that writer sent his chief character to blazes. In our language, marsh is a negative word, sharing with the night and winter a bias of humanity. The marsh is the viscera of the land, the quaking bog guts a life, an ingredient muck we do not wish to see of our land or in ourselves.

For reasons of history and our own psychological deeps, the marsh is controversial. Chief reason is the recent discovery of the function the marsh plays in the life of healthy landedness. At odds with this new sense of place is the old idea of marsh as waste ground, of little good or service to individuals or community.

The Buena Vista Marsh has been a partner to people ever since they ambled into these parts. Proof is found in the sand knolls above the creek's floodplain. Almost every neighborhood child has lost whole afternoons (originally designed to hoe the volunteer corn from the potato patch) searching these knolls for the traces of other times and other lives. Every old farmhouse has a cigar box or baking powder can of the Buena Vista's booty; arrowheads, spear points, scraping stones and flaked bits of chert and flint. From the distribution and amount of ammunition left behind, the marsh has long been part of the lives in the township.

White settlement of the region in the 1860s was for the most part on the river banks and sandy-loam high ground. The marsh was not thought farmable and wandering bands of Menominee, Winnebago and Chippewa were able to coexist with the early farmers. The Indians made baskets and swapped them for chickens and salt, and traded blueberries and cranberries in birch boxes for blankets. But as the white population increased, some wanted the Indians out.

Buena Vista Marsh was then called Big Meadow and was still in government parcels. Local farmers considered the marsh common property and cut the marsh hay for their cattle and horses. The marsh became privately owned, so goes the popular story, when government agents found that the farmers had been cutting tamarack and selling the bark to the tanneries.

The first ditches were dug by steam dredge in 1909 and again 10 years later. The thought was, if the marsh could raise such a headhigh crop of horsegrass and mosquitoes, it could, if tamed a bit, raise enough oats to satiate granaries — and clover, timothy and bromegrass enough to fill haymows. As land, the marsh was good insurance. Most near farmers had a couple forties. If summer proved too dry on the highland for oats, odds were the marsh field would be just right. If rains came often enough for highland oats the marsh oats were the worse for it. This same equilibrium worked for corn and hay. The marsh salvaged a good many years and a fair portion of the farmers.

As farming changed, the land was expected to do likewise. When vegetable cropping took over from dairy cows the land kept pace. Surrounding sandlands were quickly engineered to fit vegetable production and circle irrigation systems. The Buena Vista Marsh was left like the hole in the doughnut.

As surrounding land values rose and reflected the increase in productivity, it was inevitable that a question would be asked of the marsh. Marsh land, as land goes, is cheap land. If you are a farmer and want to expand, you can buy a lot more on Buena Vista with your money than elsewhere. Once you've got the land, you've got to do your darndest to insure your own wisdom, that means lower the water table so planting equipment can get out there in spring and so self-propelled irrigation systems can keep their feet dry and operate. Farmers don't often believe in irony. Vegetable crops require heavy capital investment, which is a dimension of business that tends to take the kindness out of some farmers, making them tight-lipped and grim.

The problem with the Buena Vista and most other marshes is that they are not just damp ground. They are a different ground entirely. After the glacial retreat, the Buena Vista existed as a large shallow water lake, five to 10 feet deep. The region served as the discharge pool for the hill country to the east and the highlands to the north. Being shallow, the basin began to fill with silts and nutrients, which in turn drew life into and from the marsh. Parts of duck and tamarack, popple and birch, cattail and sphagnum moss fell and filled the marsh. When our ancestors arrived, the process had been well completed. Little evidence remained of the lake. The soil was a beautiful black muck that can steal away a farmer's heart despite the peculiar sponginess of it.

That bouncy feeling of the Buena Vista should have been enough to inspire caution. The early turn of leaves in this low ground should have warned off farmers from miscellaneous adventures needing a long growing season. After the dredging of the early century most farmers lost their taste for doing battle with the muck, satisfied with the occasional rewards and the insurance the marsh could provide. It is a lesson lost on the new generation of vegetable farmers and their draining strategy.

The invasion of the marsh by heavy vegetable production is a major threat to the surrounding farm community. Being lost is the gigantic filter between cultivated land and the streams which flow out of the marsh into the heart artery of the Wisconsin River. Marsh soils, being highly organic, have the capacity to bond with the orphaned nutrients from fertilized sand protecting, in some degree, the watersheds. Draining the marsh destroys the soil structure and its ancient function of buffer between high land and river.

To understand the marsh is to go beyond pure reasons alone. The Buena Vista Marsh has a romantic heart to be considered in the anatomy of the region and its people. The Indian forebearers knew the marsh was a giving ground. As farming took over the highlands the wildlife of the region was increasingly relegated to those back-forty plots every farm possessed. The marsh was able to

maintain a diversity of plant and animal kingdoms cultivated uplands could not. There were the colonies of birch dressed like celebrant priests and large old pines which escaped the sawyers sawdust song. There were fern glens and refreshing green pools. Great blue herons fed from the creek in their long legged fragile and haughty manner. Green herons haunted the limbs of dead trees and the sleepless nights of pup tent kids. Kingfishers flashed their blue flame in upstream pilgrimages.

The creeks harbored trout. A thousand farmers believed less in angels and heaven than they believed in trout. The brown, requiring an almost savage cunning to catch, the stainless-steel-bodied rainbows, cold and solid as casket handles. Or the stunning beauty of a brookie, framed in watercress. A window-peeking at such nakedness could ruin an otherwise regular farm kid.

The marsh was enchanted. Boys sent to mow hay or girls sent for wild asparagus could watch hawks, whole families of hawks, circle and drop, to rise suddenly up again with the complaining rope of a snake locked in the strength of their talons. Kids were kidnapped by nests of meadowlarks and bobolink, enticed by the gangling chicks of killdeer and the heart-hurting song of hermit thrush and whitethroat in the hedge of the creek bank. The marsh was a place of badger holes, skunks, willow whistles, coyotes and weasles. When the mowing became just too hot, too unbearable; when the chafe and sweat from baling had at last invaded, despite long-sleeved shirts buttoned to the throat; then the Buena Vista took final revenge as clothes were shed in an awful hurry and the creek touched its people again.

The marsh woodlots are rag remnants of the boreal forest, with cedar, balsam fir, white pine, aspen, tamarack, white ash, butternut, hemlock and basswood. These woods were the source of firewood, fence posts and whittlin' wood. Modern farming is not so aware of such domains. Marsh, bog and woodlot are viewed as perfectly good land gone to raise ducks and squirrels for city slickers to shoot on Saturday afternoons. From thence the drag-line and the bulldozer are inevitable, a heavy key turning in the exit door of the Buena Vista Marsh.

We are beginning to realize we own land less than we are owned by it, less hold it than are held by it. The constant expansion of fields, roads and suburbs is as much a failure of art as it is of mind.

The damage to the marsh would be less if the ditches were run a bit crooked, given oxbows so the stream could hydraulically shed its silt in a place of the farmer's choosing. Pointing a finger or a ditch, are both impolite. It is the curve which catches the eye, the flyrod and the canoe.

There is a soul in land and landedness. If we define soul as a reason for being, then marsh, bog, swale and swamp indeed have soul. Early mornings in trout season are evidence. Soul is the right to equate skunk cabbage with the potato and a burst of fireflies with the dragline. The marsh is the mirror of humanity, image of what was and is yet to be. An end of it would be unthinkable.

Prairie Chicken at Buena Vista Marsh. Painting by Artist Jens Von Sievers

Prairie Chicken

In spring, the treble-noted boom of the prairie chicken in mating ritual echoes across the grasslands of Buena Vista Marsh. It is the sound of a remnant population saved from extirpation by dedicated people, many of them hunters, who purchased 11,700 acres of habitat in the marsh and then leased it to DNR for management. This land is at the heart of DNR's project to save the prairie chicken which at the turn of the century numbered in the hundreds of thousands and inhabited every county in the state. Today Buena Vista and two nearby spots contain the only viable population of chickens east of the Mississippi River.

While Buena Vista Marsh covers a total of 40,000 acres, prairie chickens require only scattered parcels of grasslands to prosper. This makes their survival compatible with private ownership. Eventually, DNR will need no more than 14,000 acres in Buena Vista for intensive prairie chicken management. Woodcock, ruffed grouse, deer, waterfowl, many song birds and other species will also benefit.

Similar management plans will be carried out on the two nearby prairie chicken projects — Leola Marsh in Adams County and the Paul Olson Wildlife Area in Wood, Adams and Portage counties. Olson is a former Conservation Commissioner who sparked the private campaign to raise funds for purchase of prairie chicken lands through the Dane County Conservation League, the Prairie Chicken Foundation and the Society of Tympanuchus Cupido Pinnatus. At present 880 acres are being managed for prairie chickens on Leola Marsh and 1,550 on the Olson Wildlife Area.

Each spring about 500 persons view the prairie chicken mating ritual from state-owned blinds on six different booming grounds. The area's grasslands are also used for important national dog trials.

Butterflies in town

Cecropia moth. John Baker photo

Tiger Swallowtail. John Baker photo

Viceroy. Al Hillery photo

Lepidoptera love native plants. Keep a little corner for them and make city life happier.

ALLEN M. YOUNG, Curator and Chief of Invertebrate Zoology, Milwaukee Public Museum

Last autumn, an attorney friend told me how he came across a very large green caterpillar making its way along a curb on Wisconsin Avenue in downtown Milwaukee. He was rather startled to see this exquisite creature in the midst of steel and concrete, not to mention throngs of people and cars. The caterpillar turned out to be that of the familiar wild silkworm, the cecropia moth, and I explained to my puzzled friend that caterpillars of this beautiful insect, with a wingspan of at least five inches, dine upon the leaves of a variety of native and ornamental trees. Included in this rather catholic diet are the various trees city planners use to beautify the city-scape. It is the occurrence of such plants, along with less manicured weedy habitats adorning highways, railroads and vacant lots, that provide many of Wisconsin's more spectacular butterflies and moths with an urbanized habitat in which to breed and survive. They are fragile creatures that have made some sort of ecological adjustment to the rigors and challenges of city living.

My attorney friend has an uncanny ability to find bugs of all sorts, down to the tiniest ant zigzagging its precarious way across a sidewalk on a hot summer's day, dodging tricycles, feet and gushes of water from garden hoses. But he is only one of many Milwaukeeans who take great joy in seeing many kinds of insects, including butterflies and moths, thriving in the heart of the city, and within the immediate borders of places like Oak Creek, Bayside and Brookfield. Because of their relatively large size and beauty, butterflies and several giant silk moths play pivotal roles in bringing urban joy in natural history to Milwaukee's elders and children. There is enough raw material here to provide each of us with a touch of the natural world, but it is a precious resource that thrives in a precarious balance with other forces in the urban environment.

Butterflies and moths comprise the great order of insects known as the *Lepidoptera*, a term derived from Latin meaning "scaly-winged." Like all arthropods, insects such as butterflies and moths possess a unique exoskeleton, partitioned into a series of flexible or jointed plates, allowing for considerable refined and agile movement as well as protection from drying out. All insects have six pairs of walking legs in the adult stage, and most go through a complex life cycle involving two or more distinct stages. For butterflies and moths, there are four stages to the life cycle: egg, caterpillar (larva) pupa (sometimes encased in a silken coating called a cocoon) and adult. Although biologists date the arthropods as a group back more than 300 million years, the land invasion by the insects was considered to be the root of the great ecological success we note for these creatures today. Our short course in insect biology should include a mentioning of the broad range of feeding habits exhibited by the group. In the case of the *Lepidoptera*, the caterpillar stage has chewing mouthparts capable of processing plant or animal tissues, and the adult has a coiled-tube proboscis that sucks nectar and other fluids such as fruit juices, and mulches pollen. A major innovation in the evolution of the insects was the appearance of wings, secondary appendages that permitted forms such as butterflies to occupy aerial space in addition to ground space or plant space. A great naturalist once commented that the wings of a butterfly, with its riot of colors laid out in an exquisite design that would be the envy of a Picasso or Renoir, reflected the "paintbrush of natural selection." What was meant by this was that the colors and patterns of colors on the wing of a butterfly were not accidents of nature, but finely-tuned expressions of adaptations to allow such creatures to survive in the environment.

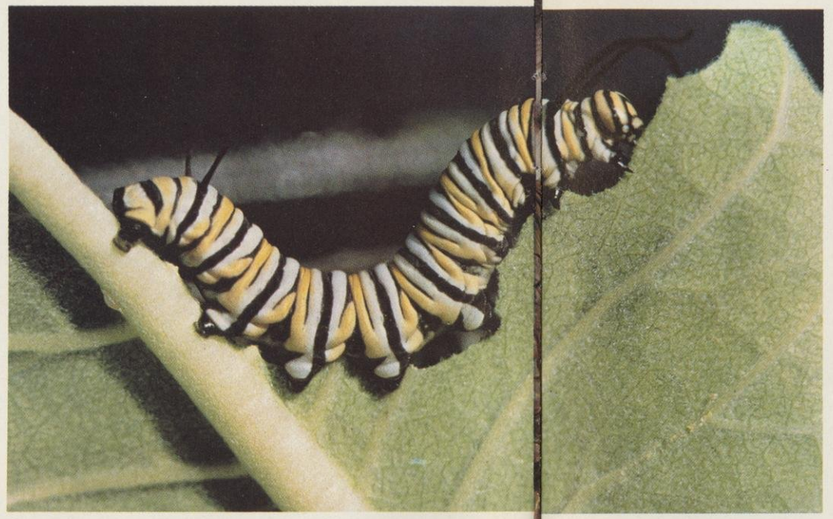
Although more than 94% of all animals are invertebrates, forms without an internal jointed skeletal structure, a staggering 83% of these are arthropods, and of these, the vast majority are insects. More than 80% of the globe's butterflies and moths are found within 15° of the equator, that is, in the tropics, and mostly in tropical rain forests. There are close to 100,000 described species of butterflies and moths in the world, and who knows how many more remain to be discovered. Astonishingly, if a fervant collector or but-

terfly hunter were to spend a single day in each country or island of the world, he or she might see or collect a total of no more than 500 species! Why so few relative to the total pie? Because many species are rare, that is, their populations are very localized and restricted. But even at the higher latitudes, such as Wisconsin, there is plenty of glory in butterflies and moths. We have many spectacular forms, some rare, and others, such as the familiar monarch butterfly almost as common as houseflies. Although we know that the caterpillars of these creatures mulch leaves and the adults imbibe juices and pollen, we still know very little about how these foods relate to the metabolism of the insect. We do know that butterflies and moths lead a precarious existence, a fine ecological balance between their predators and their food plants. But each butterfly or moth species is really a subset of these food chain components, because the caterpillar is also a plant predator. When a caterpillar munches away on the fresh leaves of a green plant, it might take away considerable amounts of food stuffs or energy-rich materials that the plant might otherwise use to make flowers or seeds. We know that some species are extremely fussy about the plants they dine on, selecting members of only a single family, while others are virtual gourmets on a broad range of plants. Because the eggs and caterpillars of many species are prime targets for predators, most species never become superabundant and strip plants of their valuable foliage.

A general rule of thumb in the ecological world is that a butterfly or moth species native to a region has its population in fine balance with its natural enemies, and just enough adults survive to breed and carry on the species over time. Thus on a hot summer day in the Milwaukee area, we seldom see huge throngs of tiger swallowtail butterflies or red admirals, primarily because the natural balance of things keeps their numbers at certain levels. Such abundance levels may change from year to year, depending upon changing patterns of weather and alterations in the natural landscape, factors affecting both the food supply

Skipper on thistle.
Photo by author

Monarch caterpillar on milkweed. Photo by Al Hillery



of these creatures and the abundance of their natural enemies. But the 400 or so native butterfly species of North America are infused with exotics, generally accidental introductions from other lands. Here is where the trouble often starts. A most celebrated case, and one of current growing concern to Wisconsinites, is the maverick gypsy moth. Introduced by a misinformed moth breeder in the 1900s in the East, who thought he could produce silk commercially from it, the small dull-colored moth spread very quickly throughout the northeastern United States, and is slowly eating its way westward. The caterpillars are uncanny in their ability to devour the leaves of many kinds of shade trees, including, of all things, conifers! And because this pesty moth is a native of Europe, it has few effective natural enemies in North America. Together with its eclectic feeding habits, this absence of a control mechanism makes this moth a formidable adversary to humans who enjoy the cool shade of stately trees in the summer, be it in a yard or local park. In recent years, the moth has been sighted in Wisconsin, colonizing its way to the Continental Divide.

By their own nature, cities tend to shrink the amount of suitable habitat for denizens of the natural world. But we also know that although butterflies and moths are fragile creatures, various species have shown remarkable resiliency to thrive in the urban setting that pockmarks much of the face of North America today. The monarch is a good example. Monarchs collected in Central America look pretty much the same as the ones we see in the Milwaukee area each summer. We might find that the species of milkweeds used by their caterpillars at the University of Wisconsin-Milwaukee field station in Saukville are different

Monarch. Photo by author

from those used in Costa Rica, but the final products are very similar. The monarch has tough, leathery wings and the butterfly is protected from being gobbled up in droves by birds through its rather purgative body juices. Its very distasteful condition is the result of the caterpillar feeding on milkweeds. Milkweeds in Milwaukee or virtually anywhere are loaded with alkaloid substances called cardiac glycosides, agents strong enough to induce cardiac arrhythmia in small mammals. Likewise, these poisons, a natural defense or resistance of the plant against insects, are the basis of protection for the monarch. It is one of few insects that have penetrated this defense system of the milkweed and in turn, has used it for its own defense.

What all of this points to is a pattern in nature. Nutritionally most plants are very similar, thereby providing the same nutrients for insects. But what is often distinctive among different plants is the kind of other substances contained in leaves and other parts to repel insects. Thus each plant species puts up an ecological smoke screen to discourage most insects from attacking it. But some species penetrate this barrier and become ecologically specialized to feed on it. Thus the monarch is generally restricted to feeding on milkweeds as a caterpillar. Its complex biochemical machinery related to feeding in the caterpillar stage can handle little else in the vast plant world. Imagine whole sets of similar relationships for other butterflies and moths and their food plants, and you have the picture. The chemical participants may vary greatly among different plants, but the principle is the same.

The monarch is one of Wisconsin's truly migratory butterflies, capable of journeying thousands of miles to Central America each autumn. But the majority of our local, native species pass the winter right here. Usually they do so as a pupa or chrysalis, since it is this stage of the life cycle that does not require active pursuit of food. In butterflies and moths, the bulk of feeding occurs in the caterpillar stage, and it is supplemented with feeding in the adult stage, the latter being important to the reproductive process in many species. The mourning cloak is an example of a local butterfly that passes the winter as an adult. This medium-sized chocolate brown butterfly with cream-edged wings is one of the first spotted in spring and among the last to disappear in autumn. The spiny black caterpillars live in communal gatherings on willows and elms in the Milwaukee area. At first glance, they seem formidable, but they are not. Sometimes people are concerned that they will eat the entire willow in the backyard. But this does not happen because natural enemies take a handsome toll of the caterpillars, and the group is thinned out so that only a few become butterflies. Unfortunately all too often panic strikes and the caterpillars are done in.

In my neighborhood on Milwaukee's west side, I have converted a section of my yard into a weedy patch suitable for rearing butterflies and moths. This was easy to do. I simply let a small strip of the lawn convert back into a weed patch, laden each summer with milkweeds, Queen Anne's lace, goldenrod and other notables. This is my domicile for enjoyment of the Wisconsin summer. This weed patch is across from a small vegetable garden. The rabbits enjoy the clover and weeds in the weed patch and stay away from the succulent morsels in the vegetable garden.

Cecropia caterpillar.
Photos by author

Cecropia moth.

Monarchs come in to place their pearly eggs on the milkweeds and I let gaudy cecropia moths lay their eggs on the lilacs and wild plum saplings. The elm saplings are an ideal host for the stubby caterpillars of the polyphemus moth. My yard becomes a teaching haven for those neighborhood kids with an eye for nature. They go away and do the same. Bit by bit we bring the moths and butterflies into the neighborhood. I have all too often heard laments about the last time a promethea moth was seen in the Milwaukee area. Or: "Gee, you just don't see many butterflies around here anymore."

"Really now, what happened to the fireflies?"

Although well intentioned, all too often city planners select exotic trees and bushes to adorn the Interstate system and parks. When a new house is constructed on a wooded lot, the owners are surprised to discover the trees they left around the house dying back within a few years. We seem to want the quality of life that is reflected in the beauty of a butterfly's wing, but sometimes we go about it in the wrong way. Exotics do not survive as well in the Wisconsin winter as do native plants, and they are generally less resistant to disease and insect attack. We see lots of dieback of such vegetation along the Interstate within a few years after planting. Then we witness what should have happened in the first place. The native flora moves in. Native species should have been planted in the first place, thereby saving money and work. There is nothing more spectacular than an assemblage of native plants like goldenrod, Queen Anne's lace, Joe-Pye weed, milkweeds and others, in bloom along a roadside in the summer. With a bit of planning with nature in mind, an assortment of different species, each with a specified blooming period and different height provides a beautiful display to enjoy. They also attract many butterflies, and these creatures often act as important pollinators of native species. A popular misconception is that hay fever is caused by goldenrod in late summer or early autumn. But this is not possible because the pollen of goldenrod is not carried by the wind. It is too heavy and sticky. Rather, butterflies and insects carry the pollen on their bodies. In planning to build a home in a wooded lot, care can be given to choosing native tree species that will tolerate the changes in drainage and exposure to sunlight that often accompany such construction. Oftentimes, these very trees become food plants for some of the state's most beautiful wild silk moths, including the luna, polyphemus and promethea.

Butterflies and moths are fragile creatures, but their greatest vulnerability resides in the loss of suitable habitats to thrive in. In Marcel Marceau's familiar pantomime, "Bip And The Butterfly," the energetic Bip roughly captures a butterfly and kills it accidentally. Shocked and jolted into realizing the fragility of the creature, Bip very gently frees a second one he captured. The message is that the value of life can be easily lost. The quality of life is what is important, as the butterfly is in a man's hand. Butterflies teach us

something positive about the quality of life, of the value of peace, the arts and effective communication. So too must we keep butterflies with us in the galvanized urban setting. Milwaukee is blessed with a rich assortment of parks, panoramic lakefront, and sprawling nature centers. All of these can be places to reconfirm our roots with the quality of life. The backyard can become a cathedral for developing a sensitivity to the fragile nature of life.

That my attorney friend found a big cecropia caterpillar in downtown Milwaukee on a crisp autumn lunch hour attests to the ability of these creatures to be with us. We should remember that insects are major links in the food chains that support other living creatures, including birds and mammals. It is in our own best interest to keep their environment safe. The late summer is full of birds seeking out the thick green caterpillars of silk moths. Squirrels seek out the protein-rich pupa during the long Wisconsin winter. The pollinating role of many native butterflies ensures a summer full of wildflowers in bloom. We do not have to change our yards into miniature wildlife sanctuaries by converting all of the lawn to a weed patch. Rather, we can set aside a small parcel. By keeping some natural habitats around, we ensure the survival of butterflies for our children and grandchildren. DNR's endangered species list names some 42 species of vertebrates and more than 87 species of plants. But no insects are mentioned. Insects, of course, are the intermediate links in the food chain between the plants and the vertebrates. For these creatures, attention should be given to preserving the habitats they require for survival. Doing so will also have the spin-off benefit of providing a reservoir of natural enemies that may become useful in controlling pesty species in the future.

Keeping a few thistles or nettles in the yard or park will allow us to enjoy the Painted Ladies and Red Admiral butterflies. Magnificent Tiger Swallowtails, with their yellow and black stripped wings, will pause for nectar. There is no need to journey to the remote jungles of the globe to seek natural beauty. It exists right here in Milwaukee.

A stockbroker friend of mine finds a lot of peace and pleasure in hunting for the big cocoons of the Cecropia Moth every winter. One of his biggest thrills is watching the huge moths emerge each spring. And then he frees them. Somehow his inner life is steeled with the beauty of these creatures.

Butterflies tell us a lot about the urban quality of life. When they disappear entirely, we will know we are losing it.

The urban environment, as represented in Wisconsin by Milwaukee and its outlying suburbs, can be a continued source of enjoyment and appreciation of nature. It gives us the soft sounds of the True Katydid on an August night in Elm Grove, where these elusive insects sing from the tops of tall maples and oaks. It brings the occasional glimpse of fireflies in Brookfield, driven further from the city by the replacement of old culverts with cement-lined tubes. It can be the nightly sight of giant silk moths fluttering around the lights of the stadium during a Brewers game. By keeping wild patches of land around us, we can prevent the outright elimination of creatures that figure strongly in providing natural beauty, as well as ecological balance.

Milwaukee can be a leader in beautifying its already rich landscape with an eye for natural beauty, highlighting wildlife native to the area. What a legacy for future generations of Wisconsinites, and what an example for the rest of America!

Black Swallowtail.
Photo by Al Hillery

Wisconsin's 1983 Waterfowl Stamp Contest

Winner: Blue-winged teal by Artist Rochne Knuth, 294 E. Johnson St., Fond du Lac, WI 54935

First runner-up: Wood ducks by Artist Donald Kloetzke, 130 Walnut St., Fond du Lac, WI 54935

Second runner-up: Canada Geese by Artist Nick Pitl, W235 N8711 Woodside Rd., Sussex, WI 53089