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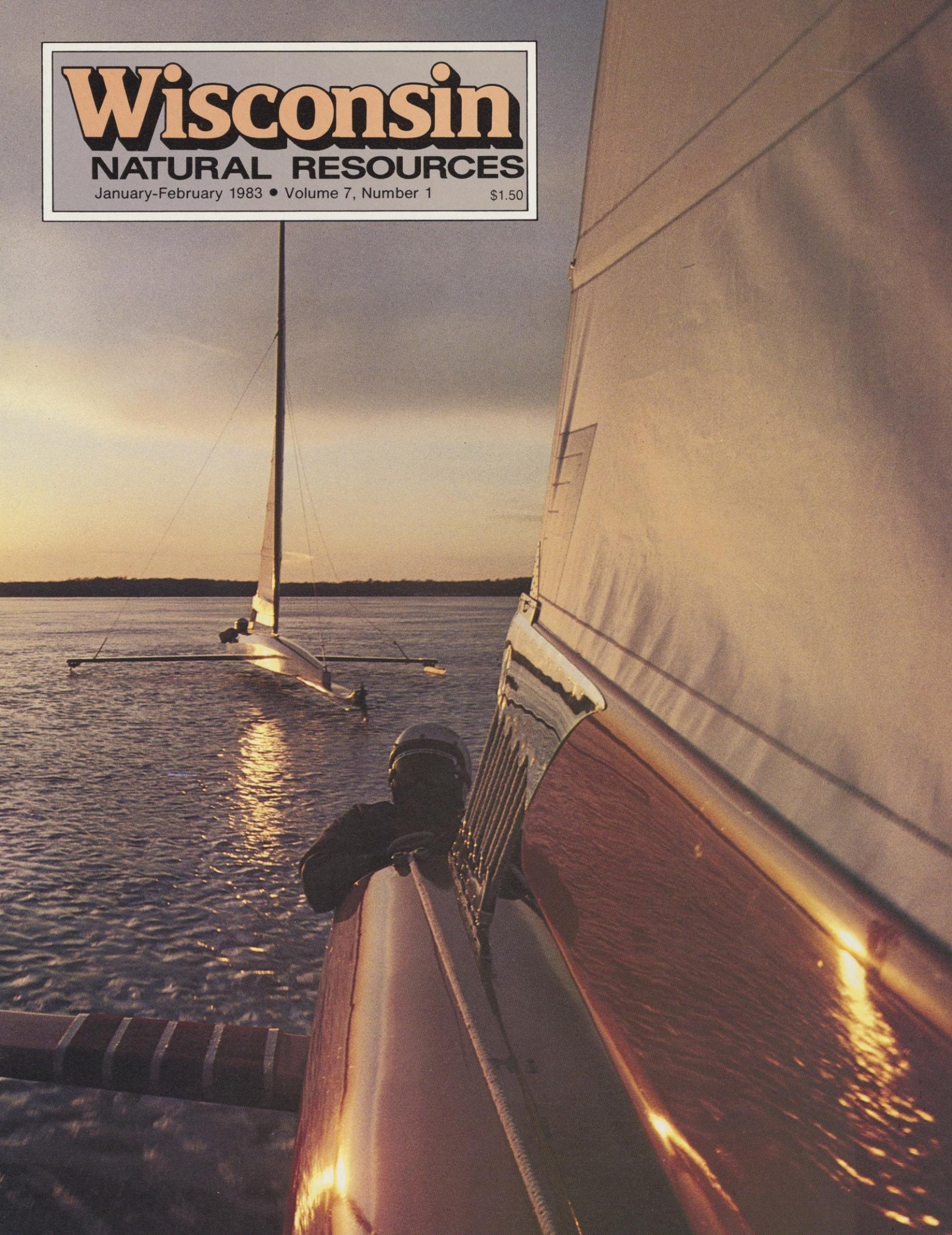

PINE STUMP- A la memoire.

LEROY LINTEREUR

A la memoire is a fine French phrase meaning a recollection, a memory of things past, a remembrance of something vanished. Every old pine stump might well bear this inscription — a memory of a forest that has disappeared. Any person who would deliberately destroy a pine stump is, in my mind, on par with an individual who would whack away at the pillars of Mount Vernon or mar the Acropolis.

In a real sense every one can be considered a historic monument. They bring to mind many things — the tall pines and long vanished animals: cougar, caribou, moose, the Indian tribes who knew this land when it was very young. Human history itself is linked to a succession of forests, a continuing regression that goes back to the glaciers and beyond. The pine stumps are our links with these forests that have vanished and the existing stands that do so much to make this world livable.

We have an idea of the origins of these pine forests. Sometime during the 1400's there were widespread fires in the north that destroyed the then existing cover and seeded in these pines. It is difficult to visualize, but each grey, silent monument was once a shoot of green, hardly distinguishable from any other plant on the forest floor. After some hundreds of years it grew tall and became a shimmering, whistling mass of green.

What is now a stump may once have harbored a mountain lion in its branches or sheltered a herd of elk, or perhaps been nipped by a moose. I know of one stump along the Pine River in Florence County. The prop roots stretch to the stream's edge, and a moccasined toe might have stubbed on it, while the air turned blue in Ojibway.

Every woods is, in a sense, a historical museum that speaks of the past. At the same time each of these links is a vital part of the living present. There is an unbroken chain of existence that stretches far back into infinity, and these stumps are hallmarks in that progression of life. They mark a time when our forests reached a pinnacle of perfection that will not be seen again. Never pass one by without giving it a thought — *a la memoire*, as they say, a recollection of a past still part of our existence.

Photo by Woody Hagge, Box 25, Hazelhurst, WI 54531

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Cover: Iceboats at sunset. Photo courtesy of the Madison Four Lakes Ice Yacht Club.

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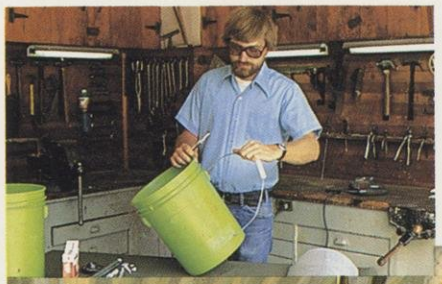
Plastic-pail condos for wood ducks.

Finally, a gismo made of recycled plastic than can make you proud.

WILLIAM S. MEIER, Wildlife Manager, Merrill

Pat Rominski at work building one of the new plastic pails.



At one time, Wisconsin came dangerously close to losing its wood ducks. But dedicated efforts by local and international conservationists in two countries saved these wonderful little waterfowl. And now, a ubiquitous chunk of synthetic modern garbage is carrying the campaign one step further. Plastic, throw-away 20th-Century living has invaded the world of Wisconsin's wood ducks. But ironically, the woodies like it!

The drake wood duck is without equal, the most grandly attired of all our waterfowl. Adjectives like beautiful or gorgeous don't nearly do justice to his splendid, iridescent plumage. The female, too, carries a striking splash of color that makes her stand out from other female ducks.

Even the woody's call is delicate. Where mallards and other ducks emit the traditional raspberry quack, a wood duck has a dainty cr-r-ek, cr-r-ek or whoo-eek, whoo-eek.

Woodies *(Aix sponsa)* are the second most-common native waterfowl in the Wisconsin hunter's bag, after the mallard. But they're odd ducks too. Unlike most others, woodies are cavity-nesters. Rather than stake out a family homestead on the ground, they seek out natural hollows in old trees, standing snags and tall stumps near water.

Woodies breed all across Wisconsin and on both US coasts — primarily in the East but also from central California north to Washington and beyond. Each March they migrate back into the state from the southern US and Mexico to begin the annual search for a nesting site.

They haven't always been able to find one. During the late 19th and early 20th centuries, timber cutting, wetland drainage and sale of its feathers for hats and garments brought the wood duck near extinction. In 1918, both the United States and Canada declared a total closed season which continued until 1941. By then populations had finally increased enough for several states to allow one woodie in the duck hunter's daily bag. Wisconsin followed suit in 1942.

Strict international migratory bird treaties eliminated the threat from feather hunters but loss of nesting-cavity trees and wetlands destruction continued as a threat.

Today, wetland preservation, shoreland zoning and wildlife management have given wood ducks a new beginning. A big boost in that trend was the devel-

Wood ducks. Painting by Martin Murk, courtesy of Wild Wings, Lake City MN 55041

opment of artificial wood-duck nesting-boxes in the 1950s.

These helped fill the gap caused by logging and land clearing and allowed wood ducks to survive within their traditional nesting range.

At first, there were only two types of houses — wood or metal. Eventually, modern, specially manufactured plastic nest-boxes were developed. But these are expensive — approximately $29 each — and even old-fashioned wood or metal boxes cost close to $15 apiece. The rising costs precipitated a search for alternate methods and materials.

Enter the plastic pail!

I built what I think were the first plastic-pail houses in Wisconsin during a project started in 1975 on the George W. Mead Wildlife Area near Stevens Point. A total of 96 were made from discarded five-gallon plastic glue pails bought from a shoe company for 50 cents each.

I erected these prototype houses on trees or on steel pipes along the Little Eau Pleine River at Mead, as well as on three flowages in Lincoln County.

Lo and behold, the wood ducks liked them. Of 18 placed in Lincoln County, woodies nested in two-thirds. At Mead, for 72 houses, use ranged from a quarter to nearly a third. Over the two years I kept track, wood ducks nested in an average of 32% of the plastic-bucket houses. By comparison, the birds used wooden houses slightly more often (36%) and metal houses slightly less (26%).

Clearly, woodies don't much care whether they nest in wood, metal or plastic cavities — they'll use one or the other more or less equally. But plastic houses are cheaper (approximately $7), last longer, and need less maintenance.

And where wood ducks don't like a particular house, other creatures do. Project records show that hooded mergansers, screech owls, swallows, kestrels, and both gray and flying squirrels all moved in at one time or another during the two-year study. On the minus side, starlings sometimes nested in the plastic-pail houses, but seemingly less so, than in either wood or metal.

You can do your part to continue the ongoing effort to aid the wood duck. When woodies return to Wisconsin next March, females will look for a high, dry and warm place to lay eggs. In 28 to 31 days, the eggs will hatch into a peeping brood of 10 to 15 ducklings. Within 24 hours, the young will leave the nest, never to return again. Less than half will survive the hazards of youth to reach maturity in the fall.

The past 30 years have shown that the number of local wood ducks depends on available nesting cavities in an area. Although the cutover has passed and state forests are again maturing, natural cavities alone can't fill the bill. Agriculture, recreational housing, timber stand improvement that removes cull trees and the growing demand for firewood all place stress on wood duck habitat. Woodies still need a hand from people. To help, many Wisconsin bird lovers and sports clubs now build plastic-pail houses as an off-season winter pastime. Construction is simple and raw material readily available from builders, janitor's-supply firms, fast-food franchises and other institutions using bulk foodstuffs.

This winter, when January's drifting snow and howling winds drive you indoors, building woodie-houses can make it spring in your workshop. These plastic-bucket birdhouses are recycling at its finest, for they perform the almost magical act of turning a nondescript bit of modern, everyday garbage into one of the most beautiful birds on the North American continent.

"PLASTIC PAIL" WOOD DUCK HOUSES

Materials you'll need:

2 - five-gallon plastic pails
1 - 6" x 14" piece of 1/4" mesh hardware cloth
2 - Number 8-32 x 1/2" machine screws with nuts and washers
1 - 1/2" x 12" pipe nipple
2 - 1/2" pipe flanges
4 - 1/4" x 3/4" bolts with nuts and washers
3 - 1/4" x 2" lag bolts
2 - lbs. sawdust

1

Draw line around bottom pail just below the handle brackets with felt-tipped marker and cut off the top portion. At least 9 1/2 inches of the pail should remain.

Drill four to six 3/8-inch holes in the bottom of the pail for drainage and pour in 3 inches of sawdust.

2

Draw and cut out a 3-inch eye-shaped entrance hole on the side of the top pail, one inch above the bottom. The shape helps to keep out marauding raccoons.

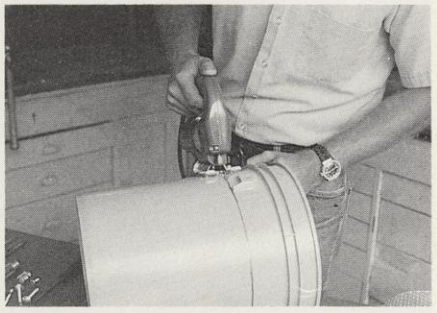
3

Drill two 3/16-inch holes in the side of the pail, 2 1/2 inches below the corners of the eye and 4 1/2 inches apart.

4

Cut a piece of 1/4-inch mesh hardware cloth six inches wide by 14 inches long. Trim all edges to eliminate sharp wires. Attach to inside of top pail, flush with bottom of entrance, using two number 8-32 x 1/2-inch machine screws, nuts and washers. This screen gives the ducklings a foothold for climbing out.

1



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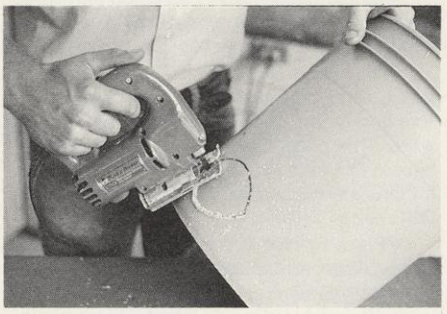

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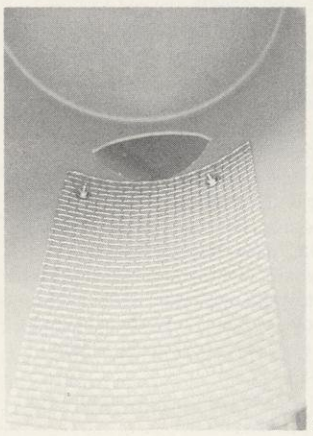
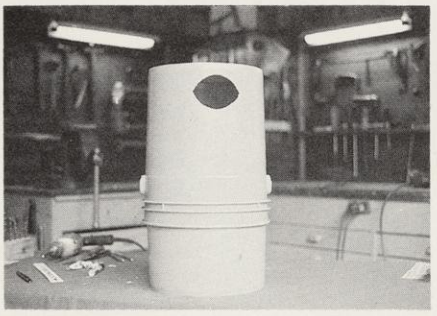


4

5
Position a 1/2-inch pipe flange on back side of top pail, opposite entrance hole and approximately mid-way up. Mark and drill four bolt holes with 1/4-inch drill. Bolt flange to pail using four 1/4 x 3/4-inch bolts, nuts and washers.

6
Place the top pail over bottom pail and push together snugly for a good, tight friction fit.

7
Mount house on tree approximately six to 10 feet above ground. Anchor 1/2-inch pipe flange with three 1/4 x 2-inch lag bolts and screw in 1/2 x 12-inch pipe nipple. Remove top of wood duck house and thread flange to pipe. Replace bottom of house.



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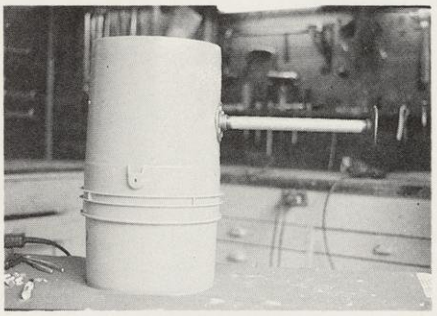

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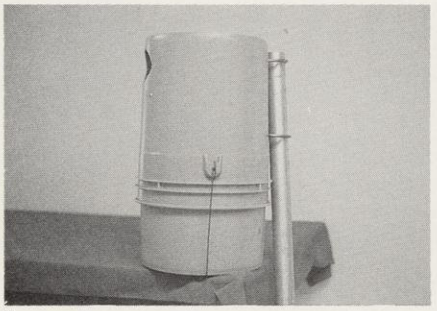
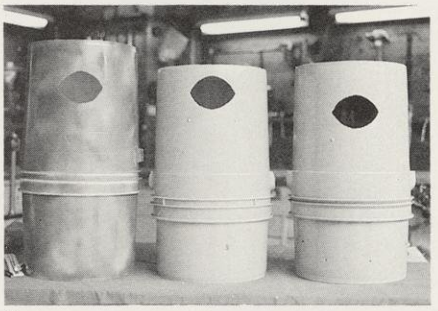


8
You can also mount woodie houses on 1 1/4 to 2-inch steel poles using two U-bolts attached to the back of the top bucket as shown, one above the other. Not all plastic pails are the same. If the two halves don't seem to nest snugly enough, attach a piece of wire from one handle-hole to the other, running it under the bottom bucket.



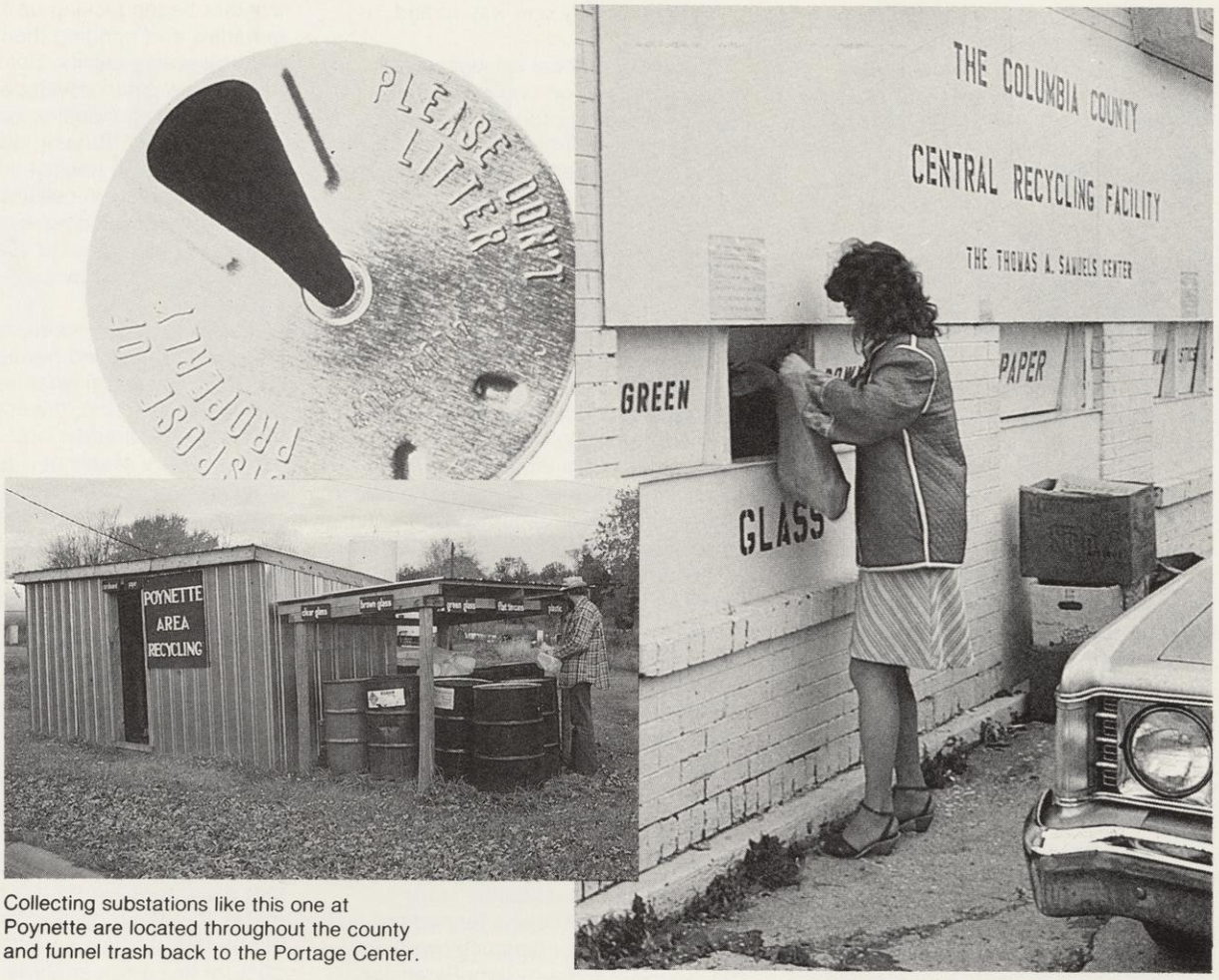
9
Plastic pails come in a variety of colors — green, gray, brown and white. To make them blend into the environment better — especially the white ones — you can "camouflage" them with green, brown, yellow and orange enamel spray-paint. Let dry at least one week to get rid of paint odor before mounting outdoors.

Now that you've built your woodie house. Tips for success.

- Mount houses along shore on hardwood trees six inches or larger in diameter. Avoid aspen — they're subject to beaver damage.
- In water, use 1 1/4 to 2-inch metal poles. Drive pole securely into the lake-bottom and mount house four to five feet above water. The poles absolutely must not pose a hazard to boats in a navigable body of water. If there is any question, contact your nearest DNR office.
- Place houses in good brood-rearing habitat. Best are ponds or lakes 40 to 70% covered with emergent aquatic plants, at least 10 acres in size with stable water levels and lots of aquatic insects.
- Start with three to five houses, 50 to 100 feet apart, then add more as wood ducks begin to use them. For every house used during nesting season, two or three others should be ready and waiting on the same body of water the following spring.
- Move to new locations any houses that continually go unused. Repair or replace damaged houses during February or March when they can be easily reached on the ice. Remove last year's nesting material and add more sawdust where necessary. This is also the time to move or install additional houses so they'll be ready for wood ducks in late March and April.
- Keep an annual log of location and success records for each house.

The Nature Club at Silver Lake College in Manitowoc built the houses as a project.

The central drop-off point is a remodeled former self-service gas station



Collecting substations like this one at Poynette are located throughout the county and funnel trash back to the Portage Center.

Columbia County's reborn trash.

HAROLD LaJEUNE, Columbia County Resource Agent

Columbia County's recycling program is unique in Wisconsin.

Most photos by Bob Wallen

At first glance, it doesn't look like much. A tiny, white-painted brick building not much larger than a good-sized garden tool shed. Across the front, a series of trapdoors bear stenciled legends: glass — brown, clear, green — plastic, aluminum, metal.

It seems unassuming, but this Lilliputian structure at the side of highways 51 and 16 outside Portage is unique. It's the heart of a successful recycling system that's helping put Columbia County's solid waste authority in the black.

The building and bootstrap program it represents had its beginnings back in 1978. At the time, Columbia County realized it was in trouble. Two years before, the US Congress had passed the federal Resource Conservation and Recovery Act of 1976, usually known as RECRA. Among other things, the law directed state governments to inspect local dumps and landfills and close down any that were likely polluters of surface or groundwaters.

An inspection tour of the county's 23 operating disposal sites by DNR and county planning officials revealed that only one site was located on soils suitable for a safe landfill. The other 22 were either in abandoned gravel pits, on deep sandy soils, or over areas where groundwater levels were extremely close to the surface. The potential for polluting the county's drinking water was high in all 22 of these sites. Only one had a life expectancy of more than five years.

County officials knew it wouldn't be easy to replace the faulty old dumps. A safe landfill needs thick, deep clay or silty-clay soils, and deep groundwater levels. Such a site must be safe from flooding and located away from conflicting uses. It would need to be at least 120 to 160 acres in size.

Places like that are rare in Columbia County. Glaciers that crept over the state left the county a legacy of outwash material, sand and glacial till over a base of sandstone, limestone or granite at shallow depths. Such soils and bedrock allow rainwater to seep straight through a landfill and sink into the groundwater with little or no filtering. What few places do have clay soils are mostly old lakebeds or shores. Such areas tend to be within floodplains and off-limits to landfills.

Columbia County was caught between a rock and some hard choices. At a time when the population was growing, the amount of garbage generated by each of its citizens was growing even faster. Yet few residents wanted a new landfill located near them.

So the county took a long hard look at all the available alternatives. The continuing cycle of finding, developing, filling and then closing landfill after landfill was only one solution. And an expensive one at that. Estimates at the time showed that purchase, engineering and construction costs for the development of just one new landfill could run in the neighborhood of $3/4 million.

The county asked experts from UW-Madison, University extension and — in public hearings — its own citizens for suggestions about what else might be done to deal with the impending garbage crisis. In all, it came up with ten potential solutions that looked possible. Closer inspection, however, began to pick them off one by one.

To do nothing would be unfair to local governments which would then be stuck with the problem. Township and village budgets were even more limited than the county's. In most communities, garbage collection and disposal is the third-largest municipal expenditure, after schools and highways.

Constructing a "resource recovery system" looked good, at first. Such systems shred mixed trash, separate out the metals, and turn the rest into "refuse-derived fuel" to be burned at the local power plant. But modifying a boiler to handle it would run a steep $10 million — too dear for middle-income Columbia County. And it didn't look like the area could generate enough garbage to make such a gilt-edged solution practical, anyway.

The county could incinerate its garbage and use the heat to generate steam, but that would cost $2½ to 3½ million — even if a buyer for the steam was found — and still leave mountains of waste to landfill.

"Pyrolysis" looked promising. This process would heat waste to high temperatures and produce a liquid or gaseous fuel. Likewise, fermenting the county's garbage to produce alcohol seemed like a good idea. But again, costs were high and quantities of waste too small to justify the capital outlay.

Given Columbia's resources, only one alternative seemed possible — "source separation." Such a program relies on each household separating its garbage by type — glass, aluminum, ferrous metal and plastics. Estimates showed that the procedure could turn 60 to 70% of the county's trash from an expensive liability into a valuable asset. But would people cooperate?

There was only one way to find out...try it.

A number of local citizens volunteered their time on committees to develop a central processing facility, set up local drop-off points, find markets for the recycled materials and get the word out to Columbia County's residents.

Robert Irwin, Director of Columbia County's Planning and Zoning Department, was a prime mover on the "Central Processing Facility" committee. In his search for a suitable site, he came across the small brick building on Highways 16 and 51, just south of Portage. The place was last the office of a self-service gas station. At the back of the 3½-acre lot was a larger, 30x45-foot quonset-hut-style building that had been a four-car auto-repair shop. Three-phase powerlines served the property.

The location and buildings were suitable for the recycling facility's purposes, so Irwin called on the owner — Thomas Samuels of H. Samuels Company, a long-time Portage scrap-metal and iron business. Irwin asked Samuels if the place could be rented.

"He told me 'No'" recalls Irwin, "then he paused for about three long, long seconds and added, 'But I'll give it to you.'"

The Columbia County Recycling Facility was off to a healthy start.

The citizen volunteers fanned out and joined forces with community workers. The local Columbia County Extension home economist prepared and distributed how-to fact sheets to Homemaker's Clubs, telling members how to separate and prepare items for recycling. Special 4-H Club booths at the county fair got the word out there. Local groups sponsored speaking contests and skits. DNR Environmental Education Specialist Dennis Yockers set up a professional improvement course which teachers could take for career professional college credit, with emphasis on solid waste management and recycling.

Meanwhile, the county got ready to receive the first recyclables. It purchased a small baler for newspapers, a government-surplus forklift, and an ancient, well-used pickup truck from the county highway department. (To come later were a newer, four-wheel drive pickup, a second forklift and enclosed semi-trailers to house shredded and to-be-shredded newspapers. A paper shredder came still later.)

The start-up cost for all machines and remodeling ran less than $35,000. The Columbia County Recycling System was in business.

By October, 1981, volunteers had set up 15 separate drop-off points around the county, most at existing landfills, others at town halls and highway garages. As citizens responded, county workers began picking up the recyclable materials and bringing them to the central processing facility. But about that time, a new glitch developed.

The housing industry was then, as now, at a 20 or 30-year low. Since no one was building houses, there was little demand for blow-in cellulose insulation, made from recycled newspapers. Columbia County found itself with a growing stack of newsprint and no market.

One farmer-volunteer said he sometimes used shredded newspaper to bed his hogs. Based on what limited information could be found, the county purchased a shredder and set out looking for buyers of this new fangled livestock bedding. One volunteer hit the road with a few bales of the material, visiting most of the area's prominent livestock breeders and feeders. A few agreed to try the "newsprint straw." By the end of that first October, the county had 10 customers, by the following March, 25 were buying the stuff. That summer, the county provided it for all exhibitors at the county fair.

Now it seems there's far more market than supply for the product. By one estimate, if only 5% of all dairy herds in Columbia County used shredded newsprint it would account for half of all that's circulated in the area. Irwin estimates that the recycling facility takes in about 15% of the county's newspaper, 30% of its cardboard, 7% of its glass and cans and probably 1% of the plastic. If the percentage seems small, the volume is not. Since opening over a year ago, the facility has recycled at least 600 tons of paper products and more than 100 tons of metal, glass and plastic.

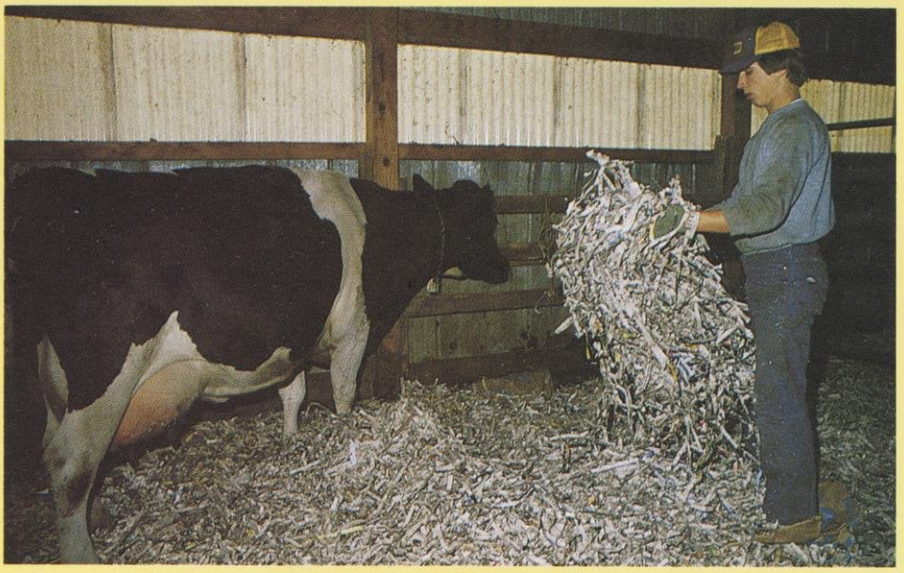
The money generated from sale of recycled materials is a substantial figure, in the neighborhood of $32,000, Irwin says. Yet it doesn't come close to repaying the facility's remodeling, equipment and building costs. In its first year of operation, the program probably will just meet its payroll "perhaps with a little left over," he says.

But there's a more important figure that doesn't show up on the bottom line. "It's not the money we make that's important" Irwin says. "This facility will pay for itself in what's not going into the landfill. We never promised anybody we'd make a profit."

If it costs only a conservative $14 per ton to bury Columbia County's garbage, the fledging facility has indeed saved residents a tidy sum. What's more, it's also stretched the life of existing landfills.

At the time the program started, the county hoped to have a new landfill operating in the near future and two more sometime after that. Now, due to financial setbacks, "We'll be lucky if we

"Now it seems there's far more market than supply for the product. By one estimate, if only 5% of all dairy herds in Columbia County used shredded newsprint it would account for half of all that's circulated in the area."



Shredded newspaper is one of Columbia County's most recyclable products. Nearly all of it ends up on farms as animal bedding.

can get even one new landfill anytime in the foreseeable future," Irwin says.

That landfill crunch makes space saved by recycling all the more precious. Logic dictates that if the facility can recycle just 10% of the county's refuse, it will stretch landfill lifespan by one year in 10; boosted to 20%, it would add one year in five.

The operation hasn't been all roses. The facility's first newspaper baler turned out to be too small for the job and cost so much in repairs and down-time that it eventually had to be replaced. Ever-increasing amounts of recyclable newsprint and cardboard began overflowing existing buildings, so Irwin had to go back to get permission to purchase first one, then a second used semi-trailer. Those, too, quickly overflowed, so this fall the facility erected a new, larger, 60 x 40-foot steel pole-building to store still more material and equipment.

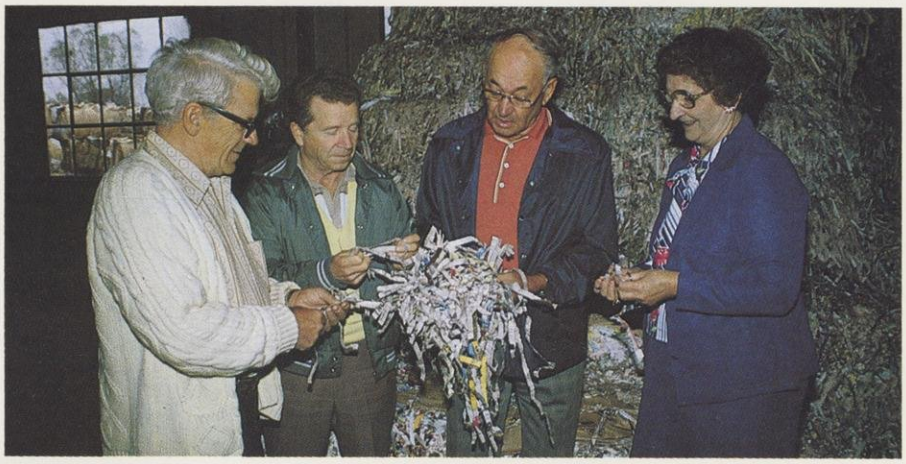
And plastic is a problem. One large Portage grocery store alone sells more than 3,000 gallons of milk each week in disposable plastic jugs. (Compared to only 300 in glass returnables.) Very few of those jugs now reach the facility. Those that do, pose a quandry — the private recycling company near Baraboo that used to accept and shred the plastics has been sold, and the new owner no longer takes them.

But Irwin and others connected with the recycling project are confident that they can solve these problems over time. After all, the program started from scratch, solving difficulties as it went along.

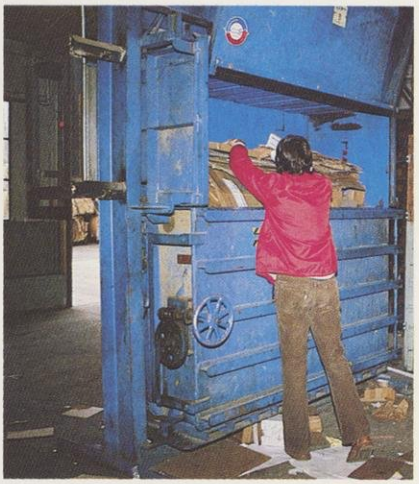
Now other localities are interested. Since its inception, representatives from 15 or 20 Wisconsin counties have come around to see how Columbia County does things.

DNR records show that in the next five years, more than 60% of the state's 72 counties will run out of landfill space. Other areas have good reason to look over Columbia County's shoulder.

The cost and political agony of replacing landfill capacity is producing a bandwagon effect. Columbia County's solution might be the wave of the future.



The shakers and movers responsible for starting Columbia County's recycling program. Left to right: Robert Irwin, county director of planning and zoning; Harold LeJeune, county extension resource agent; Ruben Damm, county board chairman; and Ingemar Lothe, chair of the county board's Solid Waste Commission.



A recycling worker loads the cardboard baler. The labor force consists of three full-time employees and several workfare people.

Plastic poses a quandry in the world of recycling. There's a high demand for it, but buyers insist on near-unobtainable levels of purity; no paper labels or non-plastic residues allowed. Photo by Larry Sperling

Recreational woodcutting:

Fuel, fun and sweat.

The hard work of cutting firewood can be fun when it's a family affair.

JOHN M. HASSE, Patrol Officer, Kettle Moraine State Forest

Foresters call it recreational woodcutting. But it sounds suspiciously like something my dad used to try to convince me was fun when the winter firewood needed putting up. For scores of families though, getting in the winter fuel supply at Kettle Moraine State Forest really is a big fun time.

Take the Robert Bales family of Waukesha for example. They were one of 132 families who cut wood in the Kettle Moraine's north and south units last year. It all started one cold, blustery, late-October Saturday when they gathered along with several hundred others to bid on marked parcels containing from one to five cords of standing wood. (Any on the ground went free to successful bidders.)

It didn't take long for the Bales' to hit the timber after they won the bid. There was Robert, his wife Sandy and sons John, Jim and Joe (ages 14, 12 and 10) along with a friend, Dave Flock. Together they put up more than two cords of oak and for the boys, fun outweighed the work by a wide margin.

Robert, Sandy and the boys live in Waukesha, more than 20 miles from their cutting plot at the south end of Kettle Moraine's southern unit. That's a healthy haul, but eleven other families (15% of the total) hailed from metropolitan Milwaukee and traveled even further — anywhere from 25 to 50 miles. Another 19% of the woodcutting families were "locals" who lived close to the forest. The rest, like the Bales, fell somewhere in between.

Proximity to wood-scarce Milwaukee sent bid prices high, even higher than DNR foresters ever expected. On the southern unit, 350 people vied for only 75 available permits, so the bidding was hot and heavy. The highest went for $60 per cord, the lowest, $32. Average was about $40.

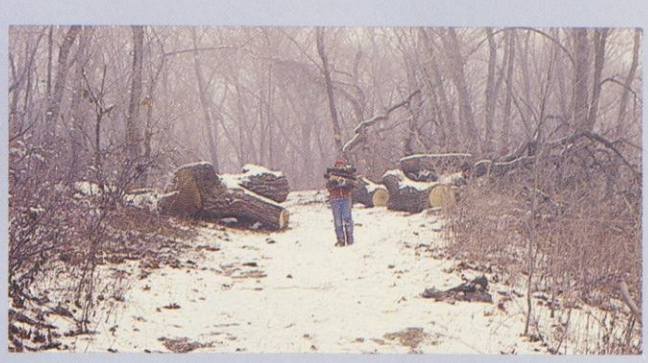
On the northern unit, 125 people bid for 57 permits. Highest there was $70 per cord, lowest $12 and the average about $25.

Elsewhere in the state, firewood permits were much more reasonable. The statewide average was $3.04 per cord. But most of that wood was cut on state land in the far north, where there's no shortage of firewood.

In all, last year's firewood sales added more than $31,000 to the state's General Purpose Revenue account. Income from the two Kettle Moraine State Forest units amounted to $8,329. The 132 families who cut wood in them took home a total of 244 cords. Their efforts saved more than 31,000 gallons of fuel oil or 44,000 gallons of LP gas. And the Kettle Moraine forest itself profited from a much-needed dose of "timber stand improvement" (TSI). TSI removes defective, poorly formed or dead trees and helps develop a healthy stand of high-quality timber.

There's a side benefit, too. Trails made by modern-day Paul Bunyans to haul out firewood now serve as paths for animals, hikers, hunters, mushroom-pickers and bird-watchers.

Almost everybody's heard the old saw that "Woodcutting warms you twice — first when you cut it and again when you burn it." But people who cut at the Kettle Moraine were warmed three times. They added the warmth of a family outing that improved the natural environment and saved energy. Wisconsin's recreational woodcutters are snug and smug this winter and they deserve it.



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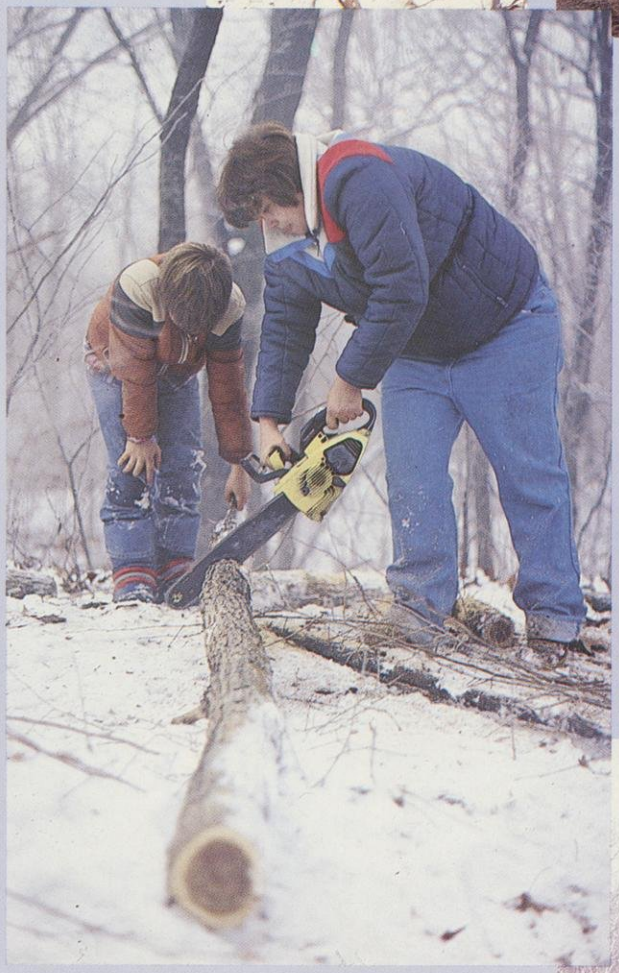
How to buy firewood

Firewood on state forests, parks and wildlife areas used to be given away free for the cutting, but recent legal opinions state that, like any other timber on state properties, firewood has value and must be sold — not given away. Different state properties open up separate parcels for firewood cutting at varying times of the year. To find out what's available in your area, contact the nearest DNR forester. He'll tell you what's coming up in future firewood sales.



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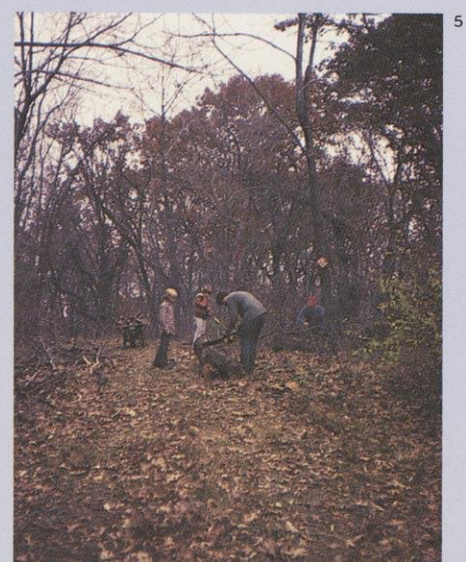

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1 "If this wasn't so much fun, I'd be sure it was work." Dad's job calls for frequent travel and doesn't leave much time to locate or gather wood, so the whole family pitched in on several autumn weekends. Ten-year-old Joe Bales and his brothers John and Jim had a great time.

2 Tools of the trade. With an outlay of a little more than $600 for tools, a used wood stove, chimney materials and labor, the Bales family had a lower-cost alternative to skyrocketing fuel bills. The investment cut about 60% off their previous year's heating costs, enough to repay them for their wood stove setup the first year.

3 The Bales were only one of more than 475 families who bid to cut firewood in Kettle Moraine's north and south units. The 125 successful high bidders took home 244 cords of firewood and generated more than $8,000 for state revenue coffers.

4 Bob Bales and family made many an early-morning start. But some others reached wood cutting plots even earlier. Many came from the immediate Kettle Moraine area and had short hauls, but a drive home of up to 50 miles wasn't unusual.

5 Robert (center) and friend Dave Flock (right) dropped the trees and worked the main logs. The boys helped carry and load.

6 Sawdust flies when you're having fun. Sandy's experience with a stump and tree service during college days really paid off. She and Jim took care of the limbs and treetops.

The Readers Write...

The story on crippled waterfowl research, "Egbert was a Lucky Duck," in the September-October issue elicited numerous replies from readers. All expressed outrage at author Fred Van Dyke's methods and questioned the need for the research. Herewith, *Wisconsin Natural Resources* prints the letters and Mr. Van Dyke's response.

We can't believe that your magazine has given credence to the story entitled, "Egbert was a lucky duck."

For Van Dyke to deliberately cripple mallard ducks as part of a "study" is unconscionable and viciously cruel. Anyone who observes wildlife knows what happens to crippled or weak animals when left in the wild. Research such as Van Dyke's was totally unnecessary!

Thank you for your time, but not for the article.

PATRICIA AND MICHAEL PESKO, Madison

This is the most inhumane damn foolishness I ever heard of.

Everyone knows that a duck with a broken wing cannot survive. If a predator does not finish it off, the crippled duck must die after freeze-up. I expect that only the wing-tip was broken. It is ridiculous to believe a broken wing bone would set itself and heal.

What authority states a broken wing to be the most common crippling injury? I doubt whether one tenth of the cripples I've found had broken wings. As for broken wing-tips, I can only recall one crippled crow. Most crippled ducks that I've found were probably gut-shot by skybusters. I place skybusters in almost as low a class as this researcher.

PETER H. TOEPFER, Milwaukee

In his article, "Egbert was a lucky duck," UW Wildlife Research Student Fred Van Dyke despairs of the fact that three to four-million waterfowl are crippled annually by errant hunters. One might find the author's concern over this tragedy touching, were his response something other than the maiming and abuse of an additional 135 birds.

Could not all but the most casual observer of wildlife have accurately predicted the same? Has Mr. Van Dyke's time-consuming and expensive research — to say nothing of the agony of his subjects — served to produce a single shred of knowledge which can be used to the benefit of waterfowl? Perhaps we are missing the point if we believe that anything more than academic credentials were at stake in this experiment.

There are many today who regard science as cold-blooded. Studies such as Mr. Van Dyke's which utilize intelligent, sensitive creatures as mere objects will only reinforce this perception.

MICHAEL D. BRANDT, Madison.

I am angry and sickened by Fred Van Dyke's "research" project involving the deliberate crippling of mallard ducks. I must protest this cruel and unnecessary "study," and criticize your magazine for giving credibility to it by printing the story. Surely, anyone who makes a conscious observation of wildlife and nature knows what happens to weak and crippled animals. For Van Dyke to break these creatures' wings and then turn them out in the wild, defenseless against predators or to slowly starve to death, is an unconscionable abuse of animals in the name of scientific research. I want to know who funded this study. I want to know who supervises Van Dyke's work and authorized his study. And I want to know if you plan to publish this sort of trash in the future as my subscription is up for renewal.

J.R. SMITH, Shell Lake.

Continued on page 14

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The Readers Write...

I have enjoyed your magazine for its beautiful wildlife and nature photography and its sensitive reportage. I was appalled, however at, "Egbert was a lucky duck."

Though I realize, regrettable as it is, that countless animals are sacrificed for human medical and scientific research, at least this is done for an honorable purpose.

For the life of me, I cannot understand the brutal maiming of 135 ducks simply to satisfy idle curiosity. Mr. Van Dyke's "research project" produced no worthwhile results and seemed nothing more than an exercise in sadism. It's small wonder that ducks are fleeing Wisconsin in droves!

I will not renew my subscription.

CARYL A. MARSHALL, Hartland.

Mr. Van Dyke has done with deliberation the same thing many thoughtless and careless hunters do by abandoning crippled birds to the hazards of life. The only difference is that here it is done in the name of science. Wearing the cloak of science, however, does not justify our ill treatment of wildlife. Much the same conclusions have been made for many years by common-sense observations of the natural world. Licensed bird-rehabilitators would also agree that a crippled bird's chances of survival without care are minimal.

I find it curious that this article concludes with a sort of plea for hunters to use ethical restraint with respect to duck hunting. It is equally important that the researcher be ethical in his treatment of wildlife. I take issue with Van Dyke's assertion, "This may seem cruel ..." Not seem, sir, it is!

SANDY STANDEREK, Milwaukee.

I was not pleased to read of this "research" project, and I sure hope it is not typical.

The author has failed to convince me it was necessary.

As a sportsman who grew up in the woods and learned about nature first hand, I can't believe it is necessary to cripple 135 ducks to "prove" what is obvious to anyone who spends any time hunting, trapping or just observing.

As one not totally unfamiliar with study methods, I wonder just how scientific these conclusions are?

As a state employee and UW-alumnus, I'm disappointed that this is an apparent example of what our state institutions condone and support.

I think that often more passive study methods would yield results just as valid. In fact, even common sense might suffice for once. The fact that the author only rectified "the old truths about the duck hunt" bears out the adequacy of old truths.

Let's hope that the author's sadistic streak fades before he can cripple deer to study car kills; or before he can move on to people.

Perhaps he should have his leg broken — under anesthesia, of course — and dropped in the middle of the Clark County Forest in winter to research whether he can fare as well as other people in the outdoors. I think that would really benefit us all, to say nothing of the ducks.

ROGER W. KAUTZ, Fond du Lac.

The letters and reactions to my study certainly deserve a serious response, and I will endeavor to give one. The Greek playwright, Aristophanes once wrote, "The boys throw stones at the frogs in sport, and the frogs die in earnest."

The problem of waterfowl crippling loss is not something I invented. It exists because the "sport" hunting of waterfowl exists. Each time a hunter aims at a duck and pulls the trigger, there is a calculated risk of crippling the target. The number of birds crippled each season is estimated in the millions. The problem is certainly not insignificant ...

My study is the first and only study to date, that:

1. Establishes a quantitative estimate of the percentage of crippled ducks that die, or survive and recover.
2. Determines the reasons why most cripples die.
3. Provides factual data that acts as an incentive for management agencies to lower the crippling loss rate.

The study was financed by the Max McGraw Wildlife Foundation of Dundee, Illinois.

The accusations that this is "idle curiosity" is unfortunate, since it suggests that investigations into the problem of crippling loss are a unique hobby of mine, like stamp collecting or needlepoint. Your readers will be gratified to learn that thousands of biologists the length and breadth of this continent struggle with the problem of crippling loss and what to do about it. Fellow researchers have assured me that my results are not "insignificant" and have thanked me for doing the investigation.

If some of your readers are simply against hunting, then let them so state and defend that position. But if they are simply "appalled" by serious attempts to come to grips with real problems which are of great concern to ducks, then these positions are hardly ones of kindness and compassion toward animals. It is rather callous indifference and self-centered anthropomorphism, toward the very problems which waterfowl face.

Several of your subscribers have threatened to cancel subscriptions. This would be both unfair and unfortunate. Unfair, because the publishers were in no way responsible for my research methods, and I would have withdrawn the article rather than cost them a single reader. Unfortunate, because only by learning and coming to grips with the real problems which wildlife face can we ever hope to learn true and genuine compassion for animals. Certain letters suggest that I may already be too late to accomplish these ends. But I urge the rest of your readership to face the real issues involved in my research, and to judge rightly.

FRED VAN DYKE
College of Environmental Science and Forestry,
State University of New York, Syracuse.

THOREAU... in Wisconsin.

R. BRUCE ALLISON,
Madison Arborist

Concord, Massachusetts was the center of the universe for the world's most famous naturalist, but he saw Milwaukee and Madison and was impressed by Prairie du Chien.

It is not generally known that Henry David Thoreau at the end of his life made a sad and desperate pilgrimage through Wisconsin. Thoreau came here seeking a cure, just before he succumbed to tuberculosis on May 6, 1862 in the same bed where his father had died of the same disease, years before. Though the trip was haunted by his impending tragedy, somehow it seems historically appropriate for Thoreau to have visited the land that nurtured Lapham, Muir and Leopold.

Thoreau was an originator of world-wide movements. The science of ecology, the British Labor Party and the ideas for civil disobedience that later freed India and inspired Martin Luther King all grew out of his philosophy. The story of its development is a tale of exacting scientific observation, moral courage and strong character.

His friend, Ralph Waldo Emerson described Thoreau this way, "He was bred to no profession; he never married; he lived alone; he never went to church; he never voted; he refused to pay a tax to the state; he ate no flesh, he drank no wine, he never knew the use of tobacco; and though a naturalist, he used neither trap nor gun. ...His senses were acute, his frame well knit and hardy, his hands strong and skillful in the use of tools. There was a wonderful fitness of body and mind... He was a good swimmer, runner, skater, boatman and would probably outwalk most countrymen in a day's journey."

Thoreau made judgments and expressed them, which was often disconcerting. Most were based on what he had learned at Concord and Walden

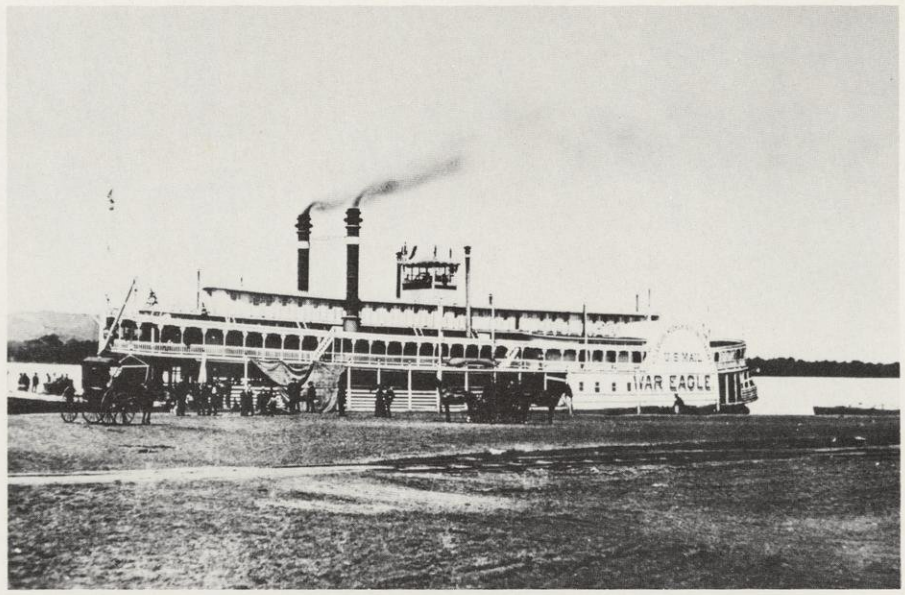
Pond. "I have traveled widely in Concord," he loved to say.

But when Thoreau came to the Midwest, it was on the advice of doctors who said his best hope for life was a change of climate. Although famous spas in this part of the country were to come later, the Upper Mississippi River Region had a reputation as health-giving and therapeutic.

Thoreau asked two of his best friends, Ellery Channing and Harrison Blake, to be travelling companions, but they were unable to accompany him. However, Horace Mann, Jr., 17-year-old son of the famed educator, was eager to accompany Thoreau, and did.

They set out by rail on May 11, 1861. First stop was at Niagara Falls, then Chicago. From Chicago they continued by train across northern Illinois to the Mississippi River town of Dunleith, now named East Dubuque. On May 23rd the pair boarded the stern-wheeler *Itasca* and headed upstream past Wisconsin's river towns to the St. Anthony-Minneapolis-St. Paul area. They spent about three weeks there exploring the prairies and woods, reading local histories in the Minneapolis libraries and making new acquaintances. From June 5th to June 14th they stayed at a private boarding house owned by a Mrs. Hamilton at Lake Calhoun, just west of Minneapolis.

On the 17th, they took a week-long excursion on the Minnesota River aboard *The Franklin Steele*. Upstream at Redwood, they observed the Sioux Indian council, where native Americans gathered at the Indian Agency to receive the annual government payment. Thoreau and Mann then went back to St. Paul and headed down the Mississippi to Red Wing, Minnesota, where they stopped a couple days (June 25th and 26th) to identify plants along the river bluffs. On the 27th their river steamer, the *War Eagle*, arrived in Prairie du Chien.



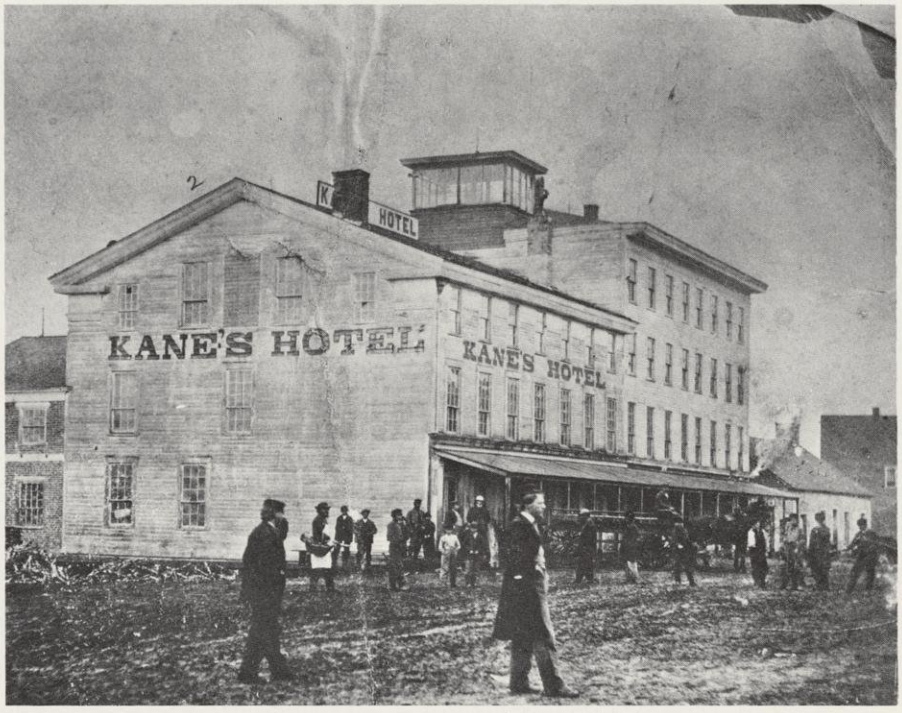
The river steamer *War Eagle*. After completing his journey through Minnesota and Wisconsin, Thoreau traveled from Red Wing, Minnesota to Prairie du Chien aboard this paddle wheeler.

Next morning, the pair boarded a train for Milwaukee. Their route went along the Wisconsin River and through Whitewater and Palmyra. On the 28th they boarded the propeller ship *Edith*, made one more brief stop in Wisconsin at Sheboygan and then continued home via Mackinaw City, Toronto and New York state.

Thoreau died within ten months of his return to Concord. He never had time to write up the Wisconsin trip for his journal. It has been left to scholarship to reveal his comments and speculate about his impressions of the great American interior. But Thoreau kept a notebook with the thought of later developing a complete account and in addition, Horace Mann, Jr. was prolific in writing home to his mother. From these two sources, edited by Thoreau scholar Walter Harding, we get a glimpse of Wisconsin and the Upper Mississippi as experienced by this most notable tourist.

The 93 pages of Thoreau's travel notebook are filled with observations of the natural world, plus occasional insightful comments about local people. When he first saw the Mississippi River on May 24th he wrote "Bluffs, say 150 to 200 feet high. Rarely room for a village at base of cliffs. Oaks on top (white?) ash, elm, aspen. Bass on slope by shore. Kingfishers, small ducks, swallows, jays, etc... Holes in side of hill at Cassville, Wisconsin, where lead has been dug. Occasionally a little lonely house on a flat or slope is often deserted. Banks in primitive condition between the towns..." While passing Prairie du Chien on the way upstream, he refers to it as "the smartest town on the river. Exports the most wheat of any town between St. Paul and St. Louis. Wheat in sacks.

This was probably the place Thoreau and Horace Mann stayed while in Prairie du Chien.



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Catch-all

Green giant:
Wisconsin boasts largest pine

Brule — An Eastern White Pine (Pinus strobus) in Douglas County was remeasured recently by arborist and author R. Bruce Allison and discovered to be a new national record for the species. It towers to a height of 160 feet and is nearly 19 feet in circumference. The tree is estimated to be more than 500 years old.

It has been nominated to succeed the National Forestry Association's current champion, a white pine in the Porcupine Mountains of Michigan's Upper Peninsula. That tree is ailing, has a rotted core and consequently has almost stopped growing. Big-tree aficionados suspect the huge pine's days are numbered.

By comparison, the new contender is in good, if guarded, condition. Allison says the tree is "remarkably sound for its age." It has a single trunk to a height of 36 feet, where the main bole then branched out into three individual stems. Only one of those separate leaders remains today. One died several years ago and the second broke off last spring. However, the remaining spire is in good condition, with a relatively healthy, widespread crown.

New DNR director in Milwaukee

Gloria McCutcheon

Milwaukee — Gloria McCutcheon has been named DNR's new Southeast District director. She succeeds Robert F. Winnie who retired recently.

McCutcheon formerly served as Water Grants director in Madison and holds a master's degree in Sanitary Engineering from the University of Illinois. Her professional career has also included work with the municipal wastewater and planning staff.

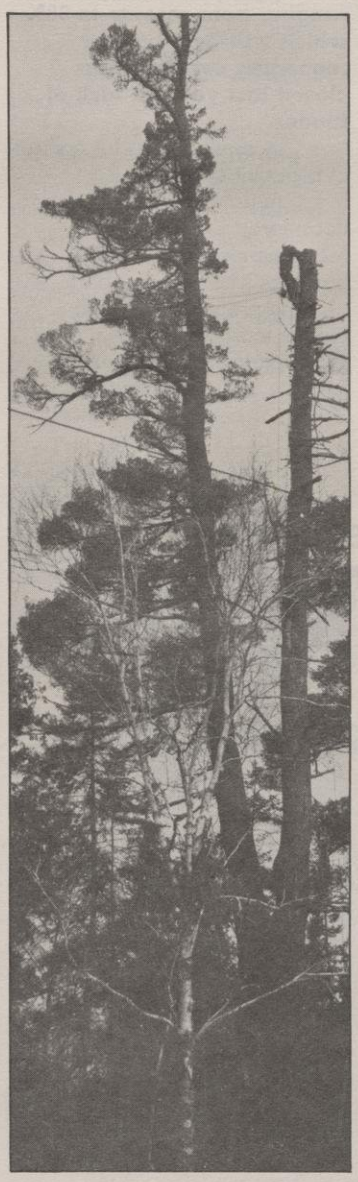
The Southeast District consists of Washington, Ozaukee, Milwaukee, Sheboygan, Waukesha, Walworth, Racine and Kenosha counties.

Cheep eats

Madison — A new booklet, published by UW-Extension, *Bird Feeding: Tips for Beginners and Veterans* by Scott Craven and Robert Ruff is a short, easy-to-read account that covers the topic from A to Z. The 10-page manual tells about basic identification, feeder types, food/seed choices, coping with predators and sanitation.

Heavily illustrated, the booklet costs $1.00 and may be purchased at county Extension Offices. For mail order information, phone (608) 262-3346.

World record white pine



Arborist R. Bruce Allison recently led a team to Douglas County to rehabilitate the big tree. The group removed what remained of two old dead stems to head off further damage to the main trunk.

The stripper

Washington, D.C. — At least three processes that detoxify PCB-contaminated oil have been approved by the federal Environmental Protection Agency (EPA). The processes strip out the chlorine molecules.

The residue is environmentally safe. Because the PCB molecule closely resembles that of other dangerous chemicals and compounds, there is hope for similar detoxification procedures for DDT and Kepone.

The procedures are effective only for substances with low levels of PCB contamination. A large-scale method of incineration disposal is used for highly concentrated PCB wastes.

Toxaphene banned

Washington, D.C. — The US Environmental Protection Agency recently announced a ban on most uses of the pesticide toxaphene, a suspected carcinogen also linked to reproductive failures in Great Lakes fish.

In recent months, EPA had come under heavy pressure from Congress and environmental groups to do something about the pesticide.

Under the ban, existing stocks of the chemical may be sold for a few limited uses, including scabies in cattle and weed control in soybeans.

At one time, more than 100 million pounds of toxaphene were applied annually on cotton and sunflowers.

$613.8-million DNR budget

Madison — The DNR board has proposed a sweeping overhaul of license and park fees as part of a budget request for 1983-85 of $613.8-million. The figure is $77.9-million above current biennial expenses. Most of the increase, about 10%, is due to higher bonding costs and debt payment on expanded aids to local government. Nearly 60% of the total goes to local communities, mostly for construction of sewage treatment plants.

Some of the highlights:

* **Increased emphasis on groundwater protection to include stepped-up monitoring and enforcement against contaminators as well as development of standards to protect public health and safety.**

* **A similar push on management of toxic substances to include more groundwater sampling and more surface-water investigations to identify and control toxics.**

* $18.2-million for land acquisition, a $3-million reduction. Most purchases will be near population centers.

* An $8.3-million boost in expenditures for development of parks, forests and wildlife areas. Total would be $18.2-million.

* Fee increases averaging 30% on hunting and fishing licenses plus a $1 surcharge on most hunting licenses. **The surcharge would produce $1-to-$3-million annually and be earmarked to pay landowners for wildlife damage to crops and for leasing lands for public hunting.**

* **An income-tax checkoff that would allow residents to designate part of their refund for preservation of endangered species.**

* **Park fee increases ranging from zero up to 33% which will help pay for reopening several parks closed last year for lack of funds.**

* Increased funds for control of nonpoint pollution.

* And new expenditures to boost forest productivity as recommended by a recent governor's task force report.

The proposed 1983-85 budget must get approval from the Department of Administration, the Legislature and the Governor before taking effect.

New state record birch

Most white birches don't grow to be very large, but this new state record in Green Lake County measures more than 13 feet in circumference, stands 72½ feet tall and spreads its crown over a 35-foot circle. Thomas Eddy and Tim Jankowski, of Green Lake, measured and nominated the giant tree as a new champion. DNR's Bureau of Forestry verifies it as the largest white birch in the state.

Hunting and fishing fees

The Natural Resources Board created two new licenses as part of its endorsement of across-the-board hunting and fishing license-fee increases for 1984.

One is a so-called "Conservation Patron Card" to sell for $100. It will include licenses for small game, deer, bear, archery, fishing, sturgeon spearing, trapping, park admission, and a subscription to *Wisconsin Natural Resources* magazine. Inland Trout, Great Lakes and Waterfowl stamps are also part of the package. Total value is $102.50.

The other new license is a $13.50 fee for turkey hunting in the new season that starts this spring. Here is a rundown on the proposed increases:

	Current	Proposed
Fishing		
Resident Annual	$ 6.00	$ 8.50
Resident Husband and Wife	10.00	15.00
Daily	3.00	5.00
Trout Stamp (Inland)	2.25	3.00
Nonresident Individual Annual	16.00	20.00
Nonresident Individual 15-day	11.00	13.50
Nonresident Individual 4-day	7.00	10.00
Nonresident Family Annual	30.00	37.50
Nonresident Family 15-day	18.00	25.00
Sports license	$22.00	$30.00
Conservation patron card	—	$100.00
Hunting		
Resident Small Game	$ 6.00	$ 9.00
Resident Deer	10.50	13.50
Resident Bear	10.50	13.50
Resident Archer	9.00	13.50
Resident Turkey	—	13.50
Trapping	6.00	12.00
Nonresident Small Game	60.00	60.00
Nonresident Small Game 5-day	25.00	30.00
Nonresident Deer	80.00	90.00
Nonresident Bear	100.00	100.00
Nonresident Archer	60.00	70.00
Nonresident General	125.00	Eliminate

If approved by the legislature and governor, increases in fishing license fees will take effect on January 1, 1984, while hunting license raises will start in September of that year.

Boats

Nonmotorized boats, including canoes would be licensed under the new fee plan. Cost would be $4 per year.

This is the proposed schedule:

	Current	Proposed
Renewal or Original Motorized Boat	$5.00	$6.00
Fleet Registration	7.50	9.00
Fleet Boat	1.50	3.00
Dealer Boat Registration	5.00	6.00
Transfer Boat Registration	2.00	2.50
Duplicate Certification or Decal	2.00	2.50
Nonmotorized Boat	new	4.00
Nonmotorized Fleet Boat	new	2.00

Catch-all

ELF rejected again

Rear Adm. W.D. Smith appears at a DNR Board hearing in support of Project ELF. The board again rejected the Navy's proposal for a massive military communication installation in northern Wisconsin. Project ELF joins its predecessors, Projects Sanguine and Seafarer, in defeat by the board. Despite widespread opposition, the project may still be built.

Longjaw long gone

Washington, D.C. — The Longjaw Cisco, a deep-water chub native to Lake Michigan, is being dropped from the US Endangered Species List.

"We aren't going to look for it any more," says James Engel, endangered species specialist for the US Fish and Wildlife Service (FWS).

The Longjaw was once common in Lakes Michigan, Huron and Erie, where it was fished commercially and sold smoked until around 1950. Biologists blame the Longjaw's demise on overfishing, water pollution, sea-lamprey predation and competition with smaller ciscos, alewives and rainbow trout. Another cisco, the bloater chub, is still fished commercially today.

Parks

Campers get a break in a new proposal for park fee increases. If approved, starting in 1984 they will pay only a single fee for use of the campground. The present park admission fee for campers will be dropped.

Here is the proposed new schedule:

	Current	Proposed
Day use vehicle sticker		
Resident Daily	$ 2.00	$ 2.50
Resident Annual	10.00	10.00
Nonresident Daily	3.00	4.00
Nonresident Annual	15.00	16.00
Camping (combined camping + day use)		
Resident, Class A Campground	$ 6.00	$ 7.00
Nonresident, Class A Campground	7.00	8.50
Resident, Class B/C Campground	4.75	5.00
Nonresident, Class B/C Campground	5.75	6.50

IRS joins fish probe

Madison — The likelihood that large sums of unreported income are involved has prompted the Internal Revenue Service to join the probe of illegal fish trading in Wisconsin, Michigan, Indiana, Illinois and Tennessee.

Investigations have uncovered major wholesalers in the Chicago area who are party to the illegal deals. **Continuing inquiries show falsification of records and the purchase of out-of-season fish to be widespread and well established.** The investigations found that retail meat and fish markets as well as small grocery stores were offering game fish, deer, cottontail rabbits and squirrels for sale to the public.

The IRS plans an in-depth examination of tax records to look for unreported revenue. Hundreds of thousands of dollars may be involved: Warrants have already been issued for some 100 persons in the case.

Natural resources workshops

Poynette — During June, 1983, the DNR and the University of Wisconsin-Stevens Point will sponsor workshops for high-school students interested in natural resources careers. Students will be introduced to forestry, fish and wildlife management and environmental protection.

Two sessions will be held at the MacKenzie Environmental Education Center near here. Two other sessions will be held at the Central Wisconsin Environmental Station near Stevens Point.

Costs for attending the five to six-day sessions will be $125. The fee includes meals, lodging and transportation. For more information on sessions and scholarships contact the following: MacKenzie Environmental Education Center, Route 2, Poynette, WI 53955, (608)635-7311, or Central Wisconsin Environmental Station, Route 1, Amherst Junction, WI 54407, (715)346-2028.

New pheasant nursery

The new pheasant propagation facility at the state game farm near Poynette is only six months from completion. Cost is $1,107,000. It is expected to eliminate disease problems that have plagued the present outmoded rearing setup. Photo by Lynn Hanson

Back to freedom

DNR wildlife managers Fred Johnson and Ron Eckstein fasten a numbered metal band to a bald eagle before releasing the bird. The eagle was one of about ten bald eagles caught in baited traps in Wisconsin this fall. The state Natural Resources Board voted recently to ban exposed-bait traps to prevent eagles and other birds of prey from being trapped. The trapped eagles were treated at the University of Minnesota Raptor Rehabilitation Center, St. Paul.
Photo by Dave Kunelius

Bite the pellet

Wild Rose — The fish management crew at Wild Rose Hatchery have come up with a new method that will increase northern pike stocks.

Don Czeskleba and his crew have "re-educated" northern pike fingerlings to feed on dry pellets instead of expensive minnows. This means many more northerns can be raised less expensively.

According to Czeskleba, "northerns will immediately convert to feeding on minnows when stocked in lakes and quickly forget the dry pellets they were raised on."

Lawbreakers pay $1.8 million

Madison — During 1981, poachers and various other Wisconsin conservation-law violators paid more than $1.8 million in fines and forfeitures. Most of the money — $1.6 million — went to the Wisconsin School Fund. The remainder went for law enforcement training and other natural resource programs.

Southeast emissions tests

Milwaukee — The Wisconsin Department of Transportation has selected an Arizona company to conduct automobile emissions testing in a six-county pollution-monitoring program to begin in April, 1984.

Hamilton Test System's low bid of $42 million averages out to a cost of $6.95 for each auto in Milwaukee, Racine, Kenosha, Waukesha, Washington and Ozaukee Counties. The bid is substantially lower than the $8-10 per auto that DOT originally estimated.

It remains to be seen whether state government or southeastern Wisconsin motorists pick up the tab for the testing. The state legislature originally directed that the inspections be free, but in the face of rising state deficits DOT has suggested in its proposed 1983-85 budget that motorists be charged a fee for the testing.

The test program is being created in response to US Environmental Protection Agency threats to withhold road funds and deny industrial growth in areas not making significant progress in controlling hazardous air pollution.

Farmers profit from wetland drainage

Madison — What motivates a farmer to drain his wetlands? Profits, according to a leading agricultural economist at UW-Madison.

In a recently completed study, economist Richard Barrows confirmed what farmers have long believed: a farmer who wants to expand his crop acreage can make more money by draining a wetland on his property than by renting additional land.

"Under average circumstances, a farmer can make about two-thirds more money growing corn on an acre of drained wetland than on an acre of rented land," said Barrows. "The economic return for draining a wetland on a muck farm is even higher — almost 10 times more."

Barrows serves on a committee to develop wetlands legislation. One of the major policy debates for the state is whether farmers should be compensated if regulations prevent them from draining.

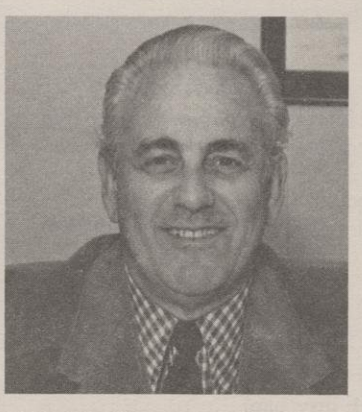
Wisconsin has about two million acres of wetlands. During the 1970's, about one percent of them were drained each year. The major use of that drained land is agriculture. However, since most of the easily drained wetlands have already been put into farmland production, the amount of wetlands drained has been decreasing during the 1980's, said Barrows. Even so, wetland acreage in the state continues to shrink.

"The federal tax system has mechanisms to provide compensation to property owners for preserving wetlands. But given the potentially high profit margin for putting different types of wetlands into croplands, there have to be strong direct payments to provide enough incentive for farmers not to drain them," said Barrows.

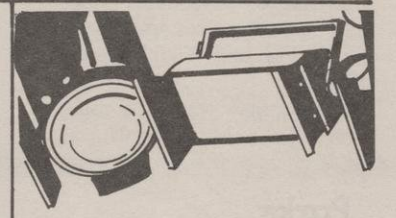
He added that legislation restricting drainage combined with a direct payment would work, but the size of the payment has yet to be determined.

"This is a question of public policy. If you argue that an individual should be subsidized for leaving a wetland in its natural state, you are saying that he has the right to drain it in the first place," Barrows said. "Some people think the right to drain wetlands is not inherent in the rights of private property. It all boils down to the value society places on the natural functions of wetlands as compared to the individual's right to alter his/her land."

Chief warden retires



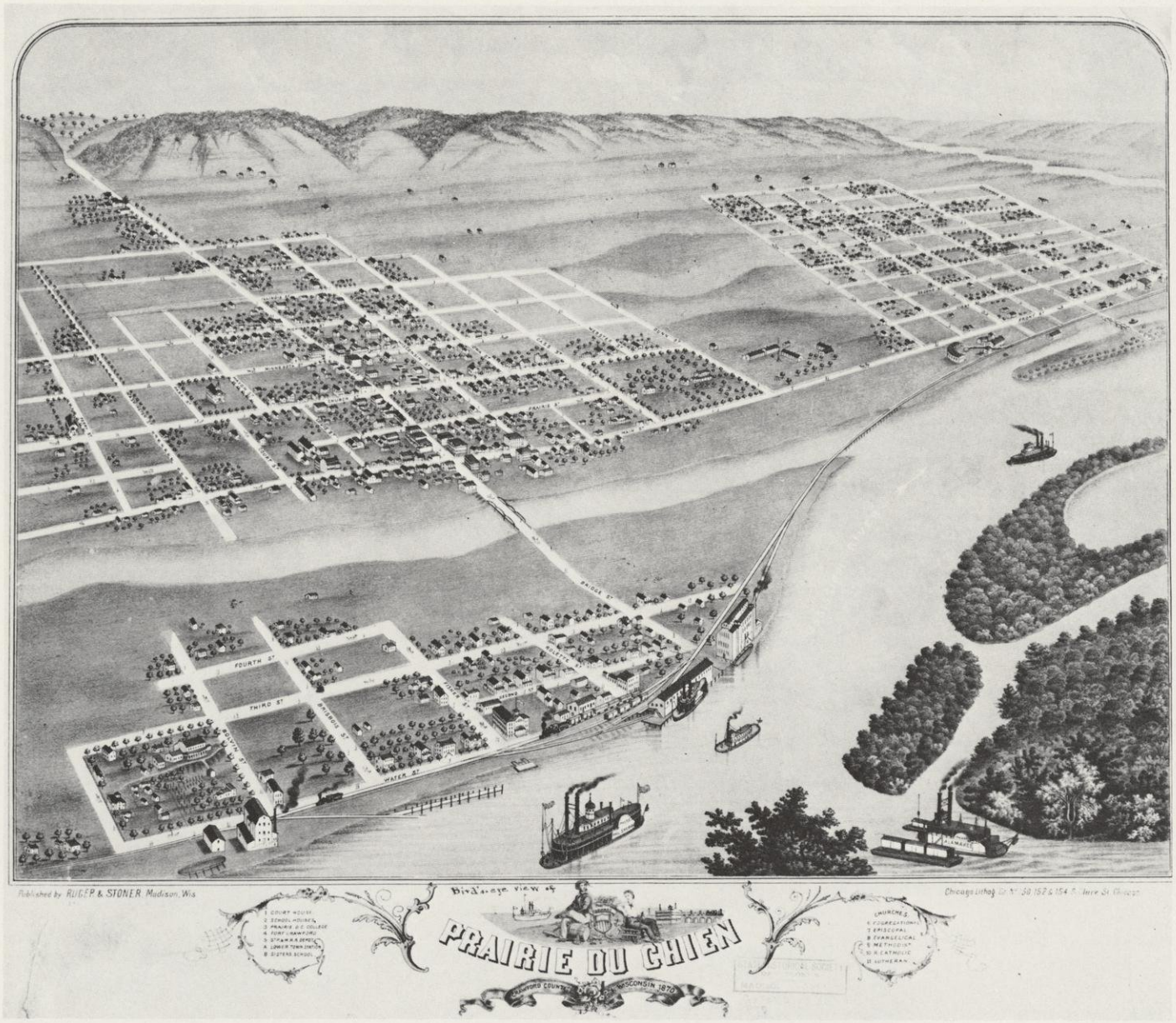
DNR's Chief Warden since 1974, Don Beghin, will retire in January. During his 33 years with the department Beghin served as a field warden, law enforcement pilot/aerial photographer and boating law administrator.



Coming Attractions . . .

Special supplements on:
- ***Groundwater**
- ***Wisconsin's North Woods**
- ***Fish Management**

Next issue to be mailed in mid-March. Look for:
- ***Wisconsin's Stonehenge**
- ***How to make a trout-fishing net**
- ***Woodpeckers**
- ***Mushrooms**
- ***Catch and release trout fishing**



A bird's-eye view of Prairie du Chien about the time of Thoreau's visit.

Continued from page 16

Great heaps at Prairie du Chien, covered at night and all over the ground and only the seed wheat."

Of the local botany and birds, he noted "at Prairie du Chien, *Pulsatilla nuttalliana* (pasque flower) out of flower. Very large. *Viola pedata* (birdfoot violet) also. Possibly a white variety of same without marks on the petal. Hoary puccoon or alkanet (*Lithospermum canescens*) yellow flowered. Root used to dye red by Indians."

The only thing he has to say about La Crosse as the boat steamed by the next day, May 25th, is "white pine began half a dozen miles above La Crosse, a few." But rather than feeling slighted, La Crosse should take pride that Thoreau would associate it with his most loved of plants. He had an almost mystical affinity for that species and once wrote, "It is as immortal as I and perchance will rise to as high a heaven, there to tower above me still."

Thoreau's notebook continues, "Fountain City about noon. Bluffs further apart and channels more numerous than yesterday. Two or three miles from bluff to bluff. Take wood boat along with us. Oaks commonly open on hills. Indians encamped below Wabashaw [sic] with Dacotah [sic] shaped wigwams. Loon on lake and fish leap. Every town has a wharf with a storage building or several, and as many hotels as anything, and commission merchants — 'Storage, Forwarding and Commission' — one or all of these words on the most prominent buildings close to the waterside. Perhaps a heap of sacks filled with wheat on the natural quay or levee close by... The steamer whistles, then strikes its bell about six times funerally [sic] and with a pause after the 3rd and you see the whole village making haste to the landing — commonly the raw, stony or sandy shore... The postmaster with his bag, the passengers, and almost every dog and pig in the town of commonly one narrow street under the bluff and back yards at angles of about 45° with the horizon. If there is more flat space between the water and the bluff, it is almost sure to be occupied by a flourishing and larger town."

Upon arrival in Minneapolis, Thoreau made good use of Wisconsin literature from the library. His notebook quotes articles from *Transactions of the Wisconsin State Agricultural Society*. Included is one by

Increase A. Lapham on the "Fauna and Flora of Wisconsin;" another by Joseph Bowron on native American use of wild rice; and a third by P. R. Hoy entitled "Notes on the Ornithology of Wisconsin."

While at Mrs. Hamilton's boarding house on Lake Calhoun, Thoreau searched diligently to locate a cluster of wild apple trees. He later wrote an essay titled "Wild Apples" in which he describes the plight of the wild apple struggling against the encroachment of civilization. As expected, the excursion to Redwood, where he saw the Sioux receive their government dole, aroused his compassion for the Native Americans. Though he mentions the event only tersely in his travel notebook, later commentary to his New England friend Franklin B. Sanborn, describes the Sioux gathering in greater detail:

"A regular council was held with the Indians, who had come on their ponies, and speeches were made on both sides thro' an interpreter, quite in the described mode; the Indians, as usual having the advantage in point of truth and earnestness and therefore of eloquence. The most prominent chief was named Little Crow. They were quite dissatisfied with the white man's treatment of them and probably have reason to be so."

A letter written to Sanborn after the trip lists government dignitaries aboard *The Franklin Steele*. There were "also a German band from St. Paul, a small cannon for salutes, and money for the Indians (aye and the gamblers, it was said, who were to bring it back in another boat)."

Another typical Thoreau note about the sternwheeler's name: "Franklin Steele in 1837, first white man that 'flashed his axe in the unbroken wilderness' and commenced improvements in Minnesota."

On June 27, Thoreau and Mann — having travelled down the Mississippi from Red Wing, Minnesota, in the steamboat *War Eagle* disembarked at Prairie du Chien. Thoreau is unusually terse, even for him, in describing his day-long train ride across Wisconsin:

"Reach Prairie du Chien about 9 A.M., the 27th.

"By cars to Milwaukee. 1st 60 miles up the valley of the Wisconsin which looked broad and shallow. Bluffs two or three miles apart. Great abundance of tall spiderwort, also red lily, *Rudbeckia* (cone-flower), blue flag, white and yellow lily and white water ranunculus (crowfoot), abundance of mullein in Wisconsin. Madison, capital and its four lakes.

"June 28.

"By propeller ship *Edith* to Mackinaw City, Michigan. Milwaukee best harbor on lake of settled places and shoal and rocky at south end of lake... 28th at evening leave Sheboygan and steam northeast to Carp River."

Fortunately, young Horace Mann had a little more to say about their train ride across Wisconsin. In a letter dated "Milwaukee and Prairie du Chien Railroad, 3:40 P.M., June 27," he wrote:

Dear Mother

As I am writing while the cars are going, I cannot do it up very well, but I will try to make it readable.

We left Red Wing yesterday at about 2 P.M. on the steamer *War Eagle* and arrived in Prairie du Chien at 8 A.M. today. The train for Milwaukee did not leave till 10 o'clock so we had to wait a while. It is rather cooler today than we have had for some time so it is very comfortable travelling. We passed through Madison at 1:30 P.M. and shall arrive in Milwaukee at 6 o'clock this evening. If we can find a boat going to Mackinaw we shall take it immediately, if not, we shall wait till one does go, which will be in the course of a day anyhow, I suppose. There has been a riot in Milwaukee of which I suppose you have read long before this, but the Milwaukee paper says today that the city is quiet.* [Mann wrote in the margin beside this paragraph, "Stopping at Whitewater."]

For the first 60 or 70 miles of travel today we kept in the valley of the Wisconsin River, which we crossed three times. It is a broad, very shallow river, with a sandy bottom; full of sand bars, many of which are bare at low water as is the case now. The prairies in the river bottom where they were not cultivated were covered with flowers, among which were the spiderwort, the wild tiger lily, the yellow puccoon, &c The marshy ponds are full of white lilies in bloom. We have not come through any large prairies today, it being mostly marshy meadows for the low ground and oak openings for the higher ground. The redwing blackbird is the most common bird there is all along the track in the marshes. You may think that I can write better, but I cannot, for this is one of the roughest roads I ever rode over. Madison is a very pretty place I should think and the lakes which surround it (stopping at Palmyra) are very beautiful. The state house is a large building standing on a rise of ground near the track as we enter the city; it is built out of dark, cream-colored limestone, which can be quarried all over that section of the state. I have nothing more to say now, so goodbye.

From your loving son

Horace Mann.

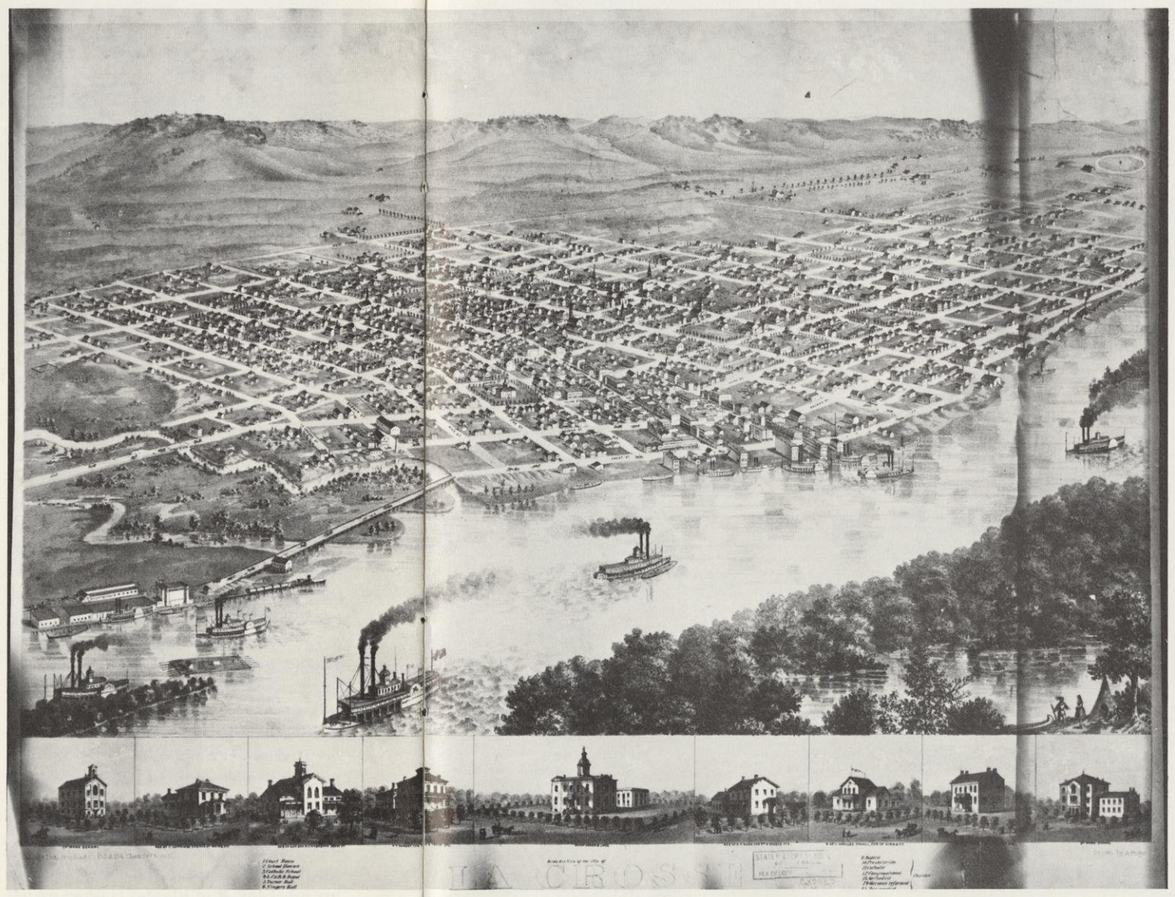
With a 17-year-old son so far from home, naturally Mrs. Mann worried. Young Horace's responses were typical teen. In a June 23rd letter to her, he wrote:

"I have received four letters from you today the first one being mailed on June 10 and the last on June 20.

In answer to your letter of June 10 I do not know as I have anything to say, it being mostly about the war. To your letter of June 15th, I will say that we have heard some account of the Big Bethel affair. Also that my hunting fibres will not get tired out while I am gone, nor come any where near it; and next that I have not had time lately to study Greek, as I thought it was acting like a fool to travel round and go to new places and not see any of them or get any specimens from them on account of the Greek. And as we have not been stationery in any one place long, and while we were I wanted to be collecting Animals, Plants and Minerals, I thought I had better let the Greek go..."

By July 10, 1861, Thoreau was back in Concord having cut short his vacation by a month. His health continued to deteriorate. On his deathbed in the familiar surroundings of his family home in Concord, he greeted visitors who came to say their last goodbyes. When asked by the town minister if he had made his peace with God, Thoreau replied "I did not know that we had ever quarreled." He was buried with an eulogy by Emerson. Concord school children strewed wild flowers on his coffin.

Of the local botany, Thoreau noted the pasque flower: "very large, without marks on the petal." Photo by Dean Tvedt



Thoreau fondly associated La Crosse with the white pine, his most beloved tree and one he saw as a symbol of eternity.

Horace Mann went on to attend Harvard College and graduated with a degree in Botany. He made some contributions to the science, but strangely enough, at the age of 27 also succumbed to tuberculosis to complete the tragic cycle of the Thoreau journey to Wisconsin.

*The riots occurred when merchants and manufacturers paid workers with questionable currency issued by state banks. This money was backed by bonds from the confederate states and the Civil War had started two months earlier. Workers marched to the bank and demanded to know whether their money was good. Forty arrests were made. The payoff in questionable currency occurred after competing private bankers publicized the state bank bond holdings, and businessmen, worried they'd be stuck with worthless money, used it to pay employees.

Illustrations courtesy of the State Historical Society of Wisconsin.

Racing Wisconsin's winter wind.

JORI OLSEN, Editorial Intern

Iceboats are faster than anything on the surface of the earth that isn't engine-powered. And Wisconsin iceboaters are the fastest in their sport. To win, they cooperate on the drawing board and in the shop where they build masterpieces of motion.

The winter wind blows stronger than usual this cold March day. It's too biting to icefish. There's been little snowfall and the skiers and tobogganers are discouraged. Madison's Lake Mendota is frozen thick and a few patches of white swirl across its smooth surface.

This is a perfect day for iceboating, a sport totally dependent on the elements. When wind is fair, ice hard and snowfall light, these sleek, swift craft glide fast and easy. Some Wisconsin lakes are the best in the world for iceboats — Mendota, Pewaukee, Geneva, Big Green, Winnebago and a few others. Nowhere are conditions so excellent, nowhere are there more champion racers and nowhere more iceboating clubs.

Among them, Madison's Four Lakes Ice Yacht Club enjoys a premium situation. The Madison lakes are all of different depths and widths, freeze over at different times and get varying amounts of snow and drifting.

"We start sailing on Lake Kegonsa before Christmas when there's not a flake on the lake," explains Bill Mattison, nine-time world iceboat champion. "After Christmas, we hop over to Monona, and Mendota."

The club spends the winter jumping back and forth among the lakes, but will migrate all over the state to find the best ice. It's only a two hour drive to Lake Geneva or Pewaukee Lake and even Winnebago and Green Bay are convenient.

Unfortunately, some winters it's necessary to travel out of state for prime conditions. So, iceboaters appreciate Wisconsin's intermittent thaws that bare the ice. They can even handle fresh, fluffy snow up to six-inches deep. But, once the snow settles, it's no go.

Lake Geneva's Skeeter Iceboat Club at Williams Bay, normally sails 27 races each weekend on Wisconsin lakes. But club member Jane Pegel, pilot of a DN-60, the smallest type of iceboat, said that last season was a bad one.

"I drove 4,900 miles for 15 races," Pegel complained. No complaints for the previous season though — '80-'81 was her best in 35 years on ice. For 11 straight weekends she never left the state.

While climate and good lakes are success factors, innovative design changes by Wisconsin's iceboaters keep them out front.

Historically, iceboating originated on New York State's Hudson River in the early 1800's. Some of the sport's most

Photos courtesy of the Four Lakes Ice Yacht Club

Members of Madison's Four Lakes Ice Yacht Club join forces to add another Skeeter to the Red and White Fleet. Left to right: Bill Hanson, Bill Mattison, Paul Krueger and Ken Whitehorse.

The last race over, a weary pilot pushes his Skeeter home. ▶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majestic boats, like the famous 50-foot long *"Jack Frost"* and the even larger *"Icicle,"* with its 1,000 square-feet of sail, raced there. But about 1900, the Hudson opened to commerce and when icebreakers crunched in to clear shipping lanes, the big eastern iceboats languished.

Afterwards, many of these grand old A-boats were built and raced in the Midwest. Madison residents remember the *"Mary B"* and the *"Fritz."* The Fauerbach Brewery family owned the *"Princess."* At Oshkosh, there was the *"Debutante,"* and *"Ferdinand, the Bull"* still races out of Lake Geneva. Most carried 350 feet of sail and had 35-foot masts. Today, the biggest iceboat in the world, the *"Deuce"* still sails Pewaukee Lake. She carries 1,000 square feet of sail, weighs about 2 1/2 tons, is 65 feet long and owned by Bill Perrigo. Built in Detroit in 1935, it's estimated the *"Deuce"* would cost $150,000 to reproduce today. While these graceful monsters dominated the scene for years, they were destined to go the way of the dinosaur.

Midwesterners learned how to build lightweight iceboats that could steal championships and Wisconsin builders were up front in this small craft design. They continuously changed and improved, striving for perfection, and are still doing it.

By the 1930's, the Wisconsin-produced Skeeter was the fastest boat on ice. Builders had moved the cross plank that supports the runners farther back from the mast for better balance and reduced sail-area to no more than 75 square feet.

By the mid-70's Madison pilots had come up with still another big improvement.

Before then, Skeeter sailors sat ahead of the runner plank, under the sail. In that position they couldn't pull the canvas flush with the deck for best stability. But, in 1976, Madison's three-time world Skeeter champion, Paul Krueger, placed the skipper behind the sail and runner plank. The change meant better visibility, balance and speed. Today, many Skeeter winners have adopted the new design.

Like many iceboaters, Krueger builds Skeeters in the basement of his home, often with help from fellow Four Lakes Ice Yacht Club members. Any time the bunch gets together, a new idea might pop up.

Recently, they discovered an epoxy glue that's not only stronger than the powder glue they'd been using, but also strengthens the boat's wood. To reduce weight but not sacrifice strength, they may sand down nonstress points or use a saw to cut whole pieces of wood from the bulwarks.

Krueger is a successful auto racer and can channel race car technology into iceboat design. The Skeeters he and his buddies construct weigh less than 200 pounds and measure under 30 feet long. Mattison compares them to aircraft.

"Our Skeeters are the fighter planes. Others are the bombers."

A 38-foot A-scow demands a crew of six to eight while the Skeeter is a speedster for singles.

Skeeters cost about $2,500 to build, the smaller, popular DN-60 and Nite iceboats, around $1,000. Plans are available from places like Nite Boatworks of Lake Geneva or Norton Boatworks at Green Lake. But these plans are sometimes only the basics...

Nothing limits an iceboater's imagination. Ken Whitehorse of McFarland, who holds the world's iceboat speed record of 156 miles per hour, wants to equip his Skeeter with a sliding block of lead under the runner plank. Controlled with a lever, the weight will help balance his craft in strong winds. He also plans to experiment with sails made of sheet aluminum. And if motorcycles can have sidecars, why not iceboats? Whitehorse doesn't know if this new design will win races. "It's for fun," he says.

Competing iceboat builders elsewhere in the US and in Canada, Russia and Poland keep an anxious eye on design changes by Wisconsin iceboaters. Madison Skeeter pilots travel out east once a year to race against New England and overseas sailors in the Eastern International Skeeter Association (ISA) Championship. Says Whitehorse, who won the Eastern ISA last winter and the Northwest Ice Yachting Championship in 1977, "All the rumors they've heard about our boats being the fastest and about all our new impossible designs, turn out not to be rumors at all."

Though they race against each other in the final draw, many Wisconsin iceboaters work together in design and construction. Four Lakes sailors even use the same colors and their boats have been nicknamed, "The Red and White Fleet."

"The Easterners don't have this comradeship," Whitehorse explains. "They even compete in the garage."

While Wisconsin iceboaters don't compete in the garage, out on the ice, it's a different story: They not only fight each other — they battle the elements too. This means helmets for safety and heavy clothes to protect against biting winds that blast a pilot's body when an iceboat hits 100 miles per hour. It's a ridiculous figure, of course, but computed wind chill factors can be minus 200 degrees.

"I've raced out there when you can hardly blink," Mattison says, "When it's so cold and windy neither man nor beast should be out."

Competitors start their boats at the line by pushing them until they catch the wind. Then they jump in and tack towards the first mark. Without much time to spread out at first, the boats all come together at the mark, sliding around it with their runner planks at a 45 degree angle to the ice.

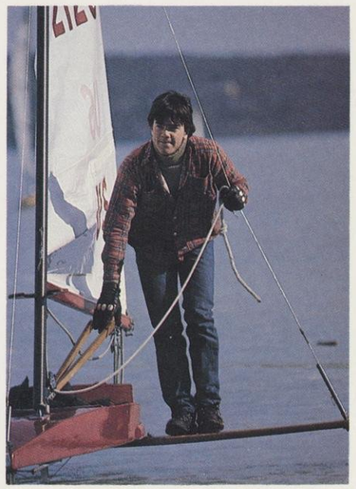
"You feel like you're on the 'Scrambler' at the fair when you turn going 80 miles an hour," Whitehorse says.

Unlike sailboats, iceboats can only

Bill Mattison's *Honeybucket VII* has the edge over Harvey Witte in *Red* during a Lake Mendota race.

Up on two runners in a turn, Ken Whitehorse hopes a block of lead under *Warrior II's* runner plank will give better control in strong winds.

A DN-60 is the smallest iceboat. This pilot is sliding his into position for the start of a race.



Runner to runner at the line-up, Wisconsin iceboaters wait for the starting gun.

The end of a race at sunset.

move upwind or down. They can "tack" — sail back and forth at an angle to the wind — but they can't "reach" — travel perpendicular to it. That's why iceboaters need big, wide lakes.

Between 30 and 50 boats compete in each race on Mendota, Geneva and similar lakes. Races last about 15 minutes and cover eight to 10 miles. From start to finish, iceboaters are on their own. There are no shouts of "right of way!" or "starboard!" or less polite phrases often heard in summer sailboat races. "You're going just too fast to communicate," Mattison states.

Traveling at such high speeds, a pilot must immediately think about stopping after he's crossed the finish line — Wisconsin iceboats have no brakes. To stop, the pilot circles around gradually, then heads directly into the wind and lets out the sail until it flaps like a flag.

"Some of those crazy guys out East will put down their big brake levers at 50 miles an hour," Whitehorse says. "They're totally out of control and gouge the heck out of the ice for everyone else. They depend on their brakes as a crutch instead of using sailing skill."

Bad spots on the ice are a hazard at such high speeds and they're hard to spot. Madison pilots remember one race about four years ago when three broke through the ice, one right after the other. There wasn't much the two following pilots could do after they saw the first boat go through. Iceboats don't break through completely very often though — instead they get stuck in cracks. A good pilot gets to know where seasonal cracks and heaves appear and avoids them.

Conflict between iceboaters and ice fishermen are another potential problem, but complaints are few. On rare occasions an iceboater runs over a tip-up. Then, chagrined, the pilot takes the blame and reimburses the owner. Most ice fishermen cluster in one area on a lake and are surrounded by cars or shanties, making them easy to spot. Bright colored tip-ups also help.

Joe Norton of Green Lake, the Northwest Ice Yachting Association's recent commodore, says, "They even consider us a little entertainment when they're out there. And when an iceboater's hurt, they come over to help and vice versa."

Serious accidents are very rare because in a demanding and unpredictable sport, you have to know what you're doing. "It's 100 percent the elements," Mattison explains. "We can't plow a lake or turn down the wind. You have to read conditions."

Even so, the wind sings a siren song to those who long for a test of skill.

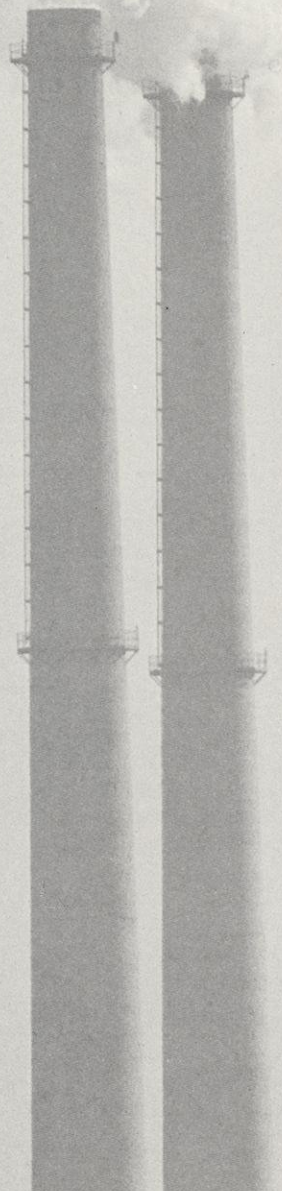
"We'll see one determined iceboater jump out on the lake even if conditions are terrible," says Whitehorse. "And suddenly, everyone's out there...." The lure is speed, adventure, and the chance to win.

"If I could sail the ice every weekend," says Madison pilot Mike Langenfeld, "I'd burn my skis."

Like many, Langenfeld knows the magic of Wisconsin's winter wind—the frozen fire that sweeps our icy prairies. It carries with it those who dare to be the fastest and know that in Wisconsin they can be.

The Clean Air Act: A tough one to follow.

J. Wolfred Taylor, Editor
Wisconsin Natural Resources



Federal foot dragging and worry over whether anything toxic is harming Wisconsin air has prompted action by DNR.

In Wisconsin, no one is afraid to take a deep breath and if DNR's Bureau of Air Management has its way, no one ever will be. To make sure, the department has decided to move ahead on its own, rather than continue the interminable wait for federal guidelines on emission of hazardous pollutants into the air.

Most people are aware that the federal Environmental Protection Agency (EPA), as required under the Clean Air Act, has long since set limits for the nation's six most chronic and widespread air pollutants. These are ozone, carbon monoxide, nitrogen oxides, sulfur dioxide, particulates and lead. This is fine, but hundreds of other very localized emissions, that may or may not be toxic, remain unexamined and unregulated by EPA. They occur nationwide and some may be dangerous. Despite the Clean Air Act, which requires EPA action on these too, little has happened. While the belief is that there are very few, if any, serious toxic problems in Wisconsin, no one really knows for sure. To find out, DNR will create a task force that will look at various emissions, determine whether they are hazardous and establish a procedure for handling any that are.

Both industry and environmental groups agree on this approach but have separate opinions on specifics. Walter Woelfle, chairman of the Environmental committee of the Wisconsin Manufacturers and Commerce Association says, "Industry wants as few regulations as possible, but we recognize that DNR has to take a look at these compounds and we have supported giving DNR that authority."

Woelfle insists that "if emissions are limited, there must be a sound scientific basis for it."

Henry Handzel, Jr., attorney for the Paper Industry Council says "the task force should not presuppose there is a problem in Wisconsin.

He thinks the initial objective should be to determine whether a significant health hazard actually exists.

"If one is found," Handzel says, "the issue is then whether existing regulatory mechanisms are adequate. New regulations may not be the solution."

Terry Kakida of Citizens for a Better Environment wants the task force to work out "standards that adequately protect the public health in both the long and short term." Kakida especially urges consideration of long term effects of toxic emissions to avoid "future crisis regulation when a problem becomes acute."

He thinks Wisconsin should have a "generic toxics policy" against which compounds could be judged on a case by case basis.

Don Theiler, Director of DNR's Bureau of Air Management says the task force will examine the adequacy of the state's present program and specifically answer three questions:

1. What standards should be established to adequately protect public health and welfare?
2. Which sources of hazardous emissions in Wisconsin should be exempt from permit requirements because they do not pose a significant threat to public health, safety or welfare?
3. What potential health impacts will arise from use of 1,1,1-trichloroethane and methylene chloride in Wisconsin? Do existing regulations that apply to these compounds adequately protect public health and welfare?

It's expected that finding answers to these questions will take about two years.

The whole idea for the task force grew out of difficulties with 1,1,1-trichloroethane and methylene chloride, both of which are used for metal cleaning, painting and other surface coating. Their potential health impacts are widely disputed, with various studies contradicting one another. Both compounds are also potential substitutes for some, now in use, that pollute by contributing to formation of ozone. But there was no proven health link and the federal government makes no requirements, so industry sought deregulation of the two compounds. The upshot was that all users are exempted from most emission controls but required to register and specify how much of each they use. This is done to keep track of who is using these compounds; the two may yet prove to be hazardous.

The exemptions worried the Air Pollution Control Council, a citizen advisory body to DNR. They wanted to keep tabs on any serious health consequences that might be discovered in the future. The council asked that a task force, including two toxicologists monitor medical research into health impacts of the two chemicals and at the end of two years report to the Natural Resources Board.

"The incident," said Theiler, "highlighted the fact that the state has no systematic procedure for looking at hazardous emissions."

The expanded task force is intended to fill this void. It will examine not only use of the two compounds but also whether a state procedure is needed to regulate other hazardous emissions.

"We must have some systematic mechanism to review and limit the amounts of toxic and hazardous materials emitted into Wisconsin's atmosphere," said Theiler. "We currently operate on a case by case basis, generally following guidelines developed by the State of Michigan. We should have our own formal rules detailing how limits are to be set when necessary."

Theiler says that neither Wisconsin nor any other state can sit back and let the federal government take care of the problem.

"The standard-setting process at the federal level is so complex for hazardous emissions they haven't been able to act," says the Air Chief.

The problem is that EPA's review and control mechanisms are too long and cumbersome to ever reach the goal of setting standards. The federal agency initially identified 632 organic chemicals as potentially hazardous air pollutants. But the screening, ranking, assessing, reviewing and re-reviewing has so far resulted in standards for only four: asbestos, beryllium, mercury and vinyl chloride.

Another three, arsenic, benzene and radionuclides are listed as hazardous, but no standards have been set.

One reason for the federal government's slowness to act is the sheer enormity of the job. Since World War II, the production of synthetic chemicals, source of many of the suspected toxic substances, has increased 350-fold. EPA's Office of Toxic Substances counted two million recognized chemical compounds in 1976. Another US agency in 1981 put the number of chemicals actually in use in this country at 60,000. More ominously, the US Department of Health and Human Services admitted that little is known about the health effects of most of these 60,000 man made chemicals. In recent years the chemical industry has introduced as many as 1,000 new chemicals annually, adding to the backlog of untested substances. While many are produced in small quantities and may never enter the outside air, many do and therefore need attention.

"The level of immediate toxicity is known for only a couple hundred such chemicals," observed Wolf Klassen, director of DNR's Southeast District air program. Klassen, who has backgrounds in both chemistry and health, says "Little if anything is known about the effects of long-term exposure and even less about carcinogenicity, mutagenicity or the impact on reproduction, including birth defects."

This lack of knowledge points up the need for establishing a system that can respond as new knowledge becomes available through research. The Wisconsin task force will do this.

"Toxicity can occur at the one-part-per-million or even one-part-per-billion level," said Klassen, "often approaching the detection limits of even the most sophisticated instruments and methods."

Solving the problem of measurement and detection is a top research priority and new technology can be expected soon that can measure the tiny amounts needed for experimentation.

Unfortunately, toxic substances are linked in the public mind almost exclusively to the chemical industry. However, this is only one source. Others include the combustion process, mining and petroleum industries, radioactive substances and even the atmosphere itself which can transform harmless emissions into hazardous ones.

The enormity of the problem, coupled with snail's-pace federal action has prompted outbursts from the National Clean Air Coalition and the Natural Resources Defense Council. They have charged that "Millions of Americans, living in the shadow of chemical plants, oil refineries, coke ovens and other industrial facilities are breathing chemicals that can cause cancer and other killing diseases."

The two organizations have focused national attention on the problem, especially on the fact that no satisfactory federal program exists to identify and regulate toxic air pollutants. They specifically asked EPA to spell out the dimensions of risk for 37 chemicals of concern, long "under assessment" by the agency. The two groups' proclamations aroused the public and stirred the Congress. As a result, two proposed amendments to the Clean Air Act have been accepted at committee level. If passed, they will force EPA to act at least on the 37 compounds.

But Wisconsin cannot afford to wait for congressional action on every compound.

Said DNR Administrator of Environmental Standards Division, Lyman Wible, "We believe that industry and the public deserve a more direct approach."

Wible said he welcomed the cooperative response from those involved when creation of the task force was proposed. Wible hopes the cooperation will continue in the group's regular deliberations. He noted that a similar approach is underway to consider toxic problems in wastewater discharges.

"While the task force may make many recommendations involving individual compounds," said Wible, "eventually it will come down to considering the public health benefits of what may be expensive emission controls."

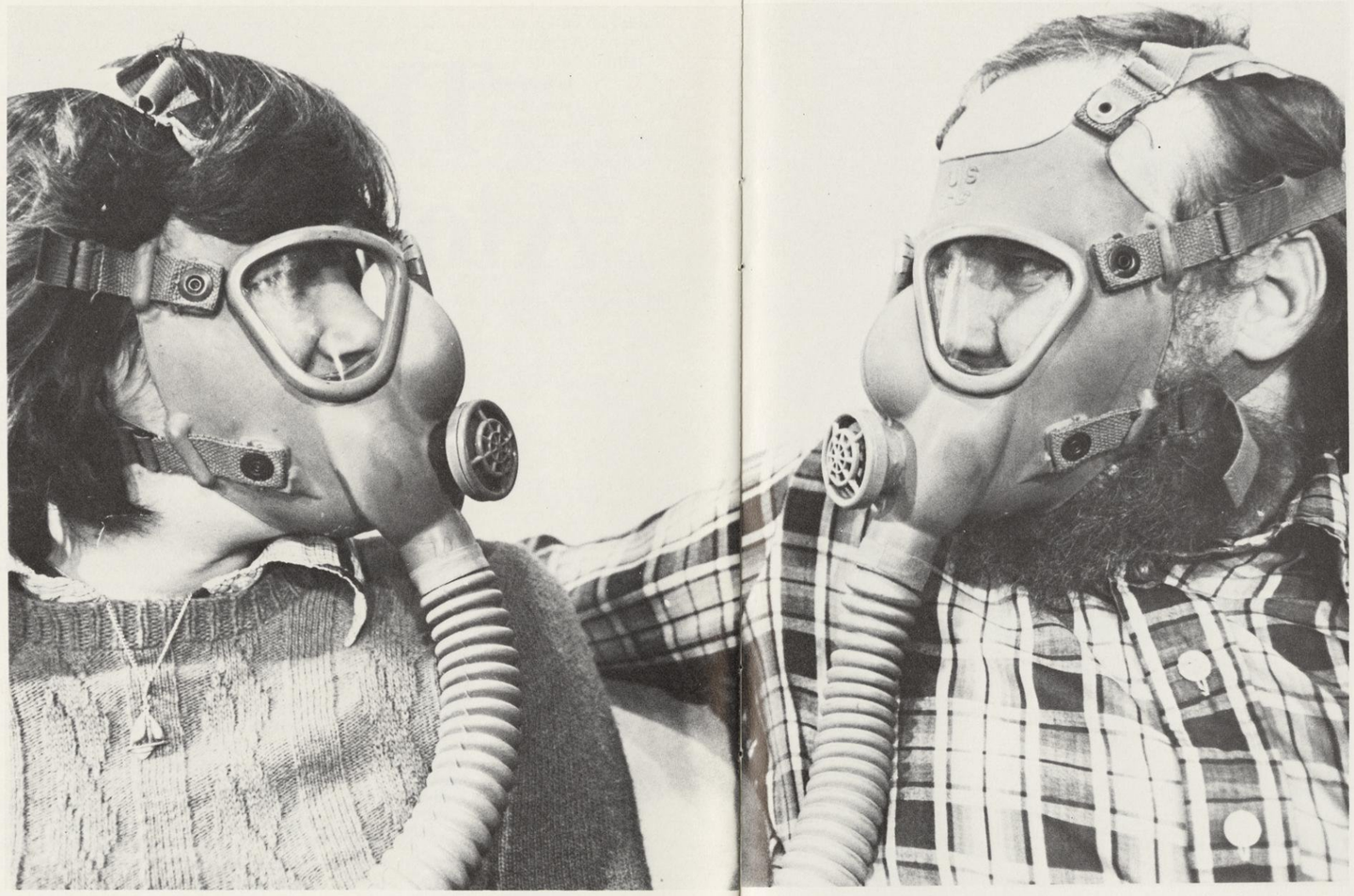
Wible says decisions won't be easy because "citizens are concerned, environmentalists are persistent and industry fears unnecessary regulation."

The task force will consist of seven members:

- Two toxicologists or public health representatives, one from industry, the other from public interest groups.
- One health specialist from the State Department of Health and Social Services.
- One representative from the State Department of Development.
- One each from industry and from an environmental organization.
- And one nominated by the other six.

DNR Secretary Carroll "Buzz" Besadny will appoint all seven members.

They will be named early in 1983 and will allow Wisconsin to get on with the important business of regulating hazardous emissions where necessary, despite what happens in Washington.

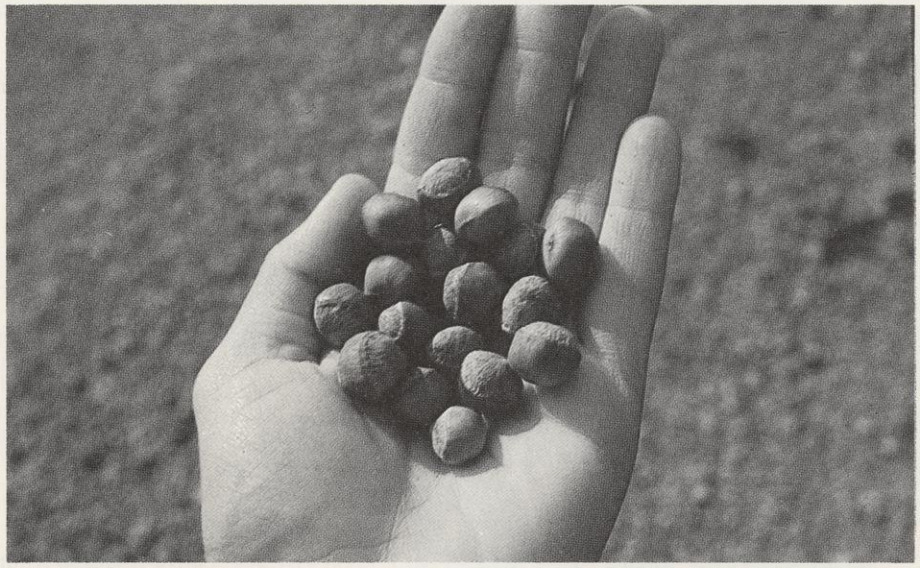


Magazine staff members hoke it up for clean air. The idea is that this will never happen in Wisconsin—but it might elsewhere. Left to right are Jori Olsen and Rob Irwin.

Photo by Martel Perry

Nuts to you, Valentine.

TOM SINCLAIR, UW Institute for Environmental Studies
WAYNE PAULY, Dane County Naturalist



A pair of hazel nuts, side by side on the fireplace grate, will explode or burn to foretell the fate of a couple's romance.

"In the spring, a livelier iris changes on the burnished dove; In the spring a young man's fancy lightly turns to thoughts of love."

Alfred Lord Tennyson.

It's disappointing to learn that none of the three St. Valentines of historic record (all of whom were martyred) ever did anything passionate or otherwise to precipitate creation of their day. The celebration of love on February 14th is purely a coincidental gift from the calendar. Says Encyclopedia Britannica: "The association of the lover's festival with St. Valentine seems to arise from the fact that the feast of the saint falls in the early spring and is completely accidental."

Nevertheless, romance will out. As far back as Chaucer's time in the 1300's, February 14th was recognized as the traditional day for birds to begin choosing mates. From this grew all the love games, cards, candy and flowers that bemuse us today. Purveyors of the goods did much to help, but Valentines Day was a cinch to succeed. It is the only day of the year devoted to that most passionate preoccupation of the young at heart: romantic love.

Valentines Day, of course, goes on year-round. The quest for love and romance is not confined to February 14th and it has an ancient folklore.

Much of the lore involves elaborate means of learning who one's prospective mate will be, how to win him or her over, and their future fortunes together. To our forebearers, these games were sometimes undertaken purely for fun; they were amusing pastimes for lazy summer afternoons or long winter evenings before the time of radio, television and video games. But folklore was also folk wisdom, the accumulated knowledge of generations. People of the past often took its revelations very seriously.

They lived closer to nature than most of us do now and their Valentine lore was told by flowers, trees, birds, fruits, nuts, even weeds.

Pioneer parents used to tell their children, for instance, that the fragrant leaves of yarrow, a common herb brought to this country by European settlers, could tell them who their spouses would be. The children were instructed to crush a pile of the leaves, wrap them in flannel, and tuck the package under their pillows at night. While they slept, they were supposed to dream of the person they would marry, but *only* if the proper words were recited before going to bed:

Good morning, good morning,
good yarrow,
and three good mornings to thee.
Now pray tell me tomorrow
Who my true love is to be.

So, too, could the fuzzy leaves of pussy's toes, which grows frequently in sandy soils and along dirt footpaths in Wisconsin. A young boy would pick a pussy's toe leaf, think of two girls he liked, give the name of one to one end of the leaf and the name of the other to the opposite end, then pull them apart. Each end would draw hairs out of the other, and the part with the longest hairs indicated which girl was the sweetheart.

Apples also had magic power that foretold love. It was said you could hold an apple in one hand, twist the stalk with the other, and recite the alphabet — one letter for each twist — to find the initial of the first name of your future spouse. The stalk broke off at the correct letter.

To find the initial of the *last* name, you poked the skin of the apple with the stalk, again reciting the alphabet, until it broke through just before the correct letter. To learn how many children you would have, you sliced the apple in half and counted the exposed seeds.

Apple seeds were versatile. If you wetted one with your tongue and squeezed it between thumb and forefinger while saying the following rhyme ...

Kernel, come kernel,
hop over my thumb,

A day haunted by ambivalent symbols

A kiss tossed to a cardinal will be received by your sweetheart. A girl who sees a red bird on a holiday will marry a sailor. A yellow bird gets a rich man, a blue bird a poor one.

and tell me which way my
true love will come.
East, west, north, south.
Kernel jump into my true love's mouth.

... the slippery seed inevitably popped out. Whichever way it flew was the direction in which you would expect to find a lover.

When a boy blew on a puffy dandelion head, the number of seeds that didn't float away told how many sweethearts he would have before taking a wife. When a girl blew, it told how many children she would have.

In a party game on Nutcrack Night (Halloween), young people were each given a hazelnut. After they were paired off, the couples laid their hazelnuts side by side on the fireplace grate.

If the nuts exploded from the heat (which might happen if they were moist inside and tightly sealed), the couple soon would part. If the nuts caught fire and burned quickly with a wild flame, the young man and woman would have a passionate, though brief, love affair. Finally, if the nuts burned with a slow, constant flame and the ashes fell through the grate together, the two would enjoy a long romance.

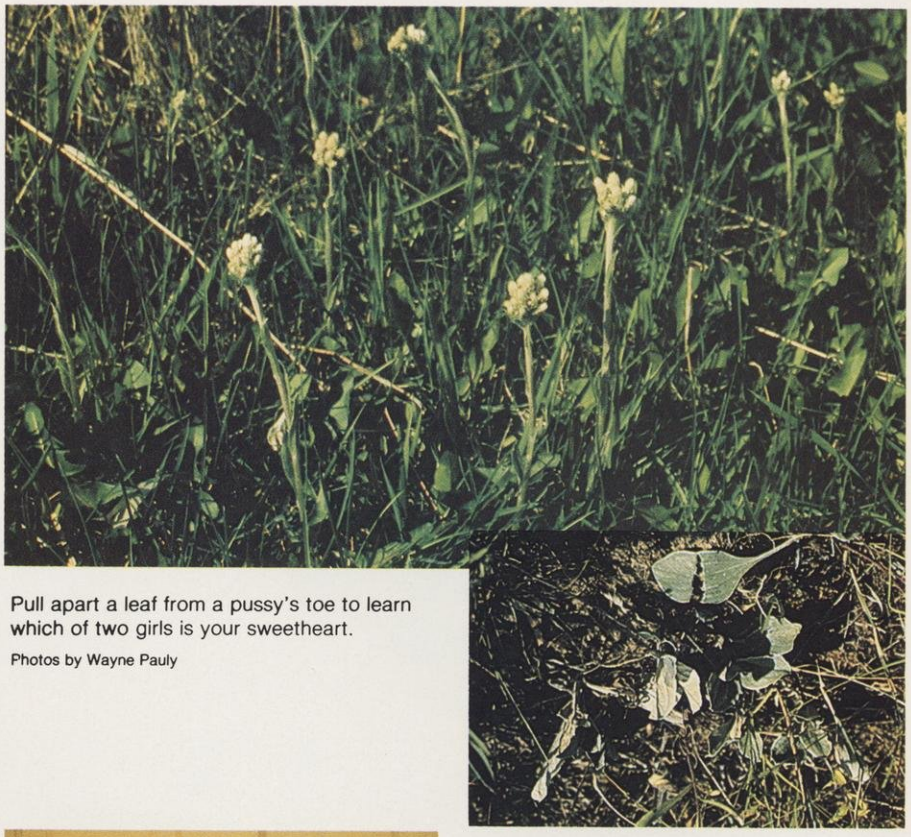
The name "serviceberry" tree (also known as Juneberry) enshrines the long romances made necessary by the American frontier. The fruit was called serviceberry because the tree blossomed in early spring, at the earliest time of the year when the roads had thawed out and were dry enough for the circuit-riding preacher to make his rounds to marry those couples who had been waiting all winter long. They say that sometimes the preacher merely sanctified what were informal arrangements made during winter.

Some old beliefs about love and marriage were associated with birds. Young girls went hunting for bird nests every year. If the first nest a girl found was empty, she would never marry. If she found one egg, she would marry in one year. If she found two eggs, she would marry in two years, and so on.

If a girl saw a yellow bird on a holiday, it was believed she would marry a rich man. If she saw a blue bird, she would marry a poor man and for a red bird, a sailor. And if she saw a sparrow, she would marry a man in love with a small house.

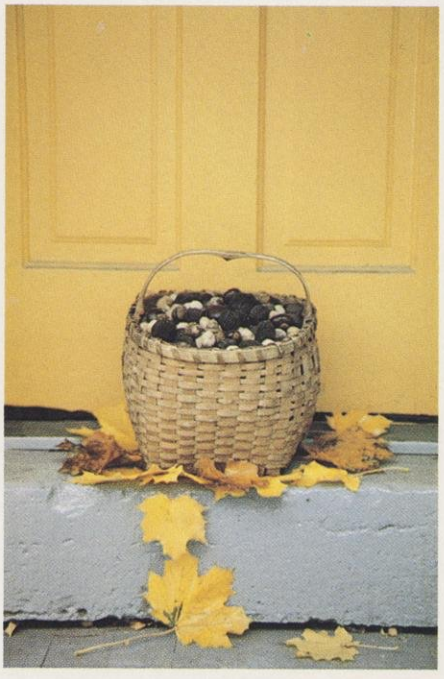
Cardinals were messengers of love. If you threw a kiss to one, it would carry the kiss to your sweetheart.

Not all love lore merely offered hints of what was in store. Some charms were downright manipulative. If you picked the petals off a daisy with a sweetheart in mind, saying, "She loves me, she loves me not," until the last petal was gone and you didn't like the outcome,



Pull apart a leaf from a pussy's toe to learn which of two girls is your sweetheart.

Photos by Wayne Pauly



The doorstep message is negative, but clear: "Nuts to you, Valentine." Photo by Rob Irwin

you could always pick another daisy and try again. Maybe that one would turn your luck around.

Actually, the odds for success were only 50-50 that way. Kids a hundred years ago liked better odds, so as they plucked a daisy's petals, they would recite a more hopeful prognostication:

One I love. Two I love.
Three I love I say.
Four I love with all my heart.
Five I cast away.
Six she loves.
Seven he loves. Eight they both love.
Nine he comes. Ten he tarries.
Eleven he courts. Twelve he marries.
Thirteen honor, fourteen riches.
All the rest, little witches.

If you tally it up, you find the odds in this case are five to two that something good is going to happen.

It was always a stroke of good fortune to come across a four-leaf clover, but there was also reason to prize the two-leaf kind. More than one girl recited this verse:

A clover, a clover of two.
Put it in your right shoe.
The first young man you'll meet
in field, street, or lane
you'll get him or one by his name.

Four eggs means marriage in four years. If you find an empty nest, you will never marry.

The Ojibwa Indians of Wisconsin believed a young man would improve his chances of winning the affection of a young woman with columbine, a lovely scarlet and yellow wildflower that grows on rocky bluffs and sandy areas. The man was supposed to collect and crush the seeds then rub them over his clothing. The seeds are lightly fragrant, and if the man could manage to shake hands with the woman in whom he was interested, it was said the fragrance would go straight to her heart.

Certainly, there's a grain of truth in such charms. All magic aside, it took quite a lot of time to collect enough columbine seeds to make a man sweet-smelling, and any Ojibwa maiden realized that. She who was the object of such enterprise could not help but be flattered and impressed.

Pioneer women, meanwhile, were advised that if they wanted to win over an attractive young man, they should bake him a black walnut cake. Naturally, any gift helped a man take notice of a doting lady. But a walnut cake was special. It is no easy task to crack open the shell of a black walnut and pry out the meat. So if a woman went to all that trouble for you, you were very grateful.

Folklore is not strictly a thing of the past, of course. Each period of history contributes its share, and ours is no exception. Among the contemporary love games and charms is this ritual, concocted by an anonymous Wisconsin man as a clever way of ending a disappointing love affair.

The man would walk into the woods and gather from the forest floor all the acorns, horse chestnuts and black walnuts he could find. Then he would place them in a basket and leave it on the steps of his former heartthrob. When she opened the door and found the basket, the message was clear: Nuts to you!

It worked, too.

"One, I love, two, I love, three, I love I say..."

Crushed yarrow leaves under your pillow prompt dreams of your future mate.