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Madison, Wisconsin: Wisconsin Department of Natural Resources,  
September-October 1977

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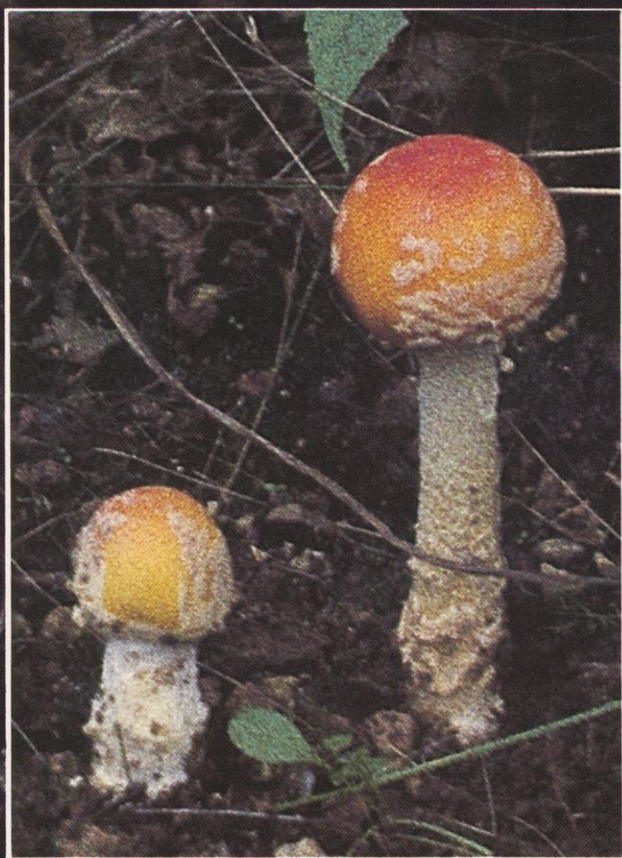
# Wisconsin

## NATURAL RESOURCES

SEPTEMBER-OCTOBER 1977 • VOLUME 1, NUMBER 5 \$1.00







# Beautiful, but deadly!

GEORGE J. KNUDSEN, Chief Naturalist, DNR

The Fly Amanita (*Amanita muscaria*) is one of the most colorful, and deadly, of mushrooms. Growing from summer 'til frost, most often in woods and woods' borders, but *sometimes* in more open areas, the Fly Amanita is found statewide, often in abundance. Its white gills are not attached to the stem. A collar, or skirt surrounds the stem below the cap, and the base is set in a cup of tissue. These are typical, but the colors, and

densities of whitish scales on the caps of different specimens vary considerably.

Other members of the Amanita family found in Wisconsin have similar characteristics and nearly all are poisonous and can kill. Be warned!

**DON'T EAT** any mushroom unless **ABSOLUTELY SURE** of its identity!!! Enjoy the interesting forms and colors; perhaps photograph them then proceed on your way!

Photos by John Kubisiak



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## Wisconsin Natural Resources

### September-October 1977 Volume 1 Number 5

Wisconsin Natural Resources is an official bi-monthly publication of the Wisconsin Department of Natural Resources, 4610 University Avenue, Madison, Wisconsin 53705

Subscription rates are: \$4.50 per year, \$8.00 for two years and \$11.50 for three years. Single copies \$1.00. Notification of address changes must include mailing label and new address. Allow six weeks. Send subscription information and requests to: Wisconsin Natural Resources, P.O. Box 7191, Madison, Wisconsin 53707.

Second-class postage paid at Madison, Wisconsin.

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## Front Cover

Wood Ducks. Painting by Martin R. Murk. Mr. Murk, a Wisconsin artist, designed this year's U.S. Fish and Wildlife Service Duck Stamp. A feature on his work and life begins on page 4.

## Back Cover

Lake Poygan sunrise.







It's been 32 years since Wisconsin has had a duck stamp winner. He is Martin R. Murk and this is some of his story and some of his art.

# Wisconsin's 1977 duck stamp winner

A duck stamp is a necessity if you hunt waterfowl. It's also a piece of art. Not too long now, you'll be in the Post Office laying out a five spot for one.

Lick it. Paste it on the license. But don't sign yet. Take a close look. You may not recognize the birds, but that's Wisconsin art and you haven't seen the like for a long time.

The first stamp ever, a pencil sketch of a pair of mallards, was designed by Ding Darling in 1934. It launched the Migratory Bird Hunting Stamp Act.

The Act raised \$176 million, purchased two million acres of habitat and helped the U.S. Fish and Wildlife Service buy Horicon, Necedah and other refuges. Recently, in 1974, \$1-½ million in duck stamp money purchased 3,400 Wisconsin acres for waterfowl production. More stamp dollars for Wisconsin may be on the way.

During the 43 years while this was going on, duck stamps as art achieved more and more distinction. The

best wildlife artists competed to have a work selected. Their prints now hang on many walls. Stamp collectors abound.

And in all the years, although many tried, only two Wisconsin painters made the grade. They are:

Owen J. Gromme, at 81 acknowledged dean of the genre who won in 1945 with a work entitled "Spoonbills."

And this year's winner, 49 year old Martin R. Murk of Greendale who won with an acrylic painting of a pair of Ross' geese.\*

Ross' geese are the birds you'll see before affixing your signature. Study a little longer. They're fascinating but they mean more than meets the eye.

Martin Murk is trained in fine art and design. He makes his living as a free lance commercial artist

\* Lee LeBlanc, a Michigan artist who maintains a gallery at Minoqua, won in 1973 with a pair of Steller's Eiders.



painting farm animals and illustrating and designing advertising art for industrial and agricultural clients. But his labor of love is painting waterfowl and game birds. It is deep seated, established in youth by paternal tales of fabulous hunts on the Canadian prairies.

Martin is a hunter too and so is his 22 year old son, Bob. There is a family cottage on Big Hills Lake in Waushara County where the two tramp the Willow River and the ditchbanks for ducks and ruffed grouse.

The artist eye is keen on a gunsight. He has bagged a deer near Wild Rose three out of the last four years. In the '76 season though, his son filled and Martin didn't.

"Bob always gets his deer and it's always a bigger one than I get."

The artist father also tells proudly about how Bob scored a triple on teal.

He is a member of Ducks Unlimited and has donated art to the cause for use as prizes and for publication.

Love for the out-of-doors has been passed along. Bob is studying to be a forester or geologist; daughter Laura, married and living in California, is a zoology major; and Nancy, at home will study animal husbandry.

The Murk's have an aging beagle hound named Chloe that retrieves pheasants and greets guests.

In their home, waterfowl dominate the decor. It is tasteful and careful as becomes an artist. Martin's paintings adorn the walls. A shadow box displays his collection of decoys.

His slightly impressionistic wood ducks rising through green willows (see cover) was done in part with home decoration in mind.

"So much waterfowl art is stark and museumlike. The men like it, but I wanted something that would fit better into a living room so the wives would like it too."

Martin's wife, Vera, who quit her job to handle the burgeoning business of his duck stamp success, agrees. The wood duck is her favorite.

Although he had never seen one alive, a similar preconceived design idea is the reason Martin chose Ross' geese for his duck stamp entry. He liked their pattern of color and the artistic opportunities for contrast and silhouette. His winner is spare and realistic compared to the impressionistic wood duck.

Ross' goose is small and white and migrates from the Arctic Circle to California. It rarely, if ever, comes through Wisconsin. Martin learned about it close up from study skins at the Milwaukee museum and from photographs.

Ironically, he was more familiar with his three previous entries that lost: mallards last year, Barrows goldeneye in 1975 and a merganser in '67.

Nevertheless, the Ross' geese won over a field of 272 other entries.

So when you write your signature across those

Ross' geese this fall keep in mind that they helped a talented Wisconsin wildlife artist emerge to national recognition. We all wish him luck and want to see more.



Late Departure: Driving across route 49 on a snowy, windy day in late November the artist found Horicon Marsh deserted except for these geese. For some reason they had not yet left on the migratory journey.



Barrow's Goldeneye from 1975

Mallards: the 1976 entry.

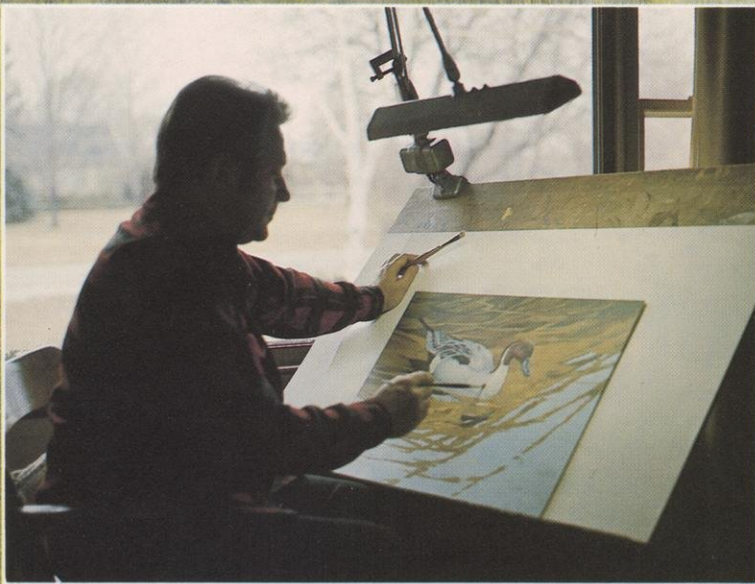






Bufflehead





Vera and Martin Murk and the decoy collection.

Merganser





# Double your pleasure: collect your own fish bait



**THOMAS KARL, UW-Madison Graduate Student in Entomology**

With a little planning and extra effort at home, anglers can collect and maintain any number of the most commonly used fishing baits in Wisconsin. Follow a few guidelines and it'll double your pleasure.

Dragonfly nymphs are proven "fish getters" for perch, bluegills, bass and many other fishes. They are sometimes called hellgrammites but this term more accurately applies to the dobsonfly larva. Dragonfly nymphs live on submerged vegetation and on the bottom of ponds, lakes and marshes. An easy collection method is to bring the vegetation and organic debris in which they live onto the shore with a garden rake or similar instrument and carefully search through it. Deposit the dredged material in small piles rather than one or two large ones. If you leave the piles alone for a few minutes the nymphs on the outside will start to move

Fishing is more fun when you catch the bait too. This article will tell you how to find and keep dragonfly nymphs, beetle larvae, hellgrammites, crayfish, leeches, caddisflies, stoneflies, mayflies, crickets and worms. It's easy.



Stone fly

around making themselves easier to spot. After collecting these, slowly separate the pile and remove those inside. If you place the debris on a light canvas sheet or in a white pan partially filled with water the nymphs will show up even better.

The sorting screen technique is also good. Use a simple wooden frame of any convenient size with one centimeter (about ½ inch) wire mesh fastened to the bottom. Place a quantity of bottom debris on the screen and slosh water over it; this will make the nymphs more visible by washing away mud and silt.

Shining a light into shallow water at night attracts certain groups of nymphs which can then be easily picked up.

Hellgrammites



Caddis fly larva and the tube it lives in







Stream collecting net in action.

The best collecting is done in water less than three feet deep.

You can keep nymphs alive for short periods if the water is kept aerated. Inexpensive water aerators can be purchased at almost any pet or discount store. Dragonfly nymphs are hard to keep for extended periods because they are cannibalistic and require live prey. The tendency to eat each other is emphasized in crowded situations so don't overcrowd them!

Beetle larvae occupy the same habitats as dragonfly nymphs and the same collection methods and maintenance requirements apply. If you're after panfish, bass, walleyes or other game fish, these insects will be super bait! Be careful when handling the large ones—they can give a good nip.

Hellgrammites (dobsonfly larvae) live in both ponds and streams. They too have voracious appetites for live prey and are also best kept for short periods. Hellgrammites are especially fine bass, trout and panfish bait.

Crayfish, otherwise known as crawdads or crabs, are common on the bottom of ponds, streams, lakes and marshes. Some even live in burrows away from the water. You can find them by turning over rocks, logs, and debris beneath which they hide during the day. Since they are active at night, searching with a light will probably yield more individuals for less time and effort.

Crayfish are easily lured to traps containing dead fish, chicken bones, meat or similar items. Solid baits can be tied directly inside the trap, while small pieces may be placed in a plastic container with holes drilled through the sides.

Crayfish traps are of many designs, but most work on the funnel principle. The trap is a closed container

with a funnel-shaped entrance. The small opening is suspended inside the trap. Crayfish climb in but can't seem to find their way out. Minnow traps work well or you can construct one from wire or plastic mesh, one centimeter ( $\frac{1}{2}$  inch) square or smaller.

You can keep crayfish in an aquarium if the water is aerated and clean. Feed them a diet of aquatic vegetation and chopped meat, fish or earthworms. They'll live longer with a few rocks to hide under.

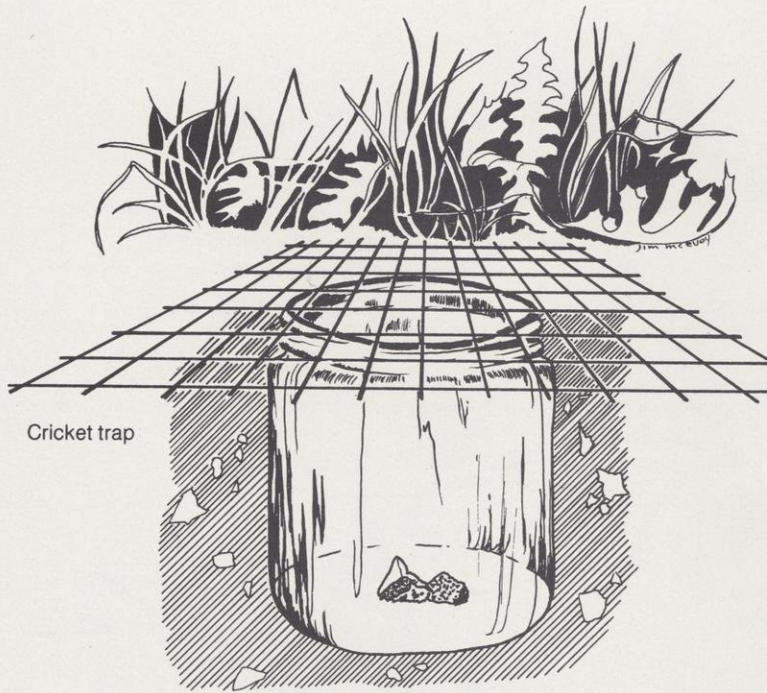
The tail portion of the crayfish is an excellent fishing bait. At certain times, its skin is soft and this is when they are best. You can use both the hard-shell and soft-shell kinds for bass, northern pike and walleyes. Panfish gorge on any small ones available.

Leeches are worms that have become adapted to an aquatic existence. You can recognize them by the presence of a "sucker" at both the front and back end. They are easy to collect and keep.

Because leeches are very sensitive to vibrations or foreign substances merely walking around in the water may cause some to attach themselves to your legs or boots. You can find the more elusive ones on rocks, logs and in organic debris. They can also be caught in unbaited traps if the mesh is about the size of window screening or smaller.

Leeches are especially abundant in warm, protected shallows with plenty of vegetation, stones or debris for concealment. Use rakes, dip nets or forks to gather debris and vegetation in the search for leeches. Baiting with raw meat attracts many kinds. Leeches may be kept in an aquarium if water is clean and cool, the light dim and a screen cover fastened on tightly. Feed them a small piece of raw liver about once a week





or depending on need. You should remove the meat immediately after feeding or the water will foul. Leeches are a favorite food of bass and walleyes.

Immature caddisflies, stoneflies and mayflies living in streams and rivers are excellent bait for fish in their respective streams. These insects are most common in parts of the stream where water is just breaking over the tops of the bottom rocks.

Caddisfly larvae are grublike forms with short legs just behind the head. Many kinds build cases to live in; others spin nets. Stonefly nymphs normally stay well hidden in crevices and cracks in rocks or logs. You can distinguish them from mayfly nymphs by the presence of only two "tails". Mayfly nymphs usually have three "tails" and gills along the abdomen. They are collected by turning over rocks, logs and other items in the water. A more efficient method is to use netting. You can construct an inexpensive collecting net by fastening a piece of window screen (or any similar sized netting) between two supports. Branches or old broom handles work well as supports. Hold the screen against the bottom at a slight downstream angle and turn over stones and rocks upstream of it, letting the current wash dislodged insects onto the netting. Small dip nets or even kitchen strainers also make good collecting tools.

Streams and stream banks are fragile areas. You should take care in your collecting so that you leave the stream as undisturbed as possible.

Anglers have long recognized crickets as one of the better baits around for panfish and bass. You can find crickets most commonly from midsummer to late summer under bark, old pieces of cardboard and stones.

A baited trap is a good way to catch a lot with a minimum of effort. Sink a container into soil until the lip is level with the ground. A ring of petroleum jelly around the rim will help prevent escapes. Put a large mesh screen over the top to keep out unwanted visitors such as mice and chipmunks. Molasses, peanut butter, oatmeal and similar items all work well as bait.

Crickets are easy to care for. All you need is a container with about an inch of slightly moistened sand

on the bottom. A small dish of water may be kept in the jar with larger crickets but small ones may drown in it. Water is not necessary if the sand is kept moist. Be sure the cover allows air to circulate freely but is also fastened securely. Keep the container out of direct sunlight. Crickets will feed on lettuce, apples, bread, oatmeal, grass or other items which don't mold readily. You can make a trouble-free diet which will keep indefinitely by grinding ground oats, adding a little sugar, skim milk powder and enough water to make a thick paste. This mixture is spread thinly on heavy paper and allowed to dry. About one square inch supplied every few days will feed several crickets.

Earthworms or angleworms have been used for centuries as fish bait. They are especially plentiful in soils containing organic material, such as old lawns, under manure piles or in wild grasslands. Turning over surface layers of moist soil will get earthworms. If you have a garden, or just a bare plot of ground, keep a corner covered with grass clippings or mulch. The moist ground and food attracts earthworms.

Nightcrawlers are most easily gathered on the surface at night when they emerge from their burrows. It is important not to use direct light in searching for them because they are very sensitive to light. Fasten a piece of cheesecloth over the flashlight lens with a rubber band or paint the lens with red fingernail polish.

Nightcrawlers are most likely to be on the surface during humid weather or after a rainstorm. Prime places to look are almost any piece of fertile soil. Golf courses and lawns (especially under large trees) seem to be "hot" spots. These worms are also very sensitive to vibrations so walk softly. Because of this sensitivity, you can make them emerge by tapping the soil with a stick or go a step further and drive a stick into the ground about ten inches and knock on that to get them to emerge. By drawing a board across the stick you can make vibrations that have been known to drive up nightcrawlers as far as thirty feet away!

Earthworms and nightcrawlers require little care in captivity. Keep them in wooden boxes supported above the ground. The support keeps the food from rotting.

Worms thrive in a mixture of one part stable manure, one part screened topsoil and one part peat moss. Include a sprinkling of corn meal or mash at the ratio of one half pound per cubic foot of fill. The mash or corn meal provides carbohydrates, proteins and fats so the worms are well nourished. You should also feed them kitchen wastes, like fruits and vegetables. A layer of alfalfa at the bottom of the box will improve drainage, provide additional food, and keep the compost from sticking. Be careful not to water the compost too much. It should be moist, but not soggy. A piece of burlap on top will keep the surface of the compost damp and conserve moisture. Sprinkle the material once or twice a week depending on conditions. If you keep them outside, they should be protected from flooding rains. Worms are fine bait for just about any fish.

Now that you know how, try collecting your own fish bait. You'll soon discover that it not only saves money but it's also half the fun of fishing. And it really does double your pleasure.



# Public land: who pays the taxes?

Public land in Wisconsin is enjoyed by everybody. A long held common belief has it that local people foot the bill for the rest of us by paying the taxes. It may come as a surprise, but recent studies show that the local property owner's taxes are hardly affected at all — that not only everybody enjoys, but everybody also helps pay.

**MONROE ROSNER, RICHARD BARROWS, *Natural Resource Economists, UW-Madison***

Wisconsin counties with large amounts of public land do not have high property taxes as compared to the state average. Most public land is in towns and, in general, towns have lower tax rates than villages and cities. Services rather than the presence or absence of public land makes the difference.

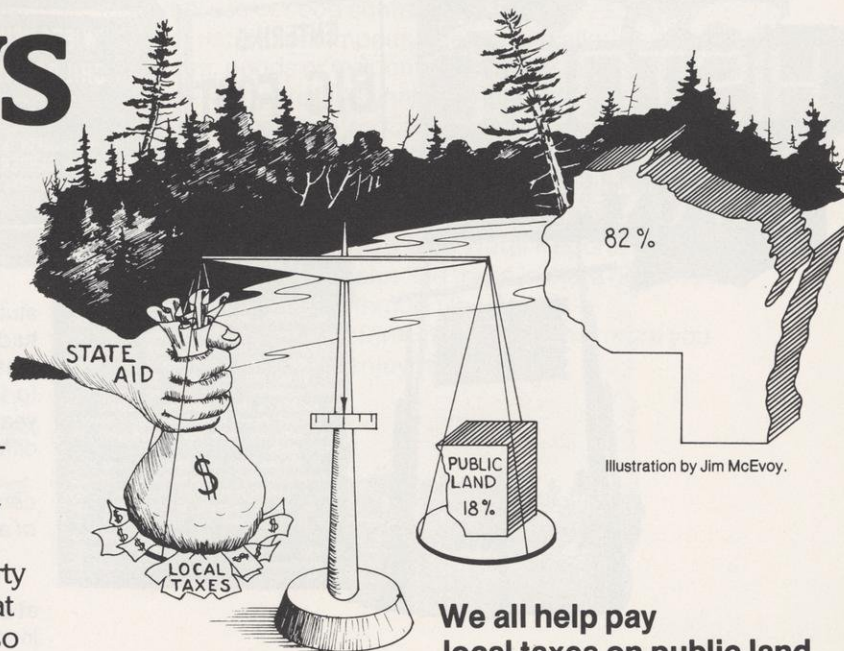
Public land has nearly no impact on local taxes because of the way the Wisconsin property tax system works.

## Wisconsin's property tax system: how it works

Several types of government have authority to tax property. In rural areas, where most public land is located, about 93% of the total property tax is accounted for by three types of government, towns (6.4%), county (17.3%) and school district (68.7%) (see table).

Each type of government calculates a property tax levy by estimating its expenditures and subtracting the amount of state and federal payments, or other receipts it expects to receive. The county and school district allocate their levy to their towns, villages, and cities according to full or equalized value. Thus, if the town of Wyoming represents 4.6% of the equalized value of Iowa County, it is responsible for raising 4.6% of the county levy. The same applies to the school levy. If Wyoming loses valuation because of a public land purchase, it then has a smaller proportion of the valuation of county and school district, and raises a smaller proportion of the school and county tax levies.

A *tax rate* is calculated by dividing a tax levy by the total value of property (tax base) in the area. For a given tax levy, a smaller tax base means a higher tax rate.



Public land means a lower tax base, but it does *not* necessarily mean that tax rates will increase. When the amount of public land increases, the tax base of the town, county and school district all decrease. But when tax base declines, the state provides more school aid to the school district, more shared taxes to the town and county, more tax credits to local taxpayers, and in addition the public agency may provide payments in lieu of property taxes to the town or county. These increased payments reduce the amount of money each type of government must raise from the property tax. So, public land means both a lower tax *base* and a lower tax *levy*. Public land may cause tax rates to go up, or down, depending on the specific situation.

## PAYMENTS TO LOCAL GOVERNMENTS IN WISCONSIN IN-LIEU OF PROPERTY TAXES, 1976

	Acreage	Payments to Local Gov'ts in-lieu of Property Taxes	Average Per Acre in-lieu Payment
1. U.S. Fish & Wildlife Service National Wildlife Refuges	108,945	\$ 27,500	25¢
2. U.S. Forest Service National Forests	1,492,486	207,698	14
3. Wis. Dept. of Natural Resources State Parks, Forests, Fish & Game Mgt. Areas	1,019,775	721,237	71
4. County Forests	2,251,960	2,066,657	92
5. Forest Crop Law Private Forest Crop Land	1,012,667	316,743	31
6. Woodland Tax Law Private Woodlots	152,708	30,542	20





## County forests

Wisconsin's county forest system was established from cut-over lands which the counties acquired by tax deed. Today, the county forest system represents the largest class of public land ownership in the state, with 2¼ million acres in 28 county forests. County forests provide recreation, wildlife habitat and watershed protection, in addition to the jobs created by annual timber sales of over \$1-million.

Each year, towns receive a payment from the state of 20¢ for each acre within the county forest. In addition, 10 % of the revenue from timber sales is divided among the towns on the basis of their proportion of total county forest acreage. The county receives 70 % of the timber sale revenue, plus a 10¢ per acre loan (repaid by the remaining 20 % of timber receipts). What would happen to property taxes if land were withdrawn from the county forests and sold?

The effect of a 3,000 acre sale of county forest land in 1974 in the Town of Harrison in Lincoln County was studied. It was assumed that the land was valued for tax purposes at \$75 per acre (Harrison average \$74). Due to a loss in school aid, the extra tax base (\$225,000) would have little effect on the school tax rate, which would decline only 0.09¢ per \$1,000 valuation. The county tax rate would decline 0.44¢ per \$1,000 value. The town tax rate would actually *increase* by about 6.7¢ per \$1,000 value, because the town loses \$283 in timber sale revenue and \$600 in in-lieu payments (20¢ per acre). Since the initial effect of the changes is an increase in the total tax rate, the town would receive additional shared taxes and tax credits, but the final result would be a tax rate *increase* of 4¢ per \$1,000 valuation. *Thus, sale of county forest land in the town of Harrison would raise local people's property taxes.*

## Federal wild and scenic rivers

In 1970 the National Park Service began buying land on the Namekagon River in Washburn County for the St. Croix-Namekagon National Scenic Riverway. To determine what effect this was having on local property taxes, National Park Service acquisitions in the Town of Springbrook were

studied in detail. By late 1975, nearly 700 acres (70 tracts) had been acquired. If these properties had still been on the tax rolls they would have been valued at \$260,000 in 1974, equal to 10 % of the equalized valuation of the entire town in that year. The question was: How would taxes in Springbrook have differed in 1974 if the \$260,000 was still on the tax rolls?

*We found that taxes would have been lower by only 1.1 cents per \$1,000 of equalized property valuation so the owner of a \$30,000 home would have paid 33¢ less in property taxes.*

Why is the impact so small?

First, the tax rate for the school district hardly changes at all (it would decline by 0.2¢), in part because \$260,000 increases the school district's tax base by only 0.3 %, but more importantly, because for each dollar of school tax collected from the National Park Service land the district would lose nearly a dollar in school aids. So the school tax rate, accounting for 70 % of the total tax rate in Springbrook changes very little.

The county tax rate of \$5.00 per \$1,000 would decline by 1¢, a reduction of 0.2 %. The town's tax rate would also change very little, despite a 10 % change in its tax base. The town levied only \$147 in property taxes in 1974—a tax rate of 5.6¢ per \$1,000 full value. A 10 % decline saves only 0.6¢.

The total change of -1.8¢ per \$1,000 means that shared taxes and tax credits will decline slightly, offsetting part of the tax rate saving. Thus, the net effect of restoring 10 % of Springbrook's tax base would be a tax rate saving of 1.1¢ per \$1,000, equal to only five one-hundredths of one percent (0.005 %). Most property owners would not notice the difference.

In 1976 Congress passed a law requiring the federal government to make payments of 75¢ per acre for lands controlled by the National Park Service. Formerly, no such payments were made. If these payments had been made at the time of our study, the effect of restoring the lands to Springbrook's tax base—and the consequent loss of the 75¢ per acre payment—would have been an increase, rather than a decrease, in the total tax rate.

## Forest Crop and Woodland Tax Lands

Private land entered under the Forest Crop Law and Woodland Tax Law are also exempt from property taxes. However, payments in lieu of property taxes are made for these lands, and the impact upon local property taxes is similar to most public land. Sometimes people are opposed to including more land under these programs because they believe that local property owners will pay higher taxes as a result. On the face of it, this is perfectly reasonable, but things



are not always as they appear. An example should make this clear.

The Woodland Tax Law offers tax relief to the owner of a woodlot of 10 to 40 acres if he signs a contract and agrees to use good forestry practices. Instead of the property tax, the woodlot owner pays 40¢ per acre to the town (20¢ on contracts entered prior to 1977) each year the contract is in effect. Many Wisconsin woodlot owners take advantage of the Woodland Tax Law to help reduce their taxes. Without the law, landowners might be forced to cut their timber prematurely, or convert their land to some developed use.

But does this tax relief for woodlot owners cause other property owners to pay higher taxes? What would happen to property taxes if woodland tax lands were returned to the tax rolls? The question was asked for the Town of Pepin, Pepin County, where 1,644 acres were enrolled under the Program in 1974. The answer: *Returning the land to the tax rolls would have almost no effect upon local property taxes.*

In Pepin, we assumed that the woodlands would be returned to the tax rolls and valued at the state average for forest land, \$78 per acre (x 1,644 acres in Pepin = \$128,232). Since the average value for forest land in Pepin was \$18 per acre full value, our use of \$78 per acre will *overestimate* the benefits of returning the land to the tax rolls.

The additional tax revenue raised by the school district is largely offset by the decline in school aids so the school tax rate goes down by only 0.2¢ per \$1,000 of property value. The county tax rate drops by about 1.4¢ per \$1,000, but the tax rate for the town *increases* by 1.6¢ because it loses the 20¢ per acre in-lieu payment but makes up only 11¢ in extra town property tax revenue (only 2.5¢ if the land was valued at the Pepin average).

After accounting for adjustments in shared taxes and tax credits, *the total tax rate impact of returning the 1,644 acres of Woodland Tax Land to the tax rolls is a decline of 4/100 of one cent per \$1,000 of property value. This would mean a tax saving of 1¢ for the owner of a \$30,000 home.*

## Town taxes

The effect of public land on *town* government's tax rate can be approximated by comparing the tax for *town government purposes* (not county school district, etc.) collected on the land in private ownership with any payments the town would receive if the land is publicly owned. If the taxes are greater than the in-lieu payments, public land will increase the tax rate, and vice-versa. We have found that DNR lands will *decrease* tax rates in rural towns at least in the first few years after DNR purchase. This happens because the DNR pays 100% of the lost property tax revenue *to the town*, but in private ownership the town only receives 6% of the revenue (see table). The DNR payment declines over time, and eventually the DNR land has little effect on property taxes, similar to woodland tax, county forest, or other public land.



## Who pays?

Dozens of studies show that public land or other tax exempt land has very little effect on the property taxes of local people. In all cases tax rates for the county and school district are not affected much by public land because:

Extra school aid usually offsets most of the loss in property tax revenue for the school district and vice-versa.

The value of the public land is usually a very small proportion of the county and school district tax base.

If public land does not increase local property taxes, who pays the taxes that were previously collected from the land? The state makes up much of the loss through increased school aids, shared taxes, tax credits and in-lieu payments. The money for these state payments comes from state income taxes, sales taxes, and other general revenue sources. Thus, everyone in the state pays a very small amount of the costs of public lands, which seems reasonable since the general public benefits from public lands. The property tax system guarantees that local people do not pay the costs of public land programs through higher property taxes.

But what does this mean for local government? It means that local government officials do *not* need to be concerned that public land will mean higher property taxes for local residents. Local citizens and elected officials should make decisions about public land programs according to how it affects their *economy*, their *environment*, and the type of *community* they want. Decisions about public lands should *not* be based on an imagined tax effect, since the impact on property taxes is insignificant.

For more information on property taxes and how they are affected by public land purchases, ask your County Extension Agent for "Public Land and Property Taxes", Research Report R-2794, or write for it from Agricultural Bulletin Building, 1535 Observatory Drive, Madison, WI 53706.

## 1975 PROPERTY TAXES IN WISCONSIN TOWNS (PAID IN 1976)

	Total Taxes Levied	County	Vocational Education	Public Schools	Town	State
Amount (Millions)	\$418.1	\$72.4	\$27.7	\$287.3	\$26.7	\$4.0
Percent	100 %	17.3 %	6.6 %	68.7 %	6.4 %	1.0 %
Average Tax Rate (dollars per \$1,000 full value)	\$ 20.32*	\$ 3.52	\$ 1.35	\$ 13.96	\$ 1.30	\$ .20

\*General property tax relief to property owners in towns amounted to about \$32 million in 1975, reducing the *actual* tax rate to an average of \$18.76 per \$1,000 full value.

Source: Wisconsin Department of Revenue and Wisconsin Board of Vocational Technical and Adult Education.



# Project Respect

Does it seem that every year it's harder to find a place to hunt? . . . that more and more prime hunting lands are posted? Can something be done? Project Respect may be an answer.

**RON NICOTERA, Wildlife Specialist, Madison**

DNR is vitally concerned with trespass problems and posting. The department has long recognized there never will be enough public land to accommodate all Wisconsin hunters and that most wildlife is produced on private property.

Attempts to compensate for these realities go way back. In 1937 a program to lease private lands was undertaken. By 1959 there were 315,000 leased acres open to hunting. Since then, however, it's been all downhill. Today only 155,000 acres is under lease. Overcrowding is the major reason.

In 1975 DNR conducted a poll of farmers in Brown, Green, Iowa, Racine and Jefferson Counties. The poll showed that most landowners will allow hunting if permission is asked. But they want to know *WHO* is on their land.

The major reason more and more land is posted is that *some* hunters trespass and use private lands at will without anyone's permission. This causes anger and frustration among landowners. They post. Pressure on remaining private lands increases. The problem multiplies.

Hunters are reluctant to ask permission because they don't know who or where to ask or because they fear a refusal. The answer is to identify landowners receptive to hunting when permission is asked and then link them up with the hunter.

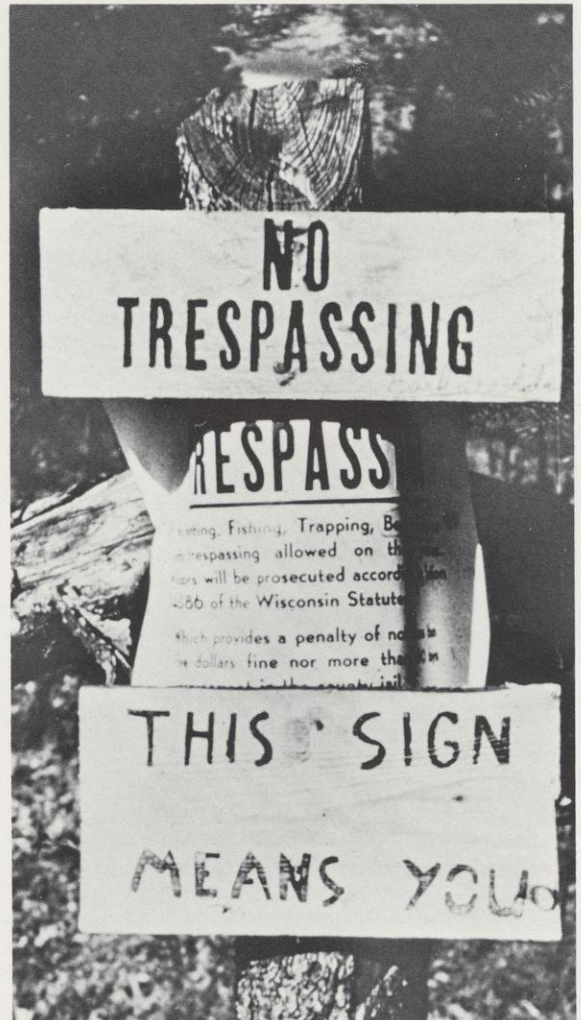
To do this DNR has embarked on a program that will:

1. Encourage hunters to ask permission.
2. Assist landowners in controlling hunters on their property by providing signs and permit blanks.
3. Identify receptive private landowners who will allow respectful hunters on their lands.

Here's how it works—

**The Hunter**—Asks for permission to hunt on Project Respect farms. Hunters can identify the cooperating landowner by the large identification sign. They must ask for permission and will usually be issued a written permit. Hunters should recognize that due to certain circumstances such as crop harvesting or too many hunters, they will not always receive permission.

- Gets a written permit.
- Abides by rules on the permit.



**The Landowner**—signs an agreement with the Department allowing hunting by written permit.

- Posts signs on his property (which are provided).
- Issues a written permit (also provided) to the hunter. May control the number of hunters.
- Receives a free wildlife habitat plan and can get free trees and shrubs to carry out the plan.
- Receives up to 500 free trees or shrubs for habitat development. On request.

The landowner decides how many may hunt and where they can go. Some days the landowner may choose not to allow any hunting at all.



**The Department**—Arranges for the written agreement.

- Provides all necessary signs and permits.
- Erects the Identification sign.
- Provides wildlife consulting services, trees and shrubs.

DNR will sign up landowners and provide necessary materials as outlined. A department representative will contact the landowner periodically to check on the program's progress and help with any problems.

Project Respect will begin in 1977 as a pilot program in Walworth, Brown and Iowa Counties. These counties were picked for the tryout because of differences in population, agricultural practices, vegetation and terrain.

After two years the program will be evaluated.

Hopefully, Project Respect will bring hunters and landowners together in a spirit of friendship and cooperation.

If it works, Project Respect will be expanded throughout Wisconsin. Landowner signup is through local wildlife managers or the DNR Bureau of Wildlife Management. Interested landowners should write: Department of Natural Resources, Project Respect, P.O. Box 7921, Madison, Wisconsin 53707.

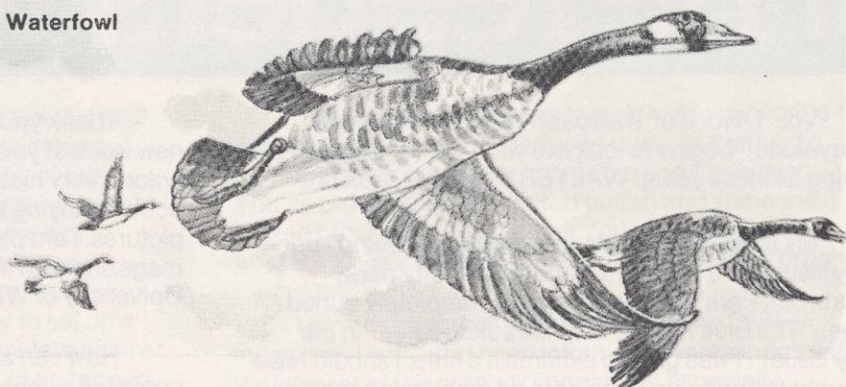
Drawing reprinted by courtesy of the artist, Kathy Flynn, 213 Cimarron Road, Apple Valley, MN 55124.



The first farmer in Wisconsin to open land to hunting under Project Respect was Sherwood Carlson. Carlson owns 640 acres in Iowa County. He and Hollandale rabbit hunter Jim Hendrickson admire the sign.



#### Waterfowl

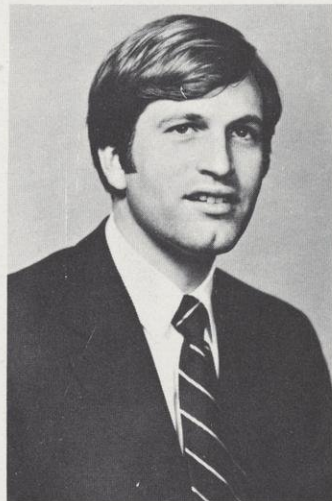


Sportsmen and conservationists pay over \$15 million a year to fund research and acquire vital waterfowl habitat. To learn more about America's wildlife visit a National Hunting and Fishing Day program in your community.

**NATIONAL HUNTING and FISHING DAY September 24, 1977**



# From the board



Chairman Thomas P. Fox

The Natural Resources Board has tightened up protection of public rights in surface waters. In response to heavy demand for permits to irrigate because of the recent drought (requests pending as of July 1 numbered 223 compared to only about 250 issued in the past 42 years) the Board adopted emergency administrative rules regulating diversions from surface waters.

The rules recognize the right of riparian property owners to use the water but protect navigation, fish habitat, water quality and related public rights by identifying amounts needed for various purposes. Only the surplus can be used by irrigators and others.

The Board approved buying 4,900 acres to be added to the Northern Highland State Forest in Vilas and Iron counties. The purchase was made from the Commissioners of Public Lands at a cost of \$441,000. A significant acquisition, it will help implement the master plan for Northern Highland which was developed after a good deal of public participation.

The Board also adopted rule changes for 1977 hunting and trapping and for the 1978 fishing season.

One of the most significant changes in hunting rules was the deer quota of 39,725 animals set for the 1977 season. This is only about 10% lower than in 1976 to adjust for differences in local population. The continued high variable quota underlines the fact that

Wisconsin enjoys one of the strongest deer herds in the country.

An important revision in the 1978 fishing rules provides for identical opening dates, bag and size limits on Michigan-Wisconsin boundary waters. This should result in less confusion and fewer inadvertent violations on these waters.

After many months of discussion, the Board has proposed a change in the deer damage law. Action by the legislature will be necessary to implement it. The proposal gives both the Department and those experiencing crop damage more flexibility in procedures used to deal with the problem. Under it, claimants would have to allow hunters on their lands but, to prevent overcrowding, could limit numbers (now unlimited) by agreement with DNR. The Board views this as another step toward resolving conflicts between public recreational pursuits and private landowners.

The tradition of holding summer Board meetings outside of Madison continued. The June meeting was in Wausau, July in Menomonie and August at Marinette. Purpose is to give citizens in various localities convenient access to the Board to discuss problems and to give Board members first hand exposure to local projects and programs.

# Editorial: Save a bundle

The new federal Safe Drinking Water Act took effect last June. In Wisconsin it could cost a bundle to administer and enforce, or a little. All depends:

On whether the federal government recognizes Wisconsin's long-time preventive system for supplying citizens with bountiful amounts of good, safe drinking water.

Right now the federal rules for control don't completely jibe with Wisconsin's.

The federal plan, as put together by the Environmental Protection Agency (EPA), is based on tests which are required for various contaminants at specified intervals. Tests must be made for coliform bacteria, turbidity, nitrate, arsenic, heavy metals like lead and mercury and various pesticides and herbicides. This method is very similar to one that's been used in Wisconsin many years to insure safe water in about 700

municipalities where 70% of the state's population live. The main difference regarding these so called "community" systems is that federal rules broaden the coverage to include another 800 smaller systems—trailer courts, condominiums or other places that have 15 service connections or 25 residents the year round.

So far, no problem!

However, by 1979 EPA wants to require similar testing of another 15,000 "noncommunity" public water supply systems in Wisconsin. These are such places as gas stations, restaurants, resorts and taverns that have their own wells.

They're the problem. Not because they have unsafe water! Exactly the opposite—because Wisconsin's very stringent well construction, plumbing and health codes guarantee, as adequately as anything can, that the water in these noncommunity systems is indeed safe.

The EPA district office in Chicago agrees. But the Wisconsin system for preventing contamination is not specifically written into the federal rules as an acceptable method. Only the testing is. Setting up a whole new system to do it the federal way would cost about \$1-million per year in Wisconsin. And it's not necessary.

Properly, the Wisconsin Natural Resources Board has refused to spend the money.

Negotiations are underway. Washington is the question mark.

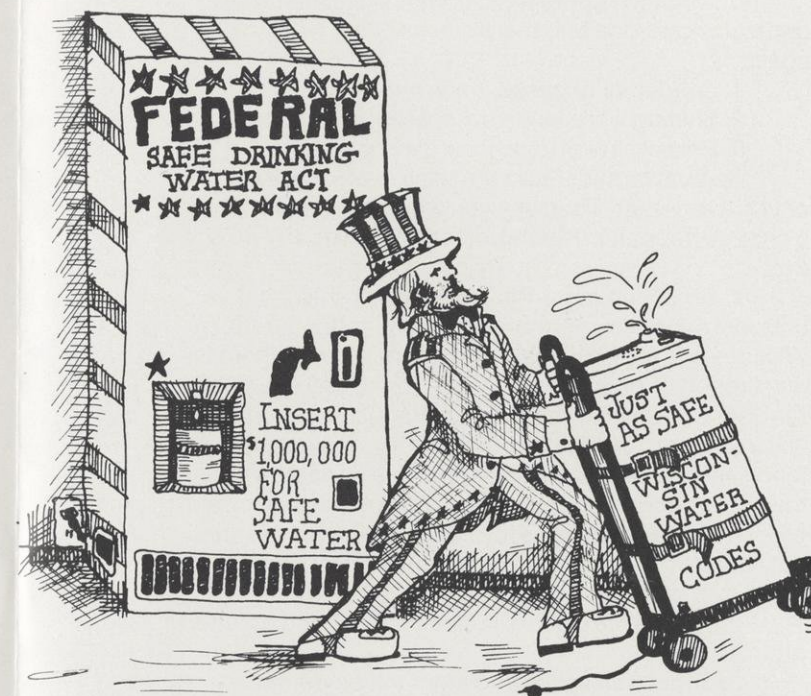
Meantime, the Board and department are writing a new Safe Drinking Water code for Wisconsin.

Citizens are having their say on the proposed rules at public hearings right now. Legislative review should be completed in a couple of months. Then they'll be submitted to EPA and Wisconsin will have "primacy" in administering and enforcing the federal law.

However, the crunch comes in 1979 when noncommunity testing will be required. If EPA doesn't accept the Wisconsin system by then, Wisconsin will give up primary responsibility for administration and enforcement and EPA will do the job themselves. It'll cost \$1-million in somebody's money (yours). This is a message to EPA.

Let's save that bundle!

J. Wolfred Taylor



# The readers write

Readers are invited to express opinions on published articles. Letters will be edited for clarity and conciseness and published at the discretion of the magazine. Please include name and address. Excerpts may be used in some instances. "Letters to editor" should be addressed to Wisconsin Natural Resources magazine, Box 7921, Madison, Wisconsin 53707.

Vol. 1, No. 3 of *Wisconsin Natural Resources* (May-June) begins to look like what we've dreamed of having all these years! **WALTER SCOTT, Madison.**

My wife and I were quite pleased on seeing your May issue. As a completely manicured city park, Estabrook Park's history is almost completely buried (see: "The Blue Hole of the Milwaukee River" in the May issue). I was glad to exhume it a little. I should have brought the write-up up to date by mentioning that the old west side quarry has been completely filled and now is the parking lot for UW-Milwaukee. **PETER TOEPFER, Milwaukee.**

Thank you so much for sending the copy of the new issue of your magazine (May/June). I think the color is very nice and I greatly approve of the layout and accompanying text you arranged to accommodate my pictures. I am pleased to have had this place in the magazine. **JOHN WEAVER, retiring President, University of Wisconsin.**

How can a retired person afford such a price for 6 copies of a very small magazine? You must have hired a bunch of young college graduates at a good salary to put on such a program of inflation! This magazine is the one thing that gripes me about DNR. I also think they do a lot of good. **VIC PRESTON, Waupaca.**

I read with great interest the article in Vol. 1, No. 2 concerning mining in Wisconsin. Having just moved from Montana, a state undergoing the agony of rapid expansion in coal mining, I have great sympathy for the struggles expressed in your article. One aspect of mining rarely addressed is the plight of those—our grandchildren—down the road who have to face the end of the ore. How about using tax money to set up a trust fund for those people? It would accumulate against that foreseeable future at which time it could be tapped. **CHARLES BRADLEY, Baraboo.**

The best way to save money is not to subscribe to your stupid magazine at reduced rates, but rather to abolish your entire Department. We don't need you. You've grown too big—far too bullish and someone should bring you down to size. You could start with abolishing your bulletin! **ELDON FLANAGAN, Tomah.**

I am not happy with the content of the DNR magazine. I want and need information more in line with the interest of the outdoor sportsman, especially bowhunting, fishing, camping and hiking. The rest is only propaganda as far as I am concerned. **HARRY GUNDERSON, Milwaukee.**



# Rules of the hunt

Learning the rules is **every** hunter's responsibility. Study them. There's a reason for every one. Ask questions. Keep the sport enjoyable. Don't give it a bad name.

DAVID L. GJESTSON, *Wildlife Specialist, Madison*

Each year, the names change but the story is the same.

The conservation warden informs a hunter a rule has just been violated. The hunter responds, "I didn't know that was against the law!"

The warden shows the hunter the rule in the regulations pamphlet.

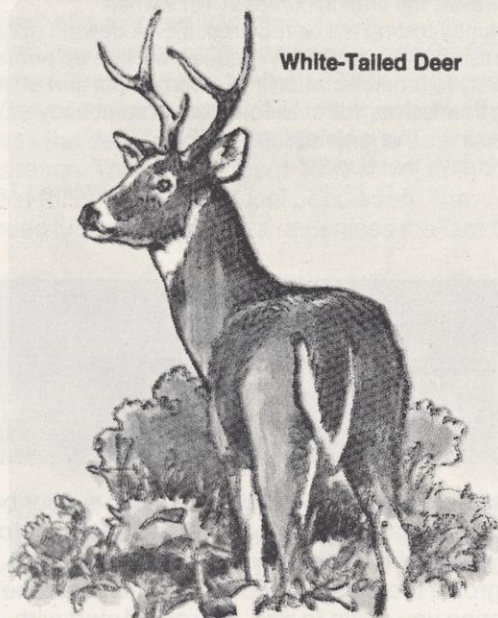
"I read the pamphlet but I sure didn't see that one!"

"I didn't know it applied here!"

"I thought it meant something else!"

"You've got to be a lawyer. . ."

You don't need a law degree to obey the rules of the hunt! But you do need to read and understand them. Many hunters don't and that's the first mistake. Some rules *are* hard to understand. DNR urges hunters to contact the local conservation warden when they have a question.



White-Tailed Deer

**Then:** In 1900, an official survey estimated less than 500,000 white-tailed deer in the nation.

**Now:** Today there are about 12,000,000—thanks in major part to the more than \$250 million that sportsmen pay for conservation each year. To learn more about America's wildlife visit a National Hunting and Fishing Day program in your community.

**NATIONAL HUNTING and FISHING DAY**  
**September 24, 1977**

Most often a close review of the current pamphlet will suffice. While not complete it covers all important regulations as clearly and precisely as possible. New or often misunderstood rules are presented in **bold type** for emphasis. This year there'll be one on road hunting plus some others.

Unfortunately, the most common violations are general knowledge and there's no excuse. Here they are again:

1. Loaded or uncased firearm in a vehicle.
2. Shining while in the possession of firearms.
3. Possession of untagged deer or bear.

Be forewarned! Read the rules over, cover to cover, every year. That way you won't get caught when a change happens. **The important ones for 1977-78 are:**

1. Road hunting—While hunting, it shall be unlawful except by permittees under Section 29.09 (a), Wisconsin Statutes (disabled persons), to discharge any firearm or bow and arrow from or across any public road surfaced with concrete or blacktop or to hunt within 50 feet from the centerline of such roads or to the fenceline, whichever distance is shorter. The new rule means, among other things that road hunting for ruffed grouse on the blacktop is forbidden. Public roads are defined as those roads shown on the official county highway map.

2. Waukesha County is closed to hunting of ruffed grouse.

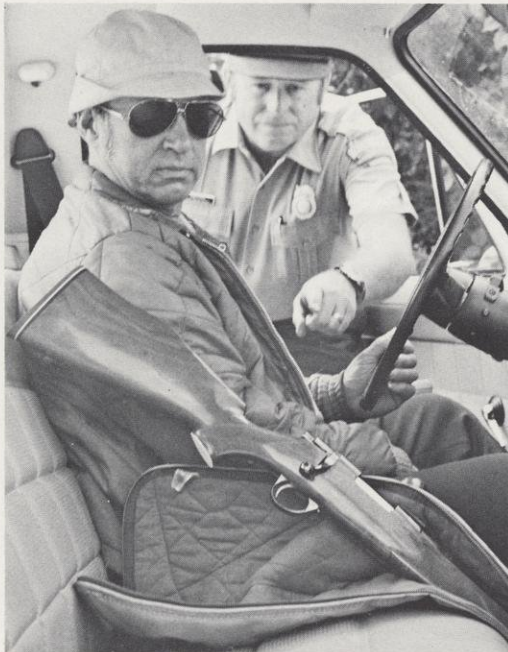
3. The special guns and ammunition permit (M-40) which applied to 39 northern counties between June 1 and December 31 is no longer required.

4. Deer Management Units 59B and 60 have changed from Zone B 1 (two day either sex, seven day buck) to Zone A (nine day buck plus quotas).

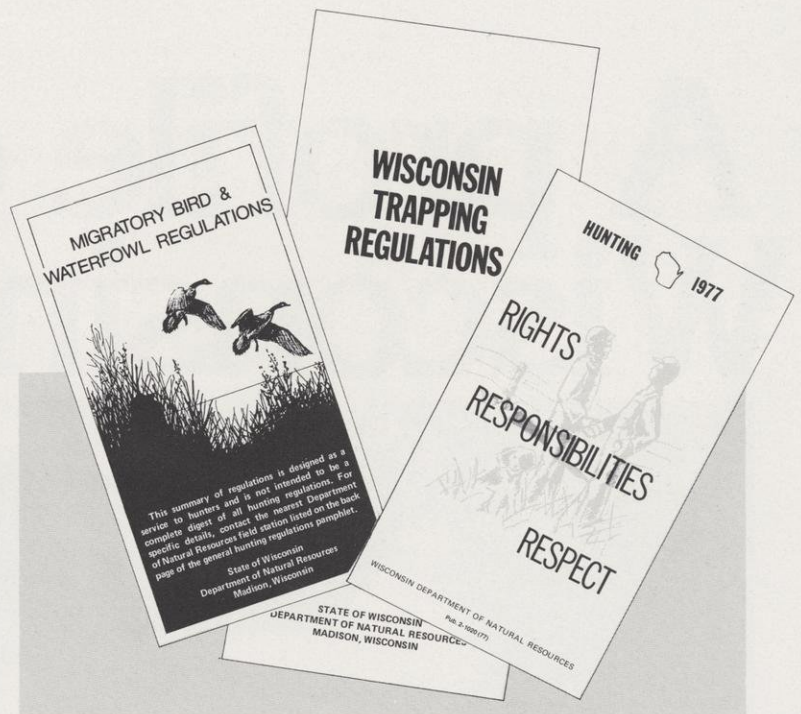
5. Deer Management Unit 70E in Columbia County has changed from "buck plus quota" to "three day either sex, six day buck season."

6. All islands off Door County are now within Deer Management Unit 81.





The most common hunting violation.



## Wisconsin's 1977-78 Hunting Seasons

Species	Dates	Outlook
Woodcock (Statewide)	Sept. 17-Nov. 20	Stable
Ruffed grouse		
Southwestern Zone	Oct. 1-Jan. 31	Improved
Rest of State	Oct. 1-Dec. 31	
Sharptail grouse		
Northern Zone	Oct. 1-Oct. 23	Low/Stable
Pheasant (Statewide)	Oct. 29-Dec. 11	Slight Improvement
Hungarian partridge		
Southeastern Zone	Oct. 29-Dec. 11	Good/Stable
Bobwhite quail		
Southwestern Zone	Oct. 29-Nov. 11	Improved
Gray and Fox Squirrel (Statewide)	Oct. 1-Jan. 31	Remains Excellent
Cottontail Rabbit		
Northern Zone	Oct. 1-Jan. 31	Remains Excellent
Southern Zone	Oct. 29-Jan. 31	
Jackrabbit		
Statewide, except closed in Clark, Lincoln, Marathon, Taylor and Wood Counties	Oct. 1-Oct. 31	Low/Stable
Snowshoe hare (Statewide)	All year	Remains Excellent
Raccoon		
Northern Zone	Oct. 1-Jan. 31	Stable
Southern Zone	Oct. 15-Jan. 31	
Bobcat (Statewide)	Oct. 15-Feb. 28	Low/Stable
Fox (Statewide)	Oct. 15-Feb. 28	Low/Stable
Bear (gun and bow)		
North of Highway 29	Sept. 10-Sept. 25	Good/Stable
Bear (bow and arrow) Statewide	Sept. 17-Nov. 13	
Deer (bow and arrow) Statewide	Sept. 17-Nov. 13	Very Good/Stable
	Dec. 3-Dec. 31	
Deer (gun)		
General (Some agricultural areas have shorter either-sex or buck-only seasons)	Nov. 19-Nov. 27	Very Good/Stable



# A profile of Wisconsin lakes



The 250-acre Murphy Flowage near Birchwood in Rusk County.

DNR recently completed a county by county survey of Badger State surface waters. This once over lightly look at the data should encourage you to look further.

**BETTY LES and JEANETTE POLKOWSKI, Fish Management Bureau, Madison**

Everyone knows Wisconsin has a lot of lakes, and most of us have fished or boated on a number of them. But how much do we really know about them?

Take names, for example. Have you ever heard of Pork-and-Beans Lake, or Ace-in-the-Hole Lake? Or how about Kee-Nong-Ga-Mong Lake, Pea-Soup-Bayou or Chicken-Foot Lake? These are actual names, just a few of many unusual ones.

Not all names are unique, though. Most depict some characteristic of the lake—its setting, color, location or most abundant fish. And many share the same name. For example, there are 107 Mud Lakes, 79 Bass Lakes, 61 Twin Lakes, 57 Long Lakes and 50 Lost Lakes. Spring Lake, Pine Lake and Clear Lake are also popular names. Besides the fact that lakes share common characteristics, the sheer number to be named causes repetition. There are 14,949 lakes in Wisconsin. How many original names could you think of?

Actually, less than half even have names! Many unnamed ones are very small, occur in remote areas, and usually have no game fish. They remain unnamed because people have no need to refer to them.

The data on lake names is a spinoff of a recently-completed, 15-year inventory of Wisconsin surface waters. Conducted by the Department of Natural Resources Fish Management Bureau, the

## WISCONSIN'S LARGEST LAKES

Name	Acres
1. Lake Winnebago	137,708
2. Petenwell Lake	23,040
3. Castle Rock Lake	16,640
4. Lake Chippewa	15,300
5. Lake Poygan	14,102
6. Turtle-Flambeau Flowage	13,545
7. Lake Koshkonong	10,400
8. Lake Mendota	9,730
9. Lake Wisconsin	9,000
10. Lake Butte des Morts	8,857
11. Big Green Lake	7,346
12. Big Eau Pleine Reservoir	6,830
13. Lake Du Bay	6,653
14. Beaver Dam Lake	6,542
15. Lake Wissota	6,300
16. Shawano Lake	6,178
17. Lake Puckaway	5,433
18. Lake Geneva	5,262
19. Willow Flowage	5,135
20. Lac Court Oreilles	5,039



inventory included all waters—large and small. Limnology data, fishery resources, shoreline development and access to individual waters are included.

Here's what this statewide profile reveals: Wisconsin has 5,695 named lakes and 9,254 unnamed. They have a total surface area of 957,491 acres and over 15,500 miles of shoreline. The highest concentration of lakes occurs in northwestern and north central counties, although the largest lakes are in the southern half of the state including Lake Winnebago, the biggest of all, 137,708 acres. The southwest and west central counties have few, if any, natural lakes.

Most people choose the big ones for fishing and boating. Numberwise, however, these are a minority. Fewer than 1% of Wisconsin lakes are 1,000 acres or larger. Two-thirds of the named lakes and almost all unnamed lakes are less than 50 acres.

Deepest is Big Green Lake in Green Lake County. It is 236 feet deep and covers 7,346 surface acres. Most lakes over 100 feet deep are large, but a number of small lakes are also surprisingly deep. These are glacial potholes, characterized by clear water and sandy bottoms. Only 3% of Wisconsin lakes are 50 feet or deeper. Close to 60% of the named lakes and over 90% of the unnamed ones are less than 20 feet deep.

Not all are natural lakes. Statewide, 92% are

natural, where the water level is not maintained by a man-made dam. Although man-made lakes, or impoundments, are usually small, there are 21 over 2,000 acres. Eleven are among the 20 largest lakes in the state. Many were built on big river systems for industrial use or flood control, although they are also used for recreation. Impoundments are called flowages, reservoirs, ponds or millponds and some are referred to as lakes. Many are little unnamed farm ponds.

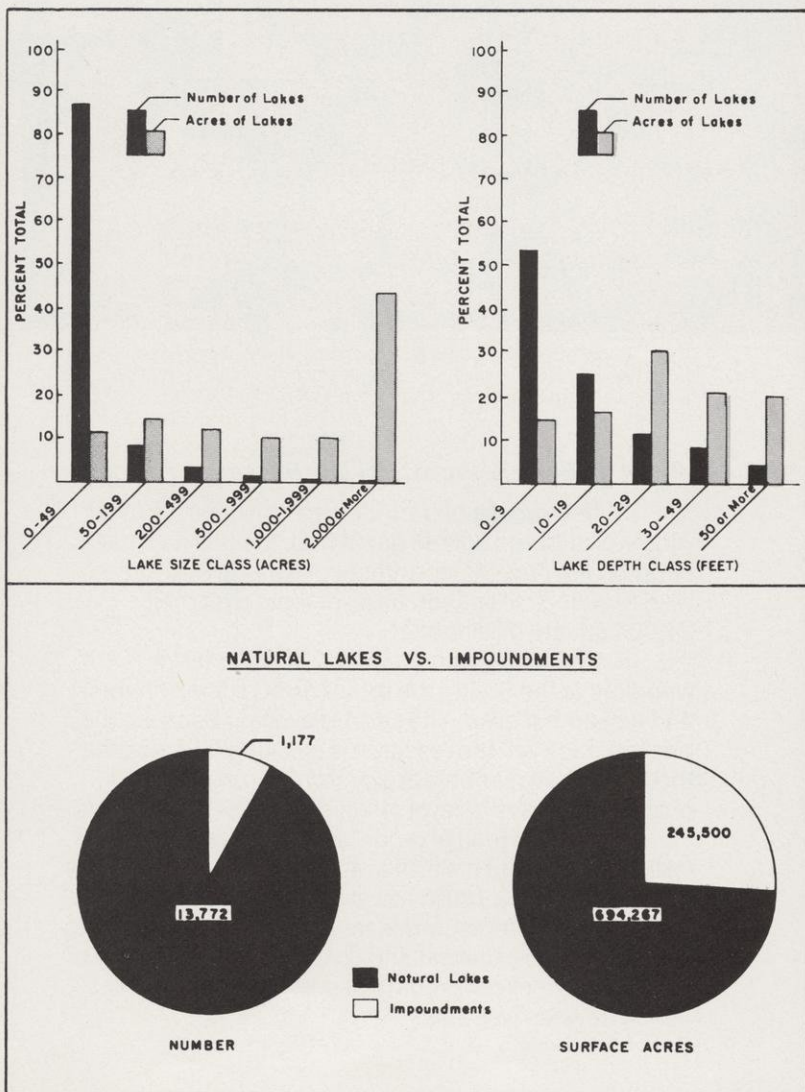
This is just an introduction to Wisconsin lakes. For more information take a look at DNR's Wisconsin Lakes Bulletin, which lists all named and major unnamed lakes, plus material on the fishery and other characteristics. There is also a series of Surface Water Reports by individual county. You can find these in state document depository libraries or through the DNR.

Before venturing forth investigate. The more you know, the greater the enjoyment.

Photos by: Dean Tvedt



Connors Lake in southeastern Sawyer County.





# Mixed aspen= more ruffed grouse

Research has confirmed that aspen is essential for ruffed grouse and stands of different ages arranged in a quiltwork are better than anything. DNR managers are working to put the design on the ground.



Young, dense aspen is good grouse habitat. It provides protective cover and nearby older aspen furnish winter food. This healthy, fast-growing forest is the byproduct of clearcutting.

**JOHN KUBISIAK, Forest Wildlife Research, Babcock**

Ruffed grouse or partridge are Wisconsin's most widely distributed upland game bird. It takes no small effort on the part of Department of Natural Resources' wildlife biologists to keep track of them over their 24,000 square mile habitat.

From the tree country of the North to farm woodlots of the South, the grouse is pursued by hunter and researcher alike. The sport is exciting because the bird is explosive. The research is challenging, because though grouse numbers are cyclical, biologists are puzzling out ways to level off roller-coaster populations.

The ruffed grouse range is wide—more than 15.3 million acres—but its preferred habitat is young forests mixed with dense, brushy swales.

An aspen forest with a thorough diversity of young and old ages is excellent and gives partridge a variety of foods, security from predators, and protective cover during adverse weather.

A grouse management program, sponsored by DNR, keeps track of populations and harvest and improves and maintains habitat.

Estimates of grouse numbers are based on six different annual surveys carried out each season, year-round. DNR field people systematically count grouse broods in summer. Harvest is calculated based on a questionnaire to a random sample of sportsmen. Winter abundance is estimated by wildlife managers who count grouse roosts on random plots and through rural resident inquiries. In the spring, roadside drumming counts and study area censuses provide an index.

The roadside drumming count appears to be best for finding year-to-year changes in grouse populations. DNR fieldpeople record the number of drums heard along designated routes under standard listening conditions.

"Drumming" is the spring ritual of the male grouse to establish a territory and announce his presence to other males while attracting one or more of the opposite sex. The male beats his wings against the air while standing on a log or other elevated object. The result is a hollow drumroll which can be heard a quarter mile or more. Drumming peaks in late April or early May, often





continues into June, and is resumed with less vigor in fall when young males begin to establish territories.

Early grouse investigations involved food habits and methods of trapping, censusing and determining sex and age. The importance of forest types, sex and age compositions and the relation of weather, parasitic diseases and hunting to grouse populations were also studied. More recent research has concentrated on learning more about habitat and the effects of its manipulation. There is one long-term study at the Sandhill Wildlife Area in central Wisconsin and another at the Stone Lake Experimental Area in the north.

Sandhill is located in southwestern Wood County and is dominated by scrub oak and aspen (popple) forests. Its primary goal is wildlife production. Commercial timber sales are used as a tool to improve habitat for deer, woodcock and ruffed grouse. Management at Sandhill has been evaluated since 1968. Grouse populations are censused each spring on 3,400 acres, and hunting pressure and success is surveyed each fall to determine habitat use and annual changes in numbers.

Wood production, not wildlife, is the primary goal at Stone Lake in the Northern Highland-American Legion State Forest. Managed timberlands produce ruffed grouse as a byproduct, but the potential for increasing populations within these forests has been largely untested. To test it a coordinated management plan was developed and designed to increase production of both ruffed grouse and pulpwood. The experimental area's 3,900-acre forest is typical of northern Wisconsin and grouse habitat management there has also been evaluated since 1968.



A male ruffed grouse busy at his drumming ritual. Wildlife managers estimate relative grouse abundance using a roadside drumming transect.

The big thing for ruffed grouse is to maintain an adequate blend of forest types and age classes. Since aspen forest is the best habitat, essential for huntable populations in both northern and central Wisconsin, land managers and foresters work hard to insure its maintenance rather than allowing conversion to a less productive cover type. At first, shearing blades mounted on bulldozers were used to fell inferior trees left after timber sales. Later, forest and wildlife managers developed a system to pay loggers for cutting these unmerchantable trees and this system is now widely used to produce the lush growth of young aspen needed for ruffed grouse.

Aspen will produce even more partridge when young and old stands are arranged in a quiltwork or mixed-up pattern where the new growth used for cover is next to the old trees used for food. Managers are studying practical ways to intersperse aspen ages. A technique is being evaluated at both Sandhill and Stone Lake. Some managers are already practicing this interspersation on state wildlife areas and others are planning it.

Seeding forest roads with clover is another widespread ruffed grouse management practice. Birds are attracted to clover, strawberries and other plants that grow where the trail lets in sunlight. To maintain these desirable plants, trails are usually mowed and gated against vehicle traffic.

Wisconsin's wood-using industries will perpetuate the aspen forest. If wildlife production and the aesthetic qualities of smaller clearcuts become better recognized, the mixture of young and old aspen stands that should result will mean higher quality grouse hunting in the future.



# Book Review

## *Windcatchers: American Windmills of Yesterday, Today and Tomorrow, by Volta Torrey*

Mr. Torrey is a past president of the National Association of Science Writers, editor, reporter and contributor to such magazines as Atlantic Monthly, Saturday Review and Science Digest.

His book gives an account of windmill development abroad then concentrates on the USA. Dozens of American windmills and their history are described from old farm windmills and home built ones to the sophisticated generators erected by NASA.

There are also references for do-it-yourselfers.

Readers will be surprised to learn that one of the most popular windmills in the nation in the late 1800's and early 1900's was manufactured at Beloit. Called the "Eclipse" it used to be a familiar sight along tracks of many great railroads including the Northwestern, Burlington, Illinois Central, Atchison, Topeka and Santa Fe and others. Early day windmills were also manufactured in Waupun and Racine.

Today, 100 years later Wisconsin is part of the continuing history. There is an account of the Wisconsin Windworkers near Mukwonago who build modern machines and of Congressman Henry Reuss and his interest in wind generators.

The energy shortage makes one wonder at the demise of these spectacular machines and look forward to seeing them again on the skyline.

Publisher is the The Stephen Greene Press, Brattleboro, VT 05301. Cloth \$12.95

## *Wisconsin Through 5 Billion Years of Change, by Byron Crowns;* Photos by Ralph B. Boyer

The author, Byron Crowns, is a Wisconsin Rapids attorney and amateur rockhound and archaeologist. His book, billed as a geologic history of Wisconsin for the layman, reflects these interests. It contains much material on Wisconsin minerals, their identification and location, plus excellent color photographs by Mr. Boyer to help with identification.

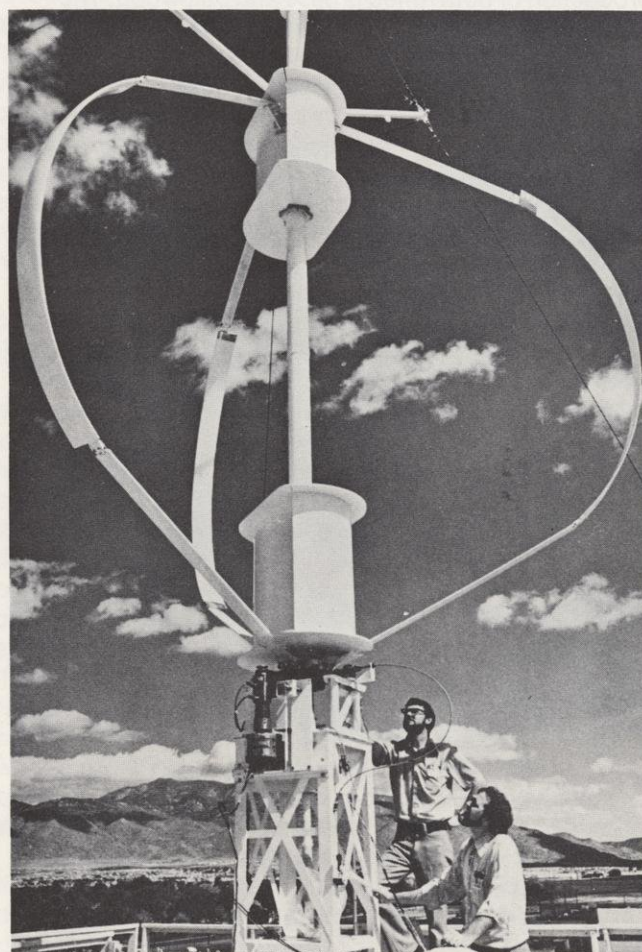
A great deal of the book is a compilation of information previously published in booklets and pamphlets, much of it by DNR.

The author formed his own company to publish and market his book and says he will donate any net proceeds to the Heart of Wisconsin Gem and Mineral Society.

Publisher is Wisconsin Earth Science Center, 430 E. Grand Ave., Wisconsin Rapids, WI 54494. Hardcover \$19.95 plus tax.



An old advertisement for the Eclipse Windmill Co. of Beloit, makers of water pump windmills that were known all over America in the last century.



An experimental vertical axis—or eggbeater-type wind generator with airfoil blades, developed at Sandia Laboratories in New Mexico.



# The wild goose: saint or sinner

People congestion, crop depredations, the threat of disease in an overcrowded flock and inequitable hunter harvest have been some of the side effects of the spectacular 20 year goose management success at Horicon. Attempts to solve the problems last season ran into difficulty, but a bevy of public hearings since then helped. Things should be better this fall.



**Jim Kleinhans, DNR Bureau of Information and Education, Madison**

Few sights stir the imagination more than the flight of the wild goose.

Each fall the majestic Canada goose mysteriously finds its way from the Hudson Bay breeding grounds to the wintering areas of lower Illinois and points south. In spring, the route reverses.

As far back as a Mississippi flyway flock existed, these marvelous birds stretched their ragged "V's" across the Wisconsin sky each year. Some stopped but most flew on.

That was the rule. Until Horicon. There new management techniques transformed the Horicon

Marsh and general environs in east-central Wisconsin into a wild goose mecca.

It had once been drained and farmed, but now the 30,000-acre marsh is a protected wetland, two-thirds Federal refuge and one-third State public hunting ground. Although once famous for duck reproduction (for which it was acquired and reflooded), since the early 1950's this emphasis changed and it has become a major way station for Canada geese, offering food, sanctuary and water.

Only a few geese stopped at first. And they were a welcome sight. For hunters. For sightseers. For business.

What a success story! From zero geese in 1940 to





peak populations in excess of 250,000 in recent years. But success brought problems.

As more and more birds winged in, Horicon management changed. It became an exercise in relocation. Satellite areas were established in east-central Wisconsin in an attempt to take pressure off the marsh.

But the goose population continued to soar and so did problems, especially in the fall.

When geese outgrew the marsh's food supply they spread into farm fields. They found the corn Horicon area farmers had sown and nurtured. The geese harvested it and the farmers were angry.

With the population boom came the danger of disease. Wildlife scientists said it was not a question of "if" but "when" a major and fatal outbreak might occur.

Watching geese is popular and traffic congestion grew. One Dodge County officer counted 10,000 vehicles on Highway 49 during a sunny Sunday afternoon in October. Complicating things, the congestion spilled onto inadequate town roads.

As problems built, so did pressure for their resolution.

"Do something!" was the appeal to both State and Federal governments. In early 1976, the Wisconsin Department of Natural Resources (DNR) and the U. S. Fish and Wildlife Service (FWS) responded to this appeal and embarked on a program to accomplish the following goals by 1980: (1) Cut in half the total number of days geese spend in east-central Wisconsin; (2) Stabilize fall goose concentrations at 100,000; (3) Encourage all but 5 % of the geese to move south by Dec. 5, and (4) Restore a wildlife balance (including ducks) to the marsh.

After a court challenge failed, the five-year program began last fall. Simply stated, its intent is to make east-central Wisconsin less attractive to so many geese by limiting food, sanctuary and water, the three ingredients needed for comfort and survival.

Crop planting on the marsh ended and land started to revert to the dense nesting cover used by other waterfowl. Crop reductions were instituted on east-central Wisconsin satellite areas to make them less attractive also.

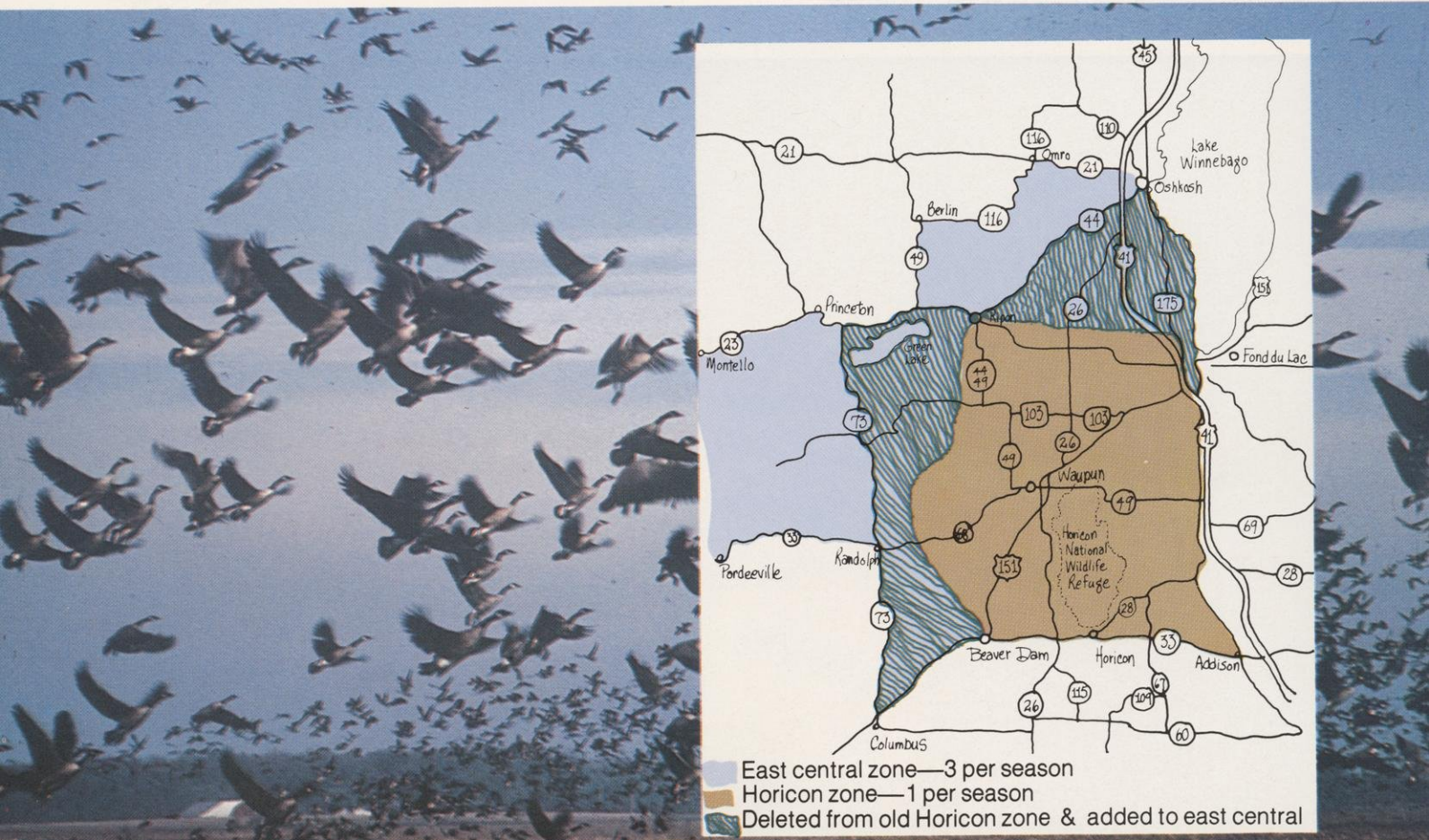
Water levels in the marsh were lowered. This allowed emergent plants to encroach upon former open water areas, thereby shrinking available goose resting sites. Reducing the amount of open water also concentrated geese and made them more susceptible to aircraft and airboat hazing.

Soon after the fall hunting season closed, even before the last goose had left Wisconsin, evaluations of the 1976 program were underway in both state and federal agencies. In December, 1976, wildlife managers and biologists attended a joint DNR-FWS session. In January, 1977, interested individuals and groups were urged to comment at a public meeting.

The comments were critical, constructive, full of deep concern. There was a consensus that 1976 — the year of the drought — was less than a smashing success.

All this analysis pinpointed some of the crucial facts and problems:

First, the number of geese using east-central Wisconsin in 1976 was not significantly different from the average of the previous five years. However, there is evidence that only 40 % of the Mississippi Flyway flock





stopped there. Usually, it's 60%. Whether the cause was the program, the drought or the early and cold winter is speculation.

Second, the water drawdown had some negative effects on the overall plan. Huge mud flats were created which prevented hazing by airboat and provided large amounts of food for the geese. The drawdown, if prolonged would have threatened the long-term ecological balance of the marsh, inviting back plant species such as cattail that could prove detrimental in the future.

Third, goose flight patterns between the marsh and private land were greatly altered. This cut hunter success in the Horicon Zone (lowest reported since 1972), placed additional (unwanted) goose use pressure on the lakes region west of the marsh, and reduced viewing opportunities in the Horicon-Waupun area.

These and other factors produced considerable opposition to the management plan from diverse interests.

With the benefit of public comment and their own analysis, the agencies set out to formulate a better plan for 1977. The goal remained the same — to cut goose use approximately in half by 1980. But the means to that goal changed.

On the interstate level, a Mississippi Flyway Council Committee recommended that feeding in the southern Illinois refuges be stopped beginning in 1977, and that efforts be made to move more birds south from the Illinois and Kentucky bottlenecks "as early as practicable in the fall. . ." That recommendation was adopted by the full Flyway council, representing 14 states from Canada to the Gulf of Mexico.

In addition, a 1977 Wisconsin goose hunting quota of 35,000 was set by the federal government, an increase of 7,000 over 1976. (DNR had asked for 45,000.)

In Wisconsin, probably the most dramatic change this fall is that there will be no water drawdown except on a small federal area north of Old Marsh Road where duck habitat will be reestablished. Also discontinued will be the pheasant-rabbit season on the federal refuge.

Another new management approach this year is two-zone hunting. The size of the old 600,000 acre Horicon Zone will be decreased by about one-third to increase hunting pressure on geese and alleviate some crop depredation. In addition, a new East-Central Zone has been created west and north of the Horicon Zone. The result should be more control over the goose harvest. It was found that altered flight patterns allowed some hunters to shoot upwards of 50 geese, while those in the Horicon Zone were limited to one per season. The new two-zone system will provide a more equitable harvest over a wider area of goose range. It will also put hunting pressure on lakes in Dodge and Green Lake Counties and hopefully move birds off these waters where they are unwelcome.

There will also be better opportunities for goose viewing. State and Federal personnel are meeting monthly with Chamber of Commerce officials in the vicinity of Horicon to map out viewing locations for the public other than along Highway 49.

A farm registration and fee payment system is under discussion. DNR personnel have provided technical assistance to the Horicon Farmers' Alliance in drafting legislation that would establish such a system. Whether it will pass is still uncertain.

Management programs that will continue in 1977 include depredation compensation to local farmers; conversion of the marsh to diverse habitat; intensive disease investigation; and research on Canada goose distribution and migration as it relates to east-central Wisconsin and the flyway.

The 1977 plans were the subject of at least five public meetings and one legislative hearing.

On another front, there is a Mississippi Flyway Council recommendation to reestablish traditional wintering areas of the flock. The Wisconsin Natural Resources Board has committed itself to this goal, providing other states to the south — particularly Illinois and Kentucky — go along, too. That means that unless those states implement different management practices, such as denying the wintering flock food, cover or water, Wisconsin may decide not to go along.

Another Board concern is the federal intention to continue limited mechanical goose hazing in 1977. While it recognizes the need to haze geese out of problems areas — such as farm fields and lakes — the Board objected to the use of hazing on the marsh itself.

It would be nice to be able to say that this year's joint DNR-Fish and Wildlife Service program is "the answer" to east-central Wisconsin's goose problems. But, in a situation as complex as this, "the answer" is sometimes very elusive. And any answer — no matter how meritorious — may not be completely pleasing to all the various special interest groups involved.

What can be said, however, is that the Department of Natural Resources will listen to public comment and constructive criticism, then be as flexible as possible in implementing programs to meet the 1980 goal.

That goal attempts to address concerns of local residents and visitors alike.

It is one of goose reduction that Horicon area people only 25 years ago would have found difficult to understand, if not impossible to believe.

Because everyone knew Horicon would never be that much of a goose marsh.



**JAMES EVRARD, Project manager, Grantsburg**

**JOHN TOEPFER, Wildlife biologist, Grantsburg**

Crex Meadows Wildlife Area in west central Burnett County is a restored prairie-wetland.

It's big like Horicon, and similarly underwent many transitions before DNR management changed it back to the natural treasure it was in the beginning.

The vast Crex marshes were created 10,000 years ago when a lobe of the Wisconsin glacier blocked the St. Croix River, forming ancient Glacial Lake Grantsburg. The word "Crex" was derived from *Carex*, the scientific name for the sedge or marsh grass growing so abundantly there.

The Sioux and Chippewa Indians used Crex as a hunting and food gathering ground, fighting many minor battles over rights to its resources. At that time, the upland vegetation was brush prairie with scattered jack and red pine. It was maintained by fire set by Indians or lightning.

In the late 1840's, surveyors reported the landscape was wet grass marsh and sandy pine barrens. The first white settlers began farming the treeless barrens at that time and loggers arrived in the 1860's. They were attracted by white pine in the moist valleys near the St. Croix River.

By the 1890's, farmers exhausted the limited fertility of the sandy soils and began large scale marsh drainage. The land became important for production of marsh hay and cranberries. Wire grass, a sedge, was harvested there by the Crex Carpet Company in the early 1900's. Baled, it was shipped to St. Paul to be made into carpets and rugs.

Finally, drought and numerous wild fires forced abandonment of the land. By 1930, two-thirds was tax

delinquent. In 1945, the Wisconsin Conservation Department began acquiring it for wetland restoration.

Today, 30 years later, the project is still underway. Slowly, the original prairie-marsh habitat has been reestablished. More than 11,000 acres of previously drained wetland has been reflooded. Thousands of acres are burned annually under controlled conditions to recreate and maintain the original brush prairie. The public now owns 27,000 acres at Crex. Final goal is 30,000.

It has paid off. Wildlife has responded to management in a spectacular fashion. Almost 250 different species of birds have been sighted at Crex, including 13 species of waterfowl that breed in the area. Sharptailed grouse have increased and the prairie chicken appears to have been reestablished after a 28-year absence.

The bald eagle, osprey and cormorant, all endangered species in Wisconsin, now raise young on Crex. Numerous reptiles, mammals and furbearers also reside on the meadows. A cooperative study with the University of Wisconsin uncovered more than 200 species of true prairie plants, resulting in establishment of a 79-acre "prairie scientific area".

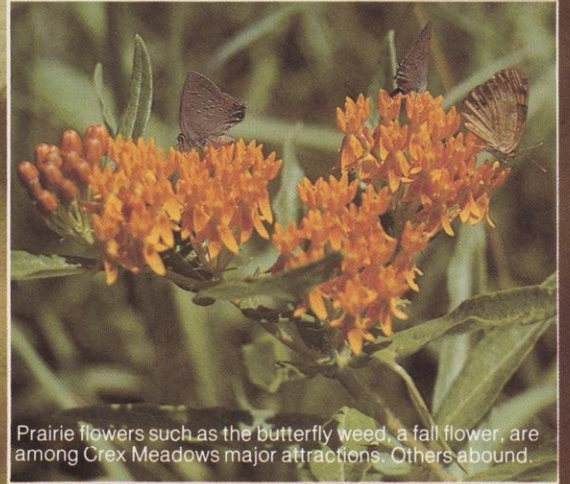
Except for a 2,400-acre refuge all of Crex is open to the public. Nearly 100,000 people from throughout the U.S. visit annually. Almost one-third are hunters, primarily after waterfowl and deer. The remaining 66,000 come to view and enjoy the prairie flowers and wildlife.

All find it to be a natural treasure that was worthy of restoration and you will too when you visit.



# Crex Meadows Wildlife Area





Prairie flowers such as the butterfly weed, a fall flower, are among Crex Meadows major attractions. Others abound.







Crex has two great blue heron rookeries.

The yellowheaded blackbird's hoarse croak is a common spring sound in the cattail marshes.

A controlled burn manages habitat.







# Evening storm

*Reid Bryson, UW-Madison Meteorologist*

*Lightning.*

*Flickering twilights in the west.  
(Must be thirty miles at best.)*

*Closer.*

*Welding up a black cloud mass.  
(Need some rain on my dry grass.)*

*Thunder.*

*Grumbling at the evening hour,  
Working up to greater power.*

*Hear the wind in distant treetops!  
There's a spattering of raindrops.  
Now the downdraft comes in lashes,  
Now the thunder really crashes!  
Birches nearly double bend,  
Oak leaves fly by on the wind.  
Black as hell and bright as day.  
Now the torrent's on its way.  
Sheets of water from the eaves,  
Silver rivulets from leaves.  
Rushing rivers in the gutters—  
Still the thunder booms and stutters.  
Seems to be a little lighter.  
West is now a little brighter.*

*Now it's stopped.  
Still dripping wet.  
But there'll be  
Some more, I bet.*

*Hear it?*

Photo by Ron Gird, UW-Madison Meteorology Dept





Department of Natural Resources  
Box 7191, Madison, Wisc. 53707

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