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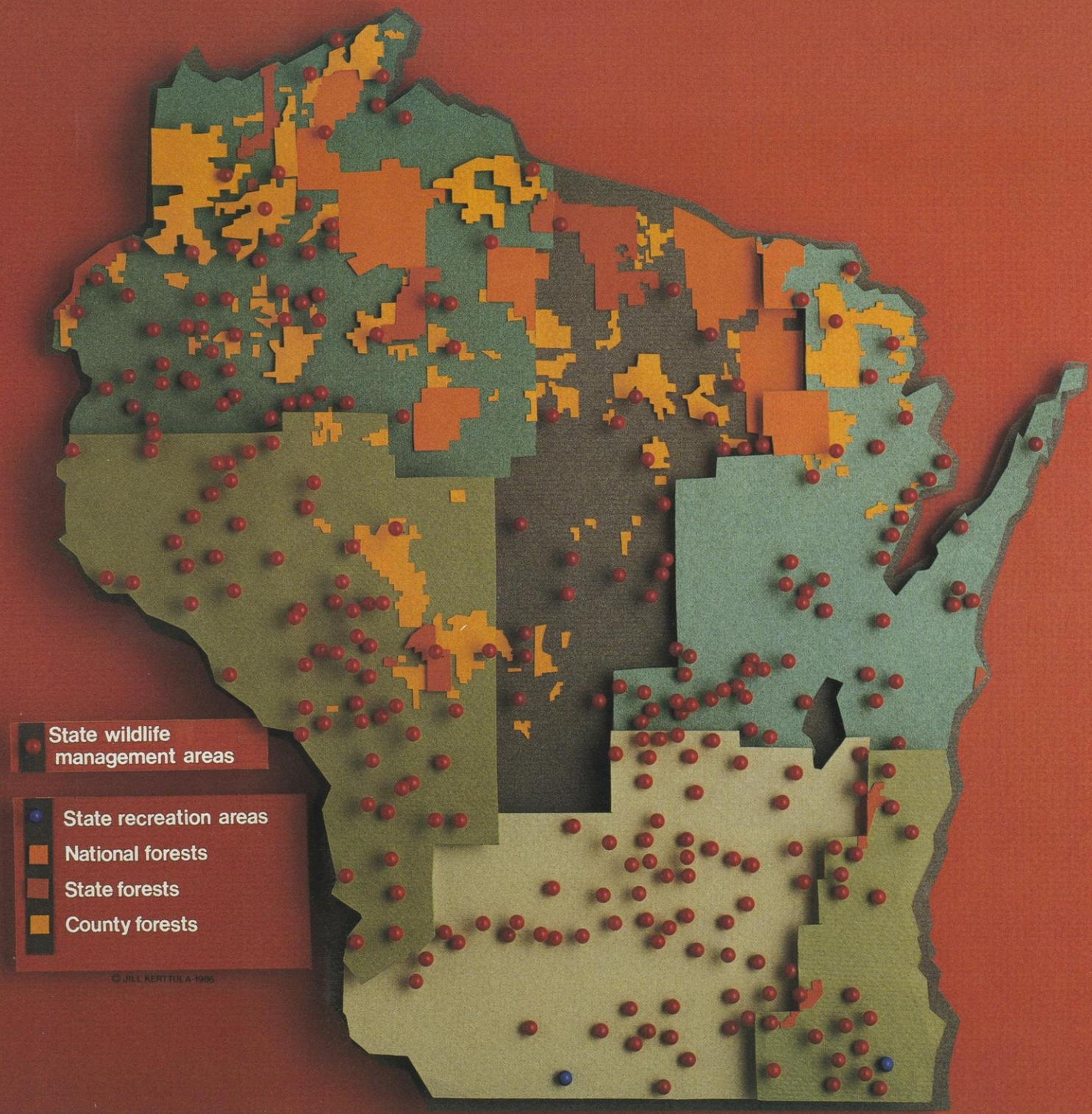
P-R wins for wildlife:

50 years of the Pittman-Robertson Act in Wisconsin



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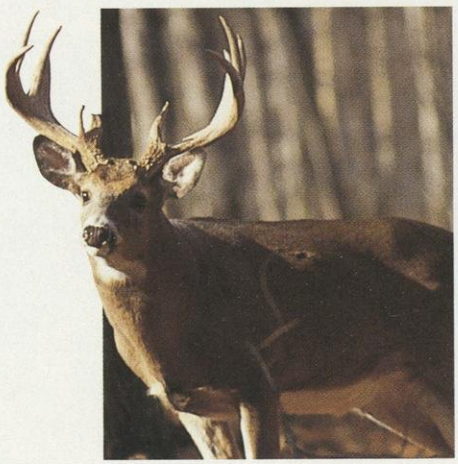

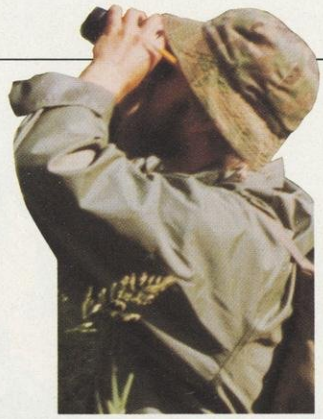

This Pittman-Robertson anniversary publication was coordinated by David L. Gjestson, Bureau of Wildlife Management and Thomas J. Niebauer, Bureau of Aid Programs.

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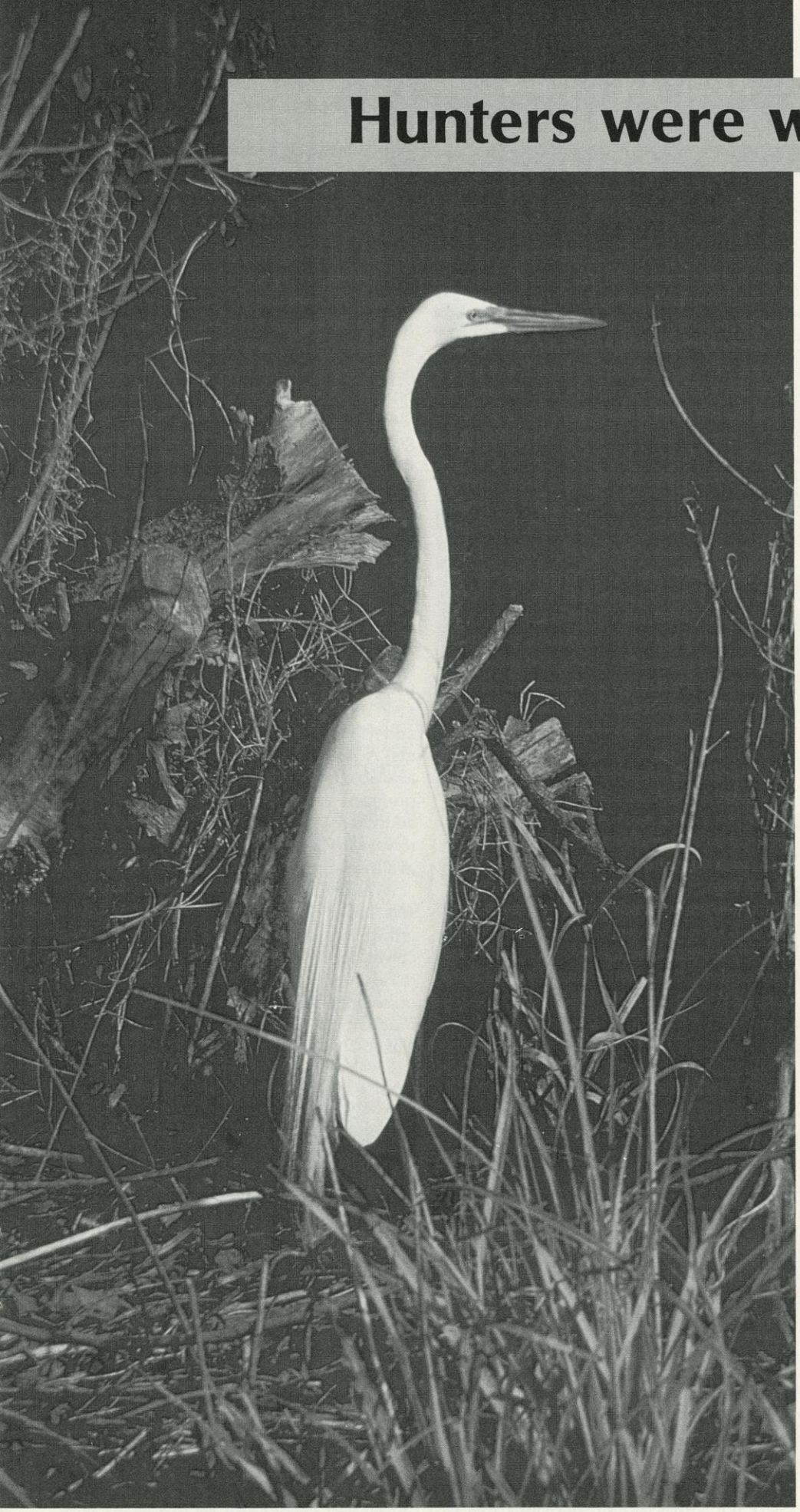
Hunters were willing to pay



The great egret is a threatened species helped by hunters through P-R.
Photo by Herbert Lange

Thomas J. Niebauer,
Federal Aids Coordinator,
Bureau of Aid Programs

A brief history of the Pittman-Robertson Act for Wildlife Restoration.

Back about 1930, a group of dedicated hunters got together and formed an organization called "More Game Birds in America." The idea was to raise money for waterfowl habitat, nationwide. In 1931 they published a plan called *More Waterfowl by Assisting Nature* and one suggestion for raising funds was a tax on sporting ammunition—one cent per shell—to be supplemented by state governments on a specified formula. In June of 1932, the tax legislation got through Congress. It was a 10% excise tax on sporting arms and ammunition. But the money wasn't earmarked to help wildlife. It went into the federal treasury.

Over the next several years, more and more hunting groups, organizations and individuals supported the exise tax idea, which eventually broadened to include all wild birds and mammals, not just waterfowl. These same groups also campaigned hard for Congress to earmark the income. In essence, they volunteered to tax themselves.

In 1936, President Franklin D. Roosevelt, at the urging of J.N. "Ding" Darling, sponsored the first North American Wildlife Conference. Habitat loss was its major theme. That same year, the International Association of Game, Fish and Conservation Commissioners worked with members of Congress to improve the new legislation. They dusted off the old planks and, after reviewing other federal grant-in-aid statutes, again proposed earmarking. Under their bill, wildlife benefits would be tied to and paid for by the10% excise tax (now 11%) on sporting arms and ammunition. The tax was already being collected from manufacturers and importers.

Introduced in the two houses by Senator Key Pittman of Nevada and Representative Willis Robertson of Virginia, the bill sailed through Congress and was signed by President Roosevelt on September 2, 1937. Officially entitled the *Federal Aid in Wildlife Restoration Act*, it is now commonly re-

Fish and the Dingell-Johnson (D-J) program

D-J does for fish what P-R does for wildlife. Named the Federal Aid in Sport Fish Restoration Act, but commonly referred to as Dingell-Johnson or D-J, for many years Wisconsin's share of this tax on sport fishing equipment amounted to about $1.2-million annually. The money usually went for fishery land acquisition and research.

In 1984, however, the Wallop-Breaux Amendment became law. Heavily supported by anglers and boaters, it raised Wisconsin's apportionment to $4-million in 1986. Like P-R, D-J is a "user pays" program, and the user volunteered to pay. Plans for the new funds include motorboat access facilities, habitat development, expanded management-oriented research, improved nonboating access to fishing projects, intensified maintenance of DNR owned fishery areas and an ambitious aquatic resources education project. Watch for articles about these new programs in future issues of *Wisconsin Natural Resources.*

Phil Sanders, longtime Kenosha conservation activist

"Sportsmen didn't hesitate to pay their fair share, and that was reflected in improved hunting and fishing."

ferred to as Pittman-Robertson or simply P-R after the sponsoring legislators. P-R was so innovative, it gave birth to a new science — professional wildlife management. The classic ideas of Aldo Leopold expressed in his 1933 textbook, *Game Management*, were tested and implemented because P-R funds were available.

This long struggle, finalized with legislation, was to have a profound effect on all outdoors. Hunters — the purchasers of sporting arms and ammunition — were to foot the bill for a multitude of programs that would benefit every man, woman, and child in the country. P-R also inspired companion benefits for anglers through an excise tax on fishing equipment passed in 1956.

Statutory Requirements

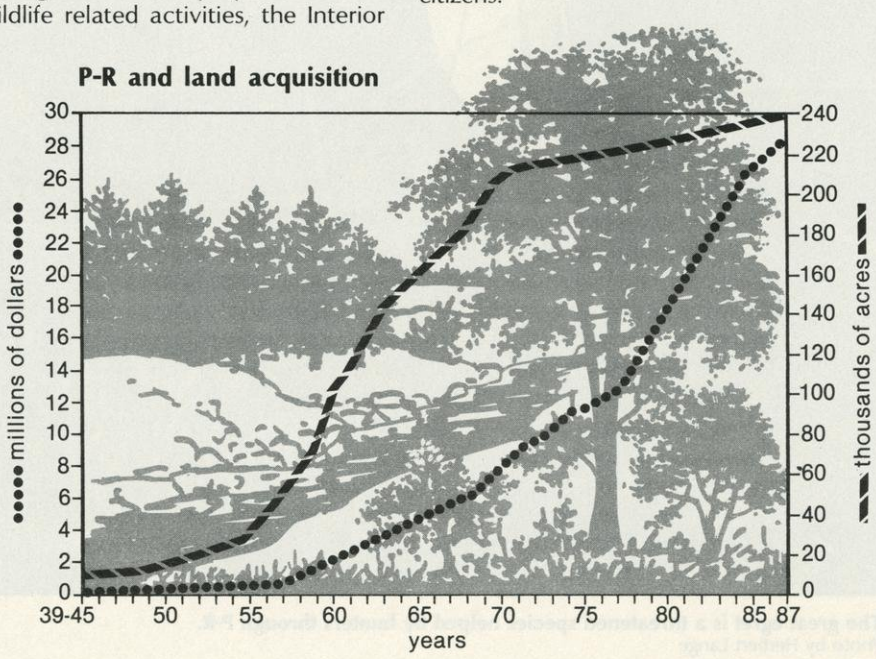
The P-R Act included a very simple, but vital administrative mechanism known as "Assent Legislation." Under it, the states had to endorse provisions of the P-R Act, pass legislation for conservation of wildlife and prohibit the diversion of hunter license fees to non-wildlife purposes. The requirement against diversion of license fees has proven to be a real life saver for many state wildlife programs. During times of financial crisis, state legislatures have occasionally tried to transfer funds from conservation departments to other branches of government not funded by user fees. But P-R legislation prohibits this and the US Department of Interior, which administers the program makes sure such raids never occur. In Wisconsin, the Legislature has never attempted to divert hunting license fees to other uses, although at times lawmakers have had to be reminded of P-R's assent provisions.

The P-R Act provides for federal grants-in-aid of up to 75% of total cost. Under it, states design and submit proposals for certain wildlife related activities, the Interior Department gives its okay, states do the work using their own money and then request reimbursement. The amount available annually is based on a formula which considers size of the state and number of licensed hunters. Because Wisconsin is relatively large and has over 700,000 hunters, we have fared well. Our apportionment for 1985-86 was $3,200,000, which ranked 7th among all states and territories.

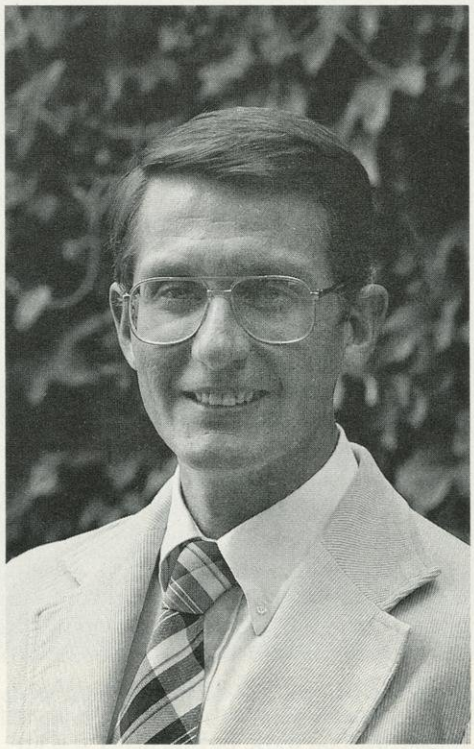
In 1948, Congress amended the P-R Act to create a "permanent indefinite appropriation," a change of immeasureable benefit. It means that Congress recognized that only the user pays and unless the user, the hunter, wants something changed, Congress will not become directly involved. Annually, in October, the US Treasury tells the Secretary of Interior how much excise tax has been collected during the past year. The Secretary then divides the funds based on the hunter-area formula and sends a letter notifying each state of its apportionment. Congress does not get directly involved. The result is continuous availability of funds without the annual headache of worrying whether Congress will appropriate the money.

In 1971, the Act was again amended to add a10% excise tax on pistols and revolvers. A portion of these funds were made available for a hunter education and safety program. In 1972, another Amendment added an 11% excise tax on bows and arrows with a portion of these funds also available for education and safety.

Wisconsin's first apportionment in 1939 was about $31,000, but by 1986 it had grown to the present $3,200,000. Total received to date has been in excess of $44.8 million - for habitat development, land acquisition, research, hunter education and much more of benefit to all Wisconsin citizens.



Pittman-Robertson,
an ensign for the future



DNR photo

Steven W. Miller, Director, Bureau of Wildlife Management

Fifty years ago, P-R made broad-scale scientific wildlife management possible. Today it stands as a model by which we can solve present problems.

Love and concern for wild animals by the hunting public plus a financial commitment from government started the Pittman-Robertson legacy 50 years ago. It heralded the beginning of significant and serious wildlife management in the United States. Until then, efforts by the states and federal government had been modest and severely hampered by lack of dollars. But in 1937, P-R changed all that. Its most important, but probably least publicized success was to create a science of wildlife management and a cadre of professional wildlife managers.

Before Pittman-Robertson, shakily financed state fish and game agencies concentrated almost exclusively on law enforcement, predator control, maintenance of refuges and raising game birds in pens for release during the hunting season. Executives were often political appointees with no special training or expertise and the policies of incumbents were often reversed by successors. With no scientific knowledge or communication among agencies, one state might launch an "experiment" that had already failed in another. There was little information on animal behavior or habitat needs.

Fortunately, the US Biological Survey, which ran the program in those days, recognized this shortcoming. It required all personnel hired by state agencies with P-R funds to be "trained and competent to perform their duties." The value of this requirement is almost impossible to overstate. It heralded the strength of today's Wisconsin program in which all 70 wildlife managers, our 15 wildlife researchers and many technicians have undergraduate or advanced ecology degrees. Back then, state agencies were able to start hiring university wildlife research graduates. Armed with new knowledge and techniques, these scientists re-established populations of white-tailed deer, wild turkey, pronghorn antelope, wood ducks and other species. As they learned more about wildlife and communicated this knowledge to the public, support for wildlife conservation increased.

P-R also had unexpected benefits. The habitat it set aside for game species also sheltered nongame animals like songbirds, small mammals, reptiles and amphibians. These less-noticed creatures began to receive attention from wildlife biologists, and in recent years, many agencies have developed special programs for them.

More than 30 states now have income tax check-offs which allow citizens to contribute modest amounts for nongame work. At the federal level, financing similar to P-R has been proposed, which would tax currently untaxed outdoor recreation equipment to fund nongame programs. It is a system proven by the test of time.

While administrators look for a reliable and independent source of funding for nongame species, P-R continues to do plenty. Nationwide, in the past several years it has paid for studies, relocations and other management activities for sandhill cranes, bald and golden eagles, bison, Indiana bats, sea otters, barn owls, least, common and Forster's terns, osprey, peregrine falcons, least shrews, red-necked grebes, blacktail prairie dogs, piping plovers, great egrets, loggerhead shrikes, mottled ducks, red-shouldered hawks, and grizzly bears. All this plus the habitat benefits from acquisition and management focused on "game" animals! What began as a federal-state partnership to conserve game species has evolved into a highly sophisticated, science-based program to keep American wildlife populations of all kinds in healthy balance. Not only hunters, but millions of Americans who have no interest in hunting have benefited. Roughly 70% of visitors using lands purchased with P-R funds are not hunting; they are birdwatching, taking photographs, hiking, camping, or simply enjoying nature.

Healthy wildlife populations also produce substantial economic benefits. In 1980, according to the US Fish and Wildlife Service, Wisconsin hunters spent an estimated $247-million on equipment, licenses, fees and travel. Those who enjoy birdwatching, bird feeding, wildlife photography and related activities spent an estimated $500-million more. Much of this spending—and the accompanying creation of jobs—is an outgrowth of Pittman-Robertson, accomplished at no cost to the general taxpayer.

While P-R successes in Wisconsin and elsewhere are substantial and impressive, they are no panacea. Problems and challenges still confront us.

The habitat base on public and private lands is always foremost in the minds of wildlife managers. Unless there is enough good quality food, water, shelter and living

P-R and ORAP

Tax monies provided DNR through Wisconsin's Outdoor Recreation Action Program (ORAP) have played an important role in stretching wildlife dollars. While Pittman-Robertson pays up to 75% of the total cost for a particular wildlife project, DNR must still provide at least 25% in matching funds. In many cases, those funds come from ORAP.

ORAP and P-R combined have purchased almost 380,000 acres of public land spread over 218 wildlife areas for hunting, trapping, fishing and many other outdoor activities. Over $37-million has been spent on land acquisition through 1986. Even though most of the funds were derived from the excise tax on hunting equipment, non-hunters have also benefited extensively since national surveys have shown that on many wildlife areas 80 to 85% of the use is by hikers, bird watchers and other non-hunters.

In addition to land acquisition, ORAP has been used to foster a unique partnership with 28 northern and central Wisconsin counties. It funds a nickel-an-acre grant program, originally earmarked mostly for deer habitat improvement on county forests. This ORAP money matches federal P-R dollars to make the program go twice as far. About $125,000 per year has been spent ever since 1970 on such projects as aspen management, wildlife openings, access trails and cover in deer yards. Thousands of acres of habitat have been improved for a multitude of species The counties, DNR and the federal government have enjoyed a partnership that goes far beyond the original deer management objective. Endangered, threatened and nongame species, timber, local employment and good, sound forest management have all benefited.

space, all in the proper arrangement, wildlife will not thrive.

While we must maintain existing management levels on Wisconsin wildlife areas, on state and county forests and other public lands and waters, we plan to do much more to integrate nongame habitat needs into traditional techniques. For example, we'll address the needs of cavity nesting birds and wildlife by incorporating snag management guidelines into forest management. We'll be more involved in planning for diversity of age and tree species in forests and continue to actively assist foresters in managing key timber types such as aspen and oak. We'll continue to maintain forest openings, use prescribed burning, plant dense nesting cover and create flowages—all tested ways of improving quality and quantity of wildlife habitat. We'll also work more intensively with existing flowages and shallow lakes to prevent or correct habitat loss resulting from eutrophication, sedimentation or natural aging. P-R dollars will be hard at work in all these things.

A new thrust will stress wildlife management on private lands. This work will include both game and nongame and be integrated with forestry, agriculture, urban and suburban development. Since about 30 million of Wisconsin's 36 million acres are privately owned and an estimated 75% of our wildlife lives on those private acres, it is important that DNR actively assist the owners in providing for wildlife. A private lands pilot project funded by P-R in Dodge County is teaching us methods which will be applied elsewhere around the state.

Another problem involves hunter access to private lands. This is being addressed through tax incentives under the Managed Forest Law and experimentally on farmland through a program called Project Respect. About two-thirds of the landowners enrolled under the Managed Forest Law, which is independent of P-R, have opted for a tax break in exchange for allowing public access to their property. So far Project Respect, which is funded by P-R, gets mixed reviews from farmers. It's being tried in 11 counties and has enrolled about 100,000 acres. Under it, landowners can easily control the number and quality of hunters through a system of permits. In exchange they get free signs, shrubs, plants, a wildlife habitat plan and advice on management.

Another major focus is education and public involvement in wildlife programs. I believe enjoying wildlife is a lifelong pursuit. An individual's knowledge and experience should never cease, but become richer and more meaningful with time. We need to improve wildlife educational opportunities at both the basic and advanced levels.

In 1985, we introduced Project WILD to Wisconsin's primary and secondary schools. A cooperative venture of our Bureaus of Wildlife Management and Information and Education with the Department of Public Instruction, it has trained 1,000 teachers so far. The response has been tremendous - as if Project WILD were feeding a long unsatisfied hunger. A P-R project will evaluate Project WILD to ensure that its effectiveness is being realized.

Providing top quality hunting and trapping opportunities remain high on the department agenda. These are major forms of outdoor recreation with significant P-R involvement. Future hunting opportunities will largely depend upon how successful we are in protecting and improving habitats for game. P-R management and research projects will play a critical role. Deer, black bear, wild turkey, ducks, geese, and grouse are important game species and will continue to benefit from P-R funded activities.

Hunters and trappers themselves will receive training to improve their skills. P-R monies will be used to make sure new hunters learn proper techniques and behavior and to help upgrade adult abilities.

The Pittman-Robertson Program took root during a very difficult era in our national economy and in wildlife conservation. Despite the strained economic and social climate of the 1930s, spirited conservationists with vision who wanted to leave a wildlife heritage for future Americans, did not become faint-hearted. They would not allow wildlife conservation to be relegated to the back seat in relation to other national problems. They pressed on and succeeded and we now enjoy the fruits of their vision and persistence.

The late 1980s are remarkably similar. The national economy, especially farming, is suffering. Wildlife habitat is being lost at a rapid pace due to uncontrolled and unplanned urbanization and modern agricultural methods. A tremendous amount of wildlife conservation work will have to be done in the next 50 years. The P-R program will do its share, but contributions from hunters alone are no longer enough. Problems are too large and too complex for a single group of wildlife enthusiasts to bear all the burden. In Wisconsin, I'm optimistic that all those who claim affection for and sincere interest in wildlife can join together and unitedly address the problems we face. The P-R Program is an ensign of what can and does work. Let's continue to use it well and model new programs after it to accomplish new goals that will meet the new visions our future requires.

A DNR specialist talks to a Dodge County farmer about habitat management. Financed by P-R, this new Private Lands Wildlife Management Program is expected to significantly increase wildlife populations as it takes hold around Wisconsin. In the past, most management was done on state-owned lands.
Photo by Alan Crossley

Hunters like these finance a wildlife management program that stimulates the Wisconsin economy to the tune of about $752-million per year. Nonhunters benefit too. Photo by John Kubisiak

Turkey restoration in Wisconsin

Ronald H. Nicklaus, Mississippi River Wildlife Manager

The bird is back and thriving, a Pittman-Robertson triumph! Hunters and landowners are pleased.

Turkey restoration in Wisconsin started humbly enough. Back in 1974 some folks had the notion that the wild turkey might once again be able to survive in this state and that the southwest, particularly Vernon County, was the place to start.

Most everybody had been once around the dance floor with unsuccessful game farm bird introduction and had come back thoroughly convinced that wild-trapped stock was the only way to go. Hence, the first problem — where to get hold of some wild, wild turkeys. Through formal and informal contacts, John Keener, then Chief of Wildlife Management, cooked up an agreement with the State of Missouri Conservation Department to trade Coulee Region ruffed grouse for wild trapped Missouri turkeys at a rate of three grouse for one turkey. Missouri wanted to restore ruffed grouse to their state, so the agreement was mutually beneficial. Up to that point, all work on the project was in planning. Planning doesn't cost much, and can even be fun. Doing, however, takes money and someone's time, and that takes more money.

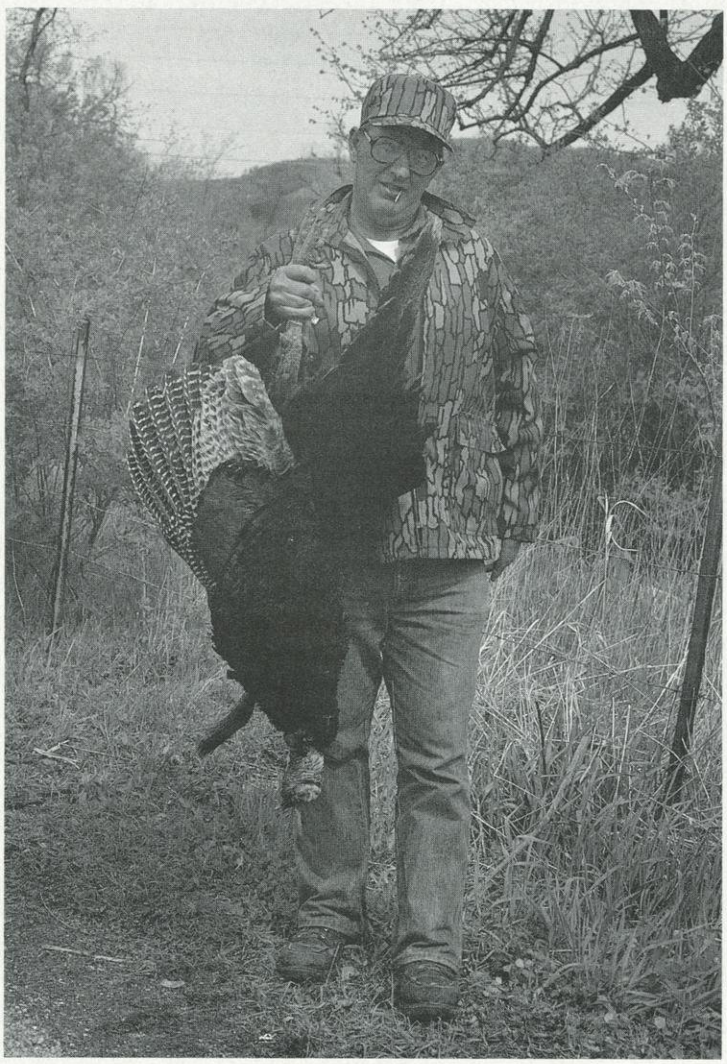
The early seventies were a time of great budget stress. Someone was always calling for austerity, belt-tightening or other money-saving cliches. New projects faced tremendous competition for dollars from existing programs. Luckily, however, at that time Pittman-Robertson funds were available for turkeys because wildlife restoration is a primary goal of the P-R program.

A crew of department personnel, interns and limited term employees was assembled to trap ruffed grouse in Vernon County. With money to put gas in the pickup and buy materials to build traps, the ruffed grouse trade began. It was slow at first, but gradually accelerated to a rate of 140 to 160 birds shipped per year. The trade has continued, on and off, for almost 10 years, though at lower levels for the last six.

Phase two began January 21, 1976 with arrival of the turkeys in Wisconsin. It was an historic occasion, watching truly wild turkeys, liberated from their transport boxes, fly across the snowscape and disappear into the woods. After that, the real work began. This was not to be a casual flirtation with turkey release and little or no follow-up. Newly introduced birds were closely monitored for survival and subsequent reproduction success. Winter and spring surveys were done to document occupied range. Much was learned of feeding habits and habitat preference. John Nelson, wildlife technician, came on board in April of 1976 and for 10 years was to be at the very center of all that needed to be done. The Turkey Program, as it had come to be known, grew and blossomed with the steady support of P-R funding.

Throughout the early years of monitoring, surveys and initial releases, a dependence on the goodwill of landowners, who were nearly all farmers, was realized. It was apparent that DNR had appeared to most rural folks as a regulator and little else. New environmental protection laws were not always readily accepted, and a popular bumper sticker in our country at the time read, "What God giveth, the DNR taketh away." It was interesting to note the landowners' response when DNR gave something back in the form of a new wildlife species. Many farmers took a very protective attitude toward the turkey, and poaching never became a serious problem. Working with many farmers on the survey established acquaintances that remain useful and important for DNR today. Many farmers and others asked how the program was funded and learned of our P-R dollar commitment. They seemed genuinely pleased at seeing a return from the money paid on this excise tax. Working with private landowners was to become much more important as the program evolved.

The next chapter in turkey restoration brought a need for ensuring stability of the turkey as a component of the landscape. By



Thanks to P-R, Don Syverson of Eau Claire bagged this 22-pound tom. Photo by Charles Burke

◀Wisconsin's first turkey release in the driftless area. Tags help wildlife managers monitor the birds' activities. Photo by author.

1979, nature had thrown some of the very worst weather possible at Wisconsin's new turkey population. Summer flooding and a record severe winter tested the ability of *Sylvestris* to remain here. But field monitoring showed the turkeys had survived. Adaptation to agriculture was one of the most important reasons. There was lots of farm range to occupy. Stability would come with good numbers of birds over a broad range so that no single local event could cause disaster. Trapping and transplanting to suitable but unoccupied range began. The need for more manpower, equipment, and fuel increased and the locally famous "turkey trapping crew" was formed in 1979. These were some of the most dedicated people I've ever run across, working long hours, every day in the week to trap birds. This went on for the next seven years. Hundreds of transplanted birds later, the results show.

P-R dollars paid the bills and kept the paychecks coming. It was fitting that hunter dollars financed this effort, because in 1981, we began to think about a spring turkey season. Planning for Wisconsin's first wild turkey hunt since 1887 took about a year and involved input from many of the farmers we had worked with in the past. Hunters and others also took great interest and were somewhat surprised to learn that P-R dollars had paid for the project. They seemed happy with the return on their investment.

After many meetings, a framework was hammered out and enabling legislation passed. The season featured zones, time periods and the first landowner preference system in the state. A quality spring gobbler hunt was the goal. However, not too many folks in Wisconsin knew much about turkey hunting. No 1887 survivors! The need for hunter education about turkeys was obvious.

Charles Burke, one of the limited term employees from the trapping crew, was charged with formulating a course, and through a team approach came up with one of the finest in the country. The tremendous help of volunteer instructors from the Wisconsin State Chapter of the National Wild Turkey Federation was one key to success. Thousands of hunters and others have been through the program in four years, but the first ones in 1983 were the most important. These were the folks who set the tradition for other Wisconsin turkey hunters to follow. They did it in grand style, and today turkey hunters continue to distinguish themselves as safe, ethical and courteous sportsmen and women. Attendance at the course is voluntary and each year about 65% of permit holders sit through the four hours of videos, lectures, and discussion on safety, natural history, landowner relations, and hunting techniques.

As you may have guessed, P-R dollars paid for salaries and supplies in the turkey hunter education course and season evaluation. The ability to get the job done was possible through this assured funding. Hunters are taking more birds in Wisconsin every year, but the numbers don't mean much compared to the experience of turkey hunting. I don't know if Mr. Pittman or Mr. Robertson ever dreamed their law would help restore wild turkeys to Wisconsin. But if they could see it, I think they'd be pleased.

John Keener,
retired Wildlife Bureau chief

"Pittman-Robertson was really the beginning of professional wildlife management in America."

P-R and habitat on the northern forests

Ronald G. Eckstein, Wildlife Manager, Rhinelander
John F. Olson, Wildlife Manager, Mercer

A program for deer that evolved into one for all wildlife.

Originally the great pineries of the North grew on sandy soils with jack pine, red pine and scrub oak on the lightest sands, and white pine on the sandy loams. Mixed conifer-hardwoods dominated the heavier soils. But in the lifetime of a lumberjack, Wisconsin's great forests disappeared. By the 1930s, logging and fire had transformed the landscape into great expanses of open brushland. This, coupled with unregulated hunting and trapping wiped out moose, caribou, wolverine, fisher and pine marten. However, the new habitat brought grassland animals like prairie chicken, sharp-tailed grouse, bluebirds, robins and thirteen-lined ground squirrels.

After 1930, with reforestation and effective fire control, the brushlands grew into forest again. Young, rather open aspen dominated the landscape providing ideal habitat for forest game. In about 10 years, this change plus restricted hunting caused a peak in deer numbers. Ruffed grouse, woodcock, and snowshoe hare also increased.

As long ago as 1940, just three years after passage of the new Pittman-Robertson Act, the first research biologist was hired with P-R money to study the northern deer herd. The studies found browse lines and starved animals on the winter range. There was not enough food to support a deer herd of 30 to 50 animals per square mile.

To help, P-R projects were undertaken on the Nicolet National Forest in 1951 and 1954. Typical activities included deer yard mapping, winter browse cutting, browse production studies, clover seeding on logging roads and hunter access projects. But more intensive P-R studies began in 1959 in which state researchers documented the importance of good quality summer range in maintaining deer populations. Their work showed that regions with extensive young aspen, oak, and jackpine plus abundant openings supported a much higher deer population than regions with second-growth hardwoods, large conifer swamps and few openings. Grass openings during early spring and late fall were identified as a critical element.

By the mid 1960's, openings were disappearing fast across the North as a result of ecological succession, reforestation and other influences. Again P-R came to the rescue. It funded a large scale Deer Habitat Development Program that concentrated on openings, aspen maintenance and trail development. In 1974, this was broadened to include all forest habitat and projects were set up on county, state and national forests.

Today, aspen maintenance is still the most critical and time-dependent habitat activity. Sun-loving aspen sprouts will not survive under the shade of other trees and this means either handcutting or bulldozer shearing. Since 1969, over 76,000 acres have been treated in this manner, although recently, increased utilization has allowed contracts to specify that loggers cut all small, residual hardwoods during clearcuts of mature aspen. This saves P-R wildlife dollars.

Work on openings consists of either mantaining those that exist on public forests or building new ones. To date, over 18,000 acres are kept up on the sites of frost pockets, burned over or clearcut lands, old logging camps, farmsteads, or old Civilian Conservation Corps camps. New openings are constructed with bulldozers, then planted to clover and bluegrass where existing natural openings fall below 1% of the landscape; about 2,000 acres in the past 17 years.

Wildlife managers work with foresters to develop age class diversity in oak stands and to save scattered oaks in clearcut areas for acorns and dens. Some 750 miles of gated hunter walking trails have been developed through P-R funded projects. Deer yards have been mapped and managed to maintain and develop conifer cover and increase winter browse. Habitat maintenance for sharp-tailed grouse involves construction of firebreaks and controlled burns to preserve large open areas favored by this species. And there are many other projects.

In the future, P-R will help integrate forestry and wildlife programs even more. Basic work with aspen, forest openings, trails and deer yards will continue, but emphasis will increase on habitat for all wildlife. Specific requirements of nongame creatures will be considered in timber sales. Programs to manage for snags, den trees, reserve trees, old growth and age class diversity will be strengthened. The public forests will be younger in some areas and older in others, criss-crossed by trails and dotted with openings, yet roadless and with large areas of unbroken forest canopy.

Wildlife work on the northern forests funded by P-R has evolved from a habitat program for deer only, to one for all forest wildlife. At the turn of the century, the question was: farms or forests in the north? Economics finally answered in favor of forests. Today P-R funds help keep that forest productive for many forms of wildlife as well as for wood products. The three thrive together. It has been a good partnership.

A northern forest opening planted to winter rye will attract deer and geese.
Photo by John Olson

Research

The Pittman-Robertson tax that hunters imposed on themselves 50 years ago was designed to help restore declining wildlife, but before it could happen, answers were needed to many biological questions. This required research. In the past half-century, Wisconsin hunters and trappers have contributed more than $7-million for studies of both game and nongame species. These pictures show a few of the targeted species.

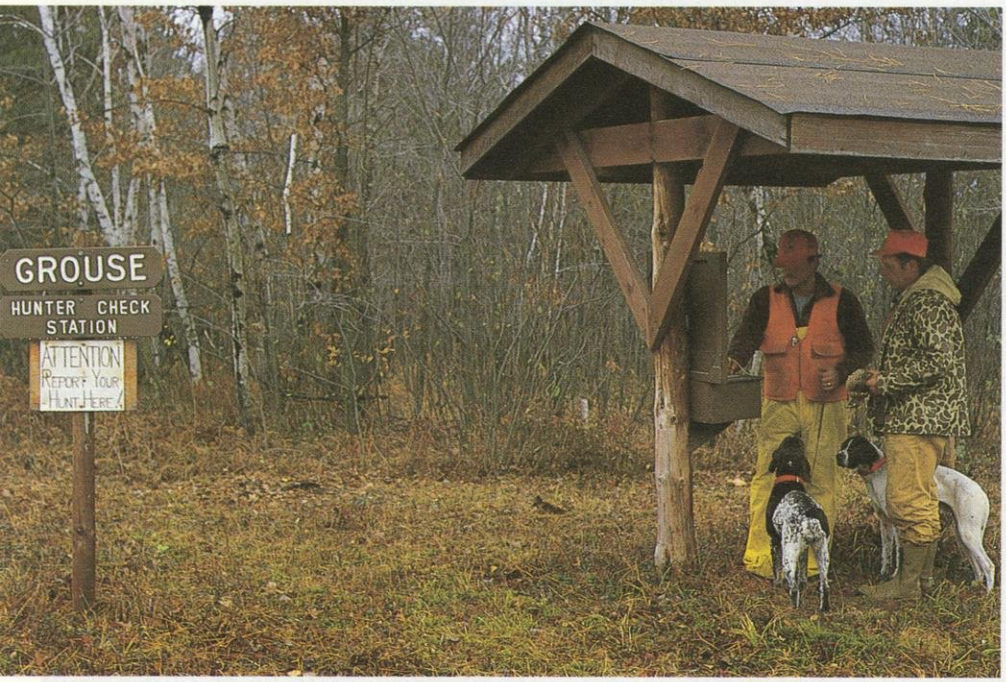


Photo by John Kubisiak

Ruffed grouse

This is Wisconsin's most abundant game bird. Excellent woodland habitat is the reason. Through P-R-funded research it was learned that ruffed grouse prefer mixed-aged aspen stands for food and shelter. Since Wisconsin's big paper industry uses aspen as a raw material, timber harvest for pulp is also good for grouse. Researchers continue to seek the elusive cause of the bird's familiar cyclic ups and downs. Right now they're looking at a tiny intestinal parasite called the Dispharynx. Other studies show that unharvested private woodlots are slowly converting to non-aspen species and may have a long term effect on grouse populations. Work is also being done on censusing, behavior, distribution and habitat. Harvest estimates, roadside drumming counts and grouse roost tallies are also made to help manage Wisconsin's ruffed grouse.

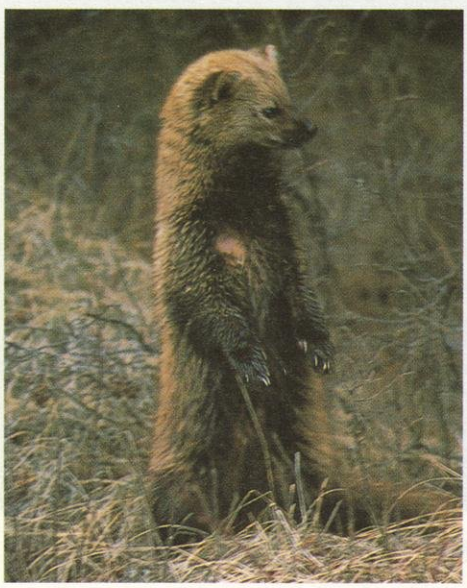


Photo by Roger Powell

Fisher

In 1985, fisher were trapped in Wisconsin for the first time in nearly 70 years. The season yielded 38 animals for 269 special permit holders. A research milestone, it confirmed that this valuable furbearer had returned from absolute zero to a population that could sustain trapping. Fisher now range across the entire northern fourth of the state, descendents of animals released in the Nicolet and Chequamegon National Forests between 1956 and 1967. They are prized not only for their pretty pelts, but also because they prey on porcupines which kill trees.

Photo by Stephen J. Lang

Ringnecked pheasant

One of Wisconsin's most studied wildlife species, research has confirmed that neither hunting nor stocking have much to do with the bird's abundance. The key to high populations, P-R supported studies reveal, is year-round undisturbed cover, interspersed among farm fields. This popular gamebird was at its peak in Wisconsin during the soil bank days of the 1950s when numbers were estimated at half a million. Since then, clean farming, wetland drainage, fencerow loss, herbicides and pesticides have caused a continuing decline. Current P-R-funded research focuses on impacts of agricultural chemicals, stocking genetically wild birds to compare surivival with pen-reared pheasants, and studies of population distribution as it relates to wetland drainage.

Photo by Mark Wallner

Muskrat

P-R financed research has revealed that even more than most species, muskrat cannot be stockpiled. High populations usually coincide with low trapping effort, therefore, regulations should be adjusted to take surplus animals before they die from natural causes. Currently, Pittman-Robertson is helping finance a study at Horicon Marsh that will evaluate the effects of weather, pelt price, prior harvest and water levels on muskrat harvest.

Photo by Dean Tvedt

Black bear

Studies started in 1958 helped change the status of bear in Wisconsin from wildlife pest to trophy animal and resulted in a separate season. Today, management is guided by a comprehensive population survey system developed by researchers using P-R funds. In 1984 the survey revealed that the number of bear had dropped from 6,100 in 1981 to only 4,000. This prompted the Natural Resources Board to close the season until a law passed authorizing DNR to set limits on the number of bear hunters. To make sure there would be no overharvest, when the season reopened in 1986 only 860 permits were issued. The harvest dropped from 1,130 to 472. Future P-R-funded research will work toward setting up management zones so that populations can be manipulated regionally. P-R has also financed studies on nuisance bear, the survival of yearlings and the impacts of dog hunting.

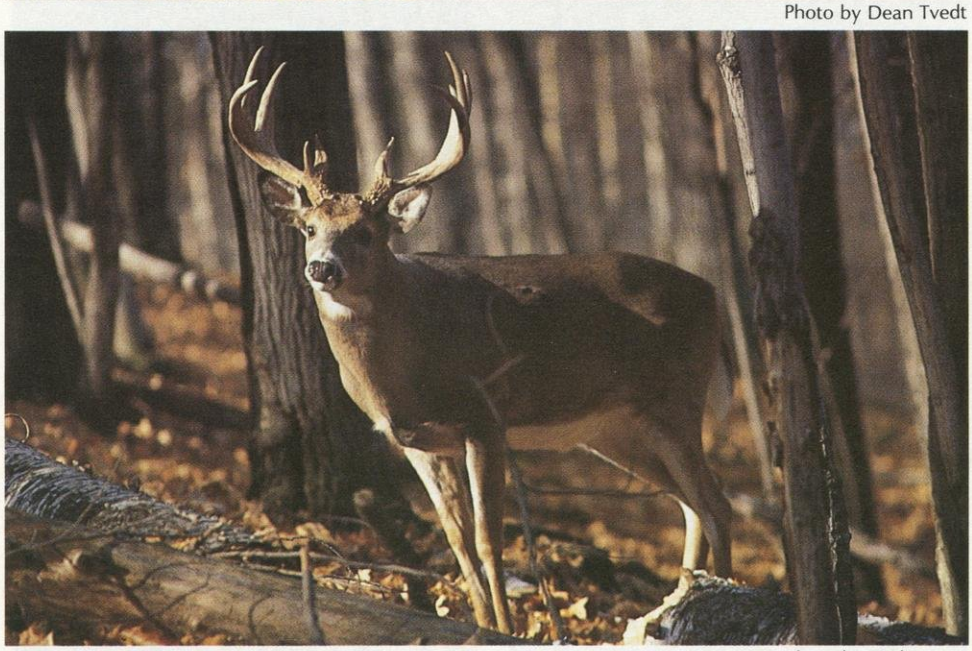


Photo by Herb Lange

White-tailed deer

Deer research funded by P-R has been going on in Wisconsin ever since 1940. Guided by its results, managers have made Wisconsin one of the leading deer states in the nation. Hunters shot 325,000 animals in 1985, a record number that reflects public acceptance of long-resisted early research. It had found that shooting antlerless deer to reduce overwinter populations and prevent starvation in crowded winter deer yards was critical to a healthy herd. "Buck-only" seasons died hard, but by 1963 the first hunt was held in which a prescribed number of antlerless deer were harvested. This evolved into the present variable quota system with more than 100 management units and precise quotas for each one.

Management units, set up by research, divide the state by highway boundary into areas of similar deer habitat. When harvest data, winter loss and other influences are factored in, quota recommendations can be made for each unit. A winter severity index, also developed through P-R funding, quantifies the impact of cold temperatures and deep snow on overwinter deer survival. Habitat research has found that grassy forest openings, aspen, oak and jackpine are important to carrying capacity in the North. Other studies showed aspen leaves to be a pivotal food source in summer and grass and acorns important in spring and fall.

Experiments at the 9,000-acre fenced-in Sandhill Wildlife Area have included handgun and muzzle loading seasons, studies on hunter success under various regulations and a complete shootout of deer to evaluate its effect on habitat.

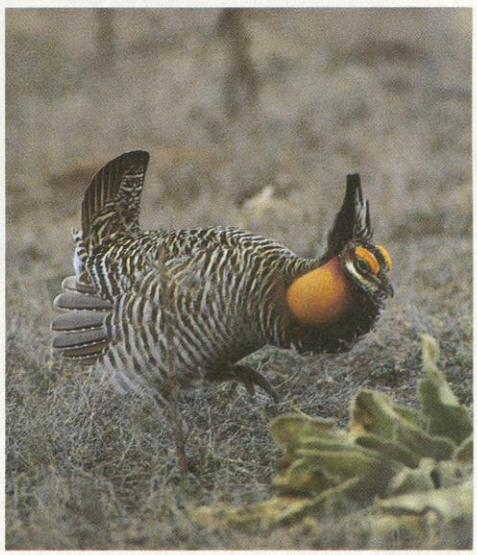


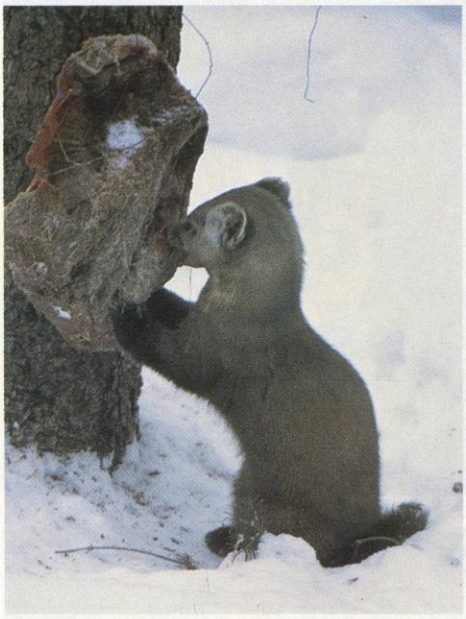
Photo by Dean Tvedt

Prairie chicken

Rescued from almost certain demise, the bird's survival should now be assured as result of knowledge gained from 22 years of P-R-funded research. Drs. Frederick and Frances Hamerstrom, who conducted the research, invited the public in to help observe prairie chicken courtship on the booming grounds. This inspired donations that bought 11,000 acres of land on the bird's last stronghold on Buena Vista Marsh. Laid out in grid fashion, the land preserves a minimum amount of crucial grassland habitat. Hamerstrom says the only threat that remains might come from agricultural chemicals.

P-R: the wolf and the dickeybird benefit too

Peregrine falcon.
Photo by Herbert Lange

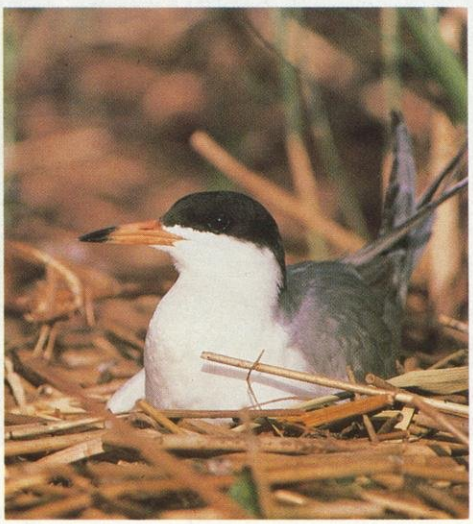


Pine marten.
DNR photo

Great blue heron.
Photo by Mark Wallner

Barn owl.
DNR photo

Bobolink.
Photo by Stephen J. Lang

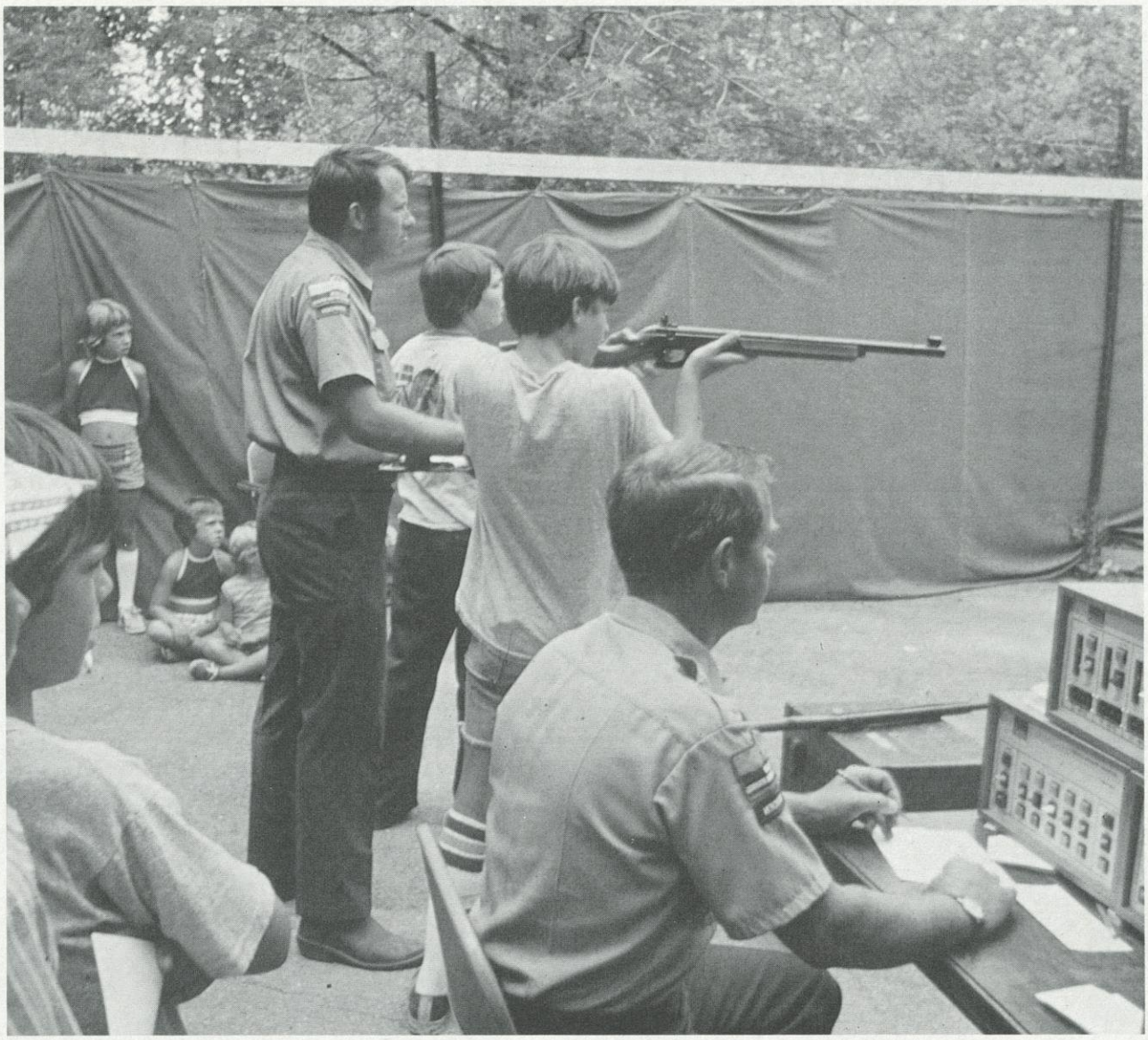


Forster's tern.
Photo by Paul Kivlin

The so-called "nongame" species are a very vital part of the Wisconsin wildlife scene. Even though Pittman-Robertson money comes from hunters, they gladly spend part of it on the unhunted species. As a result, our ability to understand, manage, and protect these species steadily improves and many have already been saved from total wipeout.

For example, nongame P-R dollars have been spent to:

- Purchase a prime parcel of land in southeast Wisconsin used by migrating hawks. It is now a State Natural Area for banding, research and observation.
- Census and monitor Wisconsin timber wolves. A system has been worked out to recover animals from the wild and eventually manage this endangered species.
- Re-establish pine marten in northeast Wisconsin and monitor their progress.
- Develop plans to bring back several Wisconsin endangered birds including the common tern, Forster's tern and osprey. Success has already been achieved with the double-crested cormorant which is now abundant enough to be removed from the endangered list.
- Study the natural history and status of such species as the great horned owl, sandhill crane, red-tailed hawk, and prairie chicken.
- Reintroduce barn owls to Wisconsin.
- Census heron and egret colonies to determine abundance and distribution.



Hunter education is now mandatory in Wisconsin. P-R helps pay for the program, which last year taught 23,000 youngsters about gun safety and ethics. A significant drop in hunting accidents has already occurred.
DNR photo

P-R in Hunter Education

Homer E. Moe, Hunter Education Administrator

Wisconsin's hunter education program began in 1967 as a six-hour voluntary hunter safety course. In 1971 it received a Pittman-Robertson allocation of $110,000 annually and by 1986 this funding had increased to $360,000.

Today, P-R helps foot the bill for six DNR district law enforcement safety specialists who are responsible for hunter education, boat, snowmobile and recreational vehicle safety programs.

Hunter education is now mandatory in Wisconsin and is required for persons born on or after January 1, 1973. The law applies to both gun and bow hunters. The education they receive involves more than safe handling of firearms and equipment. It covers the responsibility of hunters to wildlife, the environment, landowners and others as well as the principles of wildlife management and conservation.

In 1985, the first full year of mandatory hunter education in Wisconsin, nearly 23,000 graduated from the course — most of them youngsters who had just reached the age of 12. This compares to an average of 18,000 graduates the prior five years. Many parents also participated along with their sons and daughters.

Since the program began in 1967, Wisconsin's hunting accident rate has steadily declined from 43.5 to the present 10.6 accidents per 100,000 licenses issued. An annual hunting accident analysis has enabled DNR to concentrate on prevention techniques for the most frequent accidents and emphasize these techniques with students. Deer hunting mishaps continued downward even while the number of hunters increased and the deer kill set new records. Pittman-Robertson funding was a major factor in achieving this remarkable record and 2,200 dedicated Wisconsin volunteer hunter education instructors can be thanked for it. They have trained more than 300,000 individuals since the program began. Conservation wardens, district law enforcement safety specialists and other DNR personnel assist in this effort. Most courses are sponsored locally by conservation and gun clubs, schools, law enforcement agencies, military units and a wide variety of community service organizations.

The outgrowth has been not only fewer accidents, but also an improved hunter image and a better relationship with landowners.

Wisconsin Natural Areas

By Ron Kurowski

Dramatic Changes

Wisconsin's landscape has experienced dramatic changes in the 150 years since intensive settlement began. Little remains of the natural plant and animal communities which formed following the melting of the last glaciers about 12,000 years ago. The scattered remnants which have escaped most, if not all exploitation, are called natural areas. These small but precious areas are often the last refuges for rare and endangered plants and animals. Unique and significant geological and archaeological features are frequently included within natural areas boundaries.

We owe much to Wisconsin's early conservationists, who in 1951 recognized the loss of natural areas and their importance, and fostered the first state natural areas preservation program in the United States.

State natural areas are devoted to scientific research, the teaching of conservation and natural history, and especially to the preservation of their natural values for the use of future generations. They are not intended for intensive recreational uses like picnicking or camping.

High quality natural areas are identified and evaluated by program staff and the Natural Areas Preservation Council. Preservation is accomplished by designation of tracts already in public ownership through cooperative management agreements or by acquisition of privately owned tracts.

Natural Areas Preservation Council

In 1951 the state legislature established a State Board For The Preservation Of Scientific Areas. This group, now called the Natural Areas Preservation Council is an advisory group to the Department of Natural Resources.

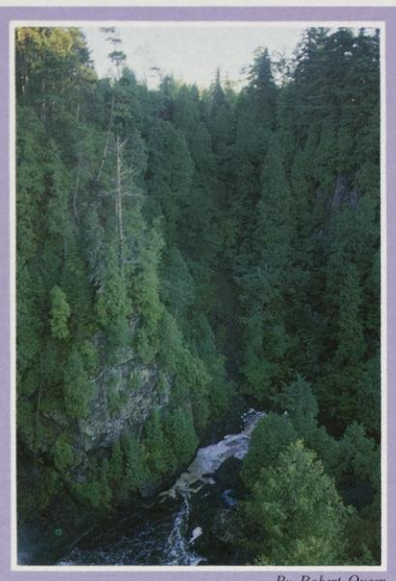
The mission of the Council and one of the goals of the Bureau of Endangered Resources is to locate and preserve a system of state natural areas to protect examples of all types of biotic communities and other significant natural features native to the state...for education, research, and most importantly to secure long term protection of the state's genetic diversity for the benefit of future generations. This formidable task is only accomplished through substantial assistance from a number of public agencies, private organizations and individuals.

Bureau of Endangered Resources

Wisconsin Dept. of Natural Resources
PUBL-ER-034 86

Wisconsin Natural Areas

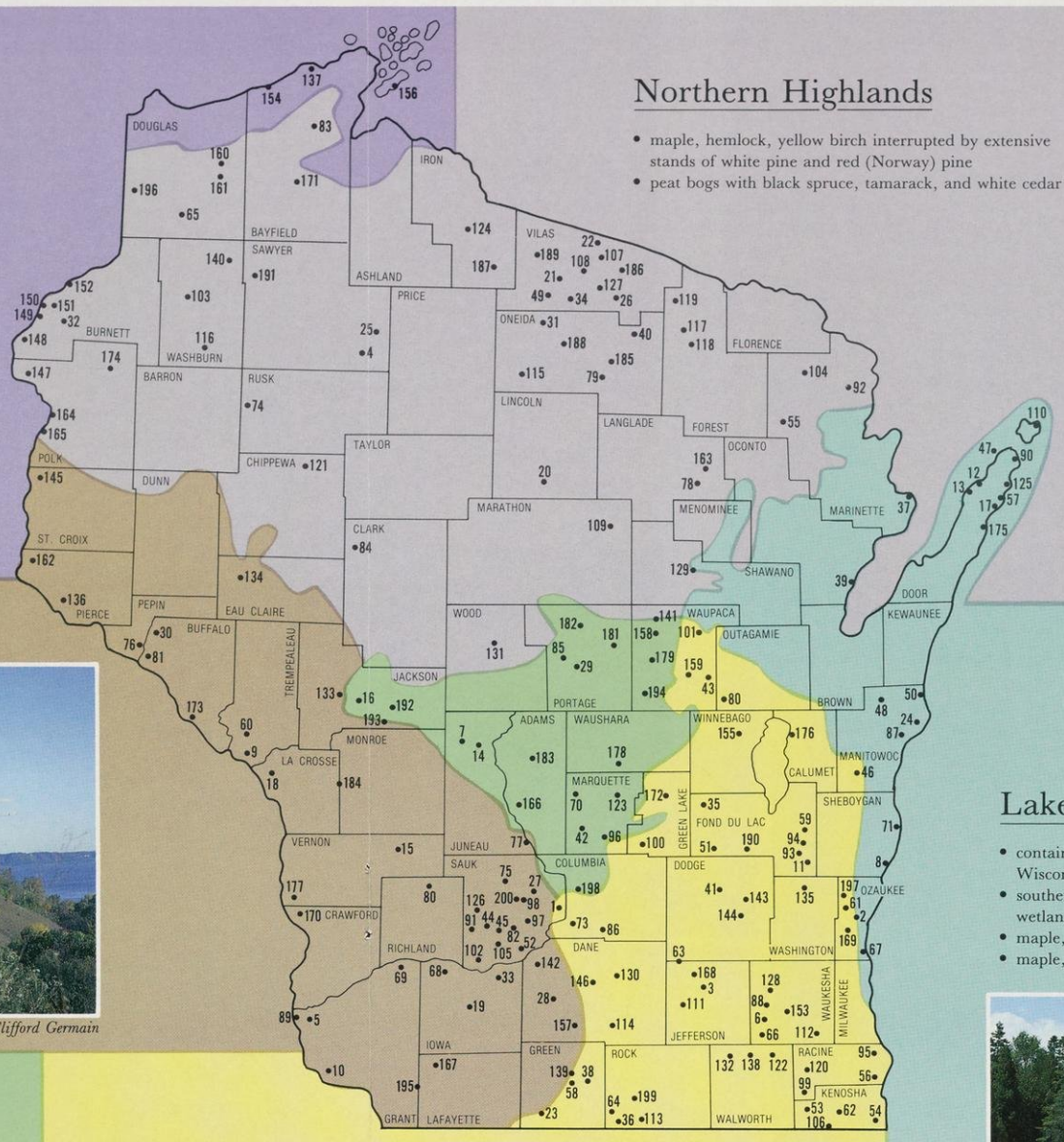
& Natural Divisions



By Robert Queen

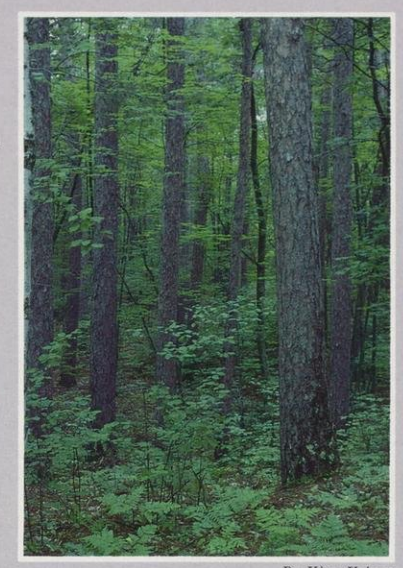
Lake Superior Boreal

- balsam fir and white spruce
- red clays and pink soils
- undulating to rolling plains
- peat extensive in some wetlands



Northern Highlands

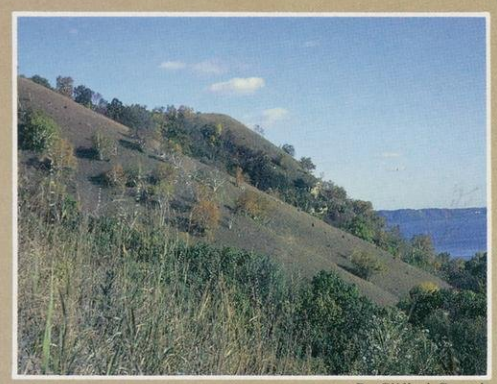
- maple, hemlock, yellow birch interrupted by extensive stands of white pine and red (Norway) pine
- peat bogs with black spruce, tamarack, and white cedar



By Kitty Kohout

Western Driftless Upland

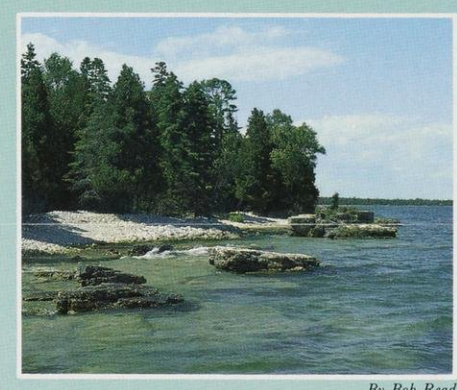
- hilly with little evidence of glaciation
- oak savanna, southern mesic forest
- pure prairie stands
- extensive river bottom forest



By Clifford Germain

Lake Michigan Lowland

- contains most of the American Beech range in Wisconsin
- southern and northern mesic forest interspersed with wetland
- maple, hemlock, yellow birch, and beech (northern)
- maple, basswood, elm, and beech (southern)

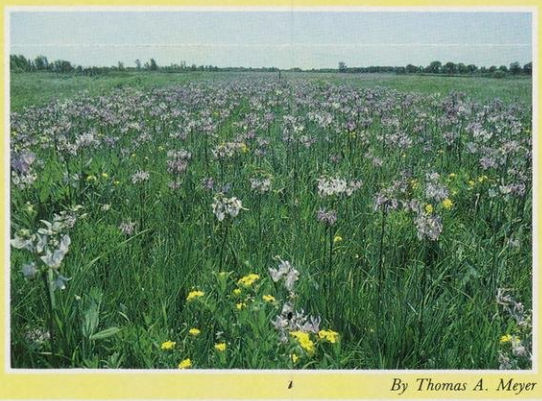


By Bob Read

By Clifford Germain

Central Sands Transition

- nearly level terrain with many sandstone buttes to the west
- oak savanna and pine barrens
- vast wetland communities
- soils feature sand, shallow peats, and mucks



By Thomas A. Meyer

Southeastern Moraines

- sequences of glaciated ridges and lowlands
- southern mesic forest, oak savanna
- pure prairie stands
- many wetland communities

Graphic design by Georgine Price

200 State Natural Areas

*Excellent areas for public visitation.

(January 1986)

1. Parfrey's Glen, Sauk County*
2. Cedarburg Bog, Ozaukee County
3. Faville Prairie, Jefferson County
4. Flambeau River Hardwood Forest, Sawyer County*
5. Wyalusing Hardwood Forest, Grant County
6. Scuppernong Prairie, Waukesha County
7. Necedah Oak-Pine Savanna, Juneau County
8. Cedar Grove Hawk Research Station, Sheboygan County
9. Brady's Bluff Prairie, Trempealeau County*
10. Dewey Heights Prairie, Grant County*
11. Haskell Noyes Memorial Woods, Fond du Lac County*
12. Peninsula Park Beech Forest, Door County
13. Peninsula Park White Cedar Forest, Door County*
14. Necedah Oak-Pine Forest, Juneau County
15. Mt. Pisgah Hemlock-Hardwoods, Vernon County*
16. Castle Mound Pine Forest, Jackson County*
17. The Ridges Sanctuary, Door County*
18. Midway Railroad Prairie, La Crosse County
19. Pine Cliff, Iowa County*
20. Krueger Pines, Lincoln County*
21. Trout Lake Conifer Swamp, Vilas County
22. High Lake Spruce-Balsam Forest, Vilas County
23. Browntown Oak Forest, Green County
24. Wilderness Ridge, Manitowoc County*
25. Lake of the Pines Conifer-Hardwoods, Sawyer County
26. Plum Lake Hemlock Forest, Vilas County*
27. Devil's Lake Oak Forest, Sauk County*
28. New Observatory Woods, Dane County
29. Buena Vista Quarry Prairie, Portage County
30. Tiffany Bottoms, Buffalo County
31. Finnerud Pine Forest, Oneida County
32. Crex Sand Prairie (Barrens), Burnett County*
33. Tower Hill Bottoms, Iowa County
34. Bittersweet Lakes, Vilas County
35. Ripon Prairie, Fond du Lac County
36. Avon Bottoms, Rock County
37. Seagull Bar, Marinette County
38. Abraham's Woods, Green County
39. Charles Pond, Oconto County
40. Rice Lake-Thunder Lake Marsh, Oneida County*
41. Fourmile Island Rookery, Dodge County
42. Summerton Bog, Marquette County
43. Poppy's Rock, Waupaca County
44. Durst Rockshelter, Sauk County
45. Pine Hollow, Sauk County
46. VanderBloemen Bog, Manitowoc County
47. Sister Islands, Door County
48. Maribel Caves, Manitowoc County*
49. Black Tern Bog, Vilas County*
50. Two Creeks Buried Forest, Manitowoc County
51. Waupun Park Maple Forest, Fond du Lac County*
52. Lodde's Mill Bluff, Sauk County
53. New Munster Bog Island, Kenosha County
54. Chiwaukee Prairie, Kenosha County
55. Marinette County Beech Forest, Marinette County
56. Sander's Park Hardwoods, Racine County*
57. Toft Point, Door County
58. Oliver Prairie, Green County
59. Spruce Lake Bog, Fond du Lac County*
60. Tamarack Creek Bog, Trempealeau County
61. Cedarburg Beech Woods, Ozaukee County
62. Silver Lake Bog, Kenosha County
63. Waterloo Fen and Springs, Jefferson County and Dodge County
64. Swenson Wet Prairie, Rock County
65. Solon Springs Sharptail Barrens, Douglas County*
66. Eagle Oak Opening, Waukesha County
67. Fairy Chasm, Ozaukee County
68. Avoca Prairie-Savanna, Iowa County*
69. Blue River Sand Barrens, Grant County
70. Lawrence Creek, Marquette County
71. Kohler Park Dunes, Sheboygan County*
73. Gibraltar Rock, Columbia County
74. Blue Hills Felsenmeer, Rusk County
75. Ableman's Gorge, Sauk County
76. Five-Mile Bluff Prairie, Pepin County
77. Blackhawk Island, Juneau County
78. Flora Spring Pond, Langlade County
79. Holmboe Conifer Forest, Oneida County
80. Hub City Bog, Richland County
81. Nelson-Trevino Bottoms, Buffalo County
82. Baxter's Hollow, Sauk County
83. Moquah Barrens, Bayfield County*
84. Schmidt Maple Woods, Clark County
85. Buena Vista Prairie Chicken Meadow, Portage County
86. Audubon Goose Pond, Columbia County*
87. Point Beach Ridges, Manitowoc County
88. Kettle Moraine Fen and Low Prairie, Waukesha County*
89. Wyalusing Walnut Forest, Grant County*
90. Newport Conifer-Hardwoods, Door County*
91. Honey Creek, Sauk County
92. Miscauno Cedar Swamp, Marinette County
93. Milwaukee River and Swamp, Fond du Lac County*
94. Spring Lake, Fond du Lac County
95. Renak-Polak Maple-Beech Woods, Racine County
96. (Muir's) Ennis Lake-Muir Park, Marquette County*
97. Pine Glen, Sauk County
98. Koshawago Springs, Sauk County
99. Karcher Springs, Racine County
100. Fountain Creek Wet Prairie, Green Lake County*
101. Tellock's Hill Woods, Waupaca County
102. Spring Green Reserve, Sauk County
103. Lampson Moraine Pines, Washburn County
104. Dunbar Barrens, Marinette County*
105. Natural Bridge and Rockshelter, Sauk County*
106. Peat Lake, Kenosha County
107. Johnson Lake Barrens, Vilas County
108. Escanaba Lake Hemlocks, Vilas County
109. Dells of the Eau Claire River, Marathon County*
110. Jackson Harbor Ridges, Door County
111. Bean Lake, Jefferson County*
112. Muskego Park Hardwoods, Waukesha County*
113. Newark Road Prairie, Rock County
114. South Waubesa Wetlands, Dane County
115. Gobler Lake, Oneida County
116. Dory's Bog, Washburn County
117. Scott Lake-Shelp Lake Natural Area, Forest County*
118. Giant White Pine Grove, Forest County*
119. Bose Lake Hemlock-Hardwoods, Forest County
120. Cherry Lake Sedge Meadow, Racine County
121. Plagge Woods, Chippewa County
122. Beulah Bog, Walworth County
123. Comstock Bog-Meadow, Marquette County*
124. Moose Lake Hemlocks, Iron County
125. Mud Lake, Door County
126. Bear Creek Cave, Sauk County
127. Aurora Lake, Vilas County*
128. Ottawa Lake Fen, Waukesha County
129. Jung Hemlock-Beech Forest, Shawano County
130. Cherokee Marsh, Dane County
131. Powers Bluff Maple Woods, Wood County*
132. Young Prairie, Walworth County
133. Gullickson's Glen, Jackson County
134. Putnam Park, Eau Claire County*
135. Kewaskum Maple-Oak Woods, Washington County
136. Trenton Bluff Prairie, Pierce County
137. Bark Bay Slough, Bayfield County*
138. Lulu Lake Fen, Walworth County
139. Muralt Bluff Prairie, Green County*
140. Totagatic Highlands Hemlocks, Washburn County
141. Mud Lake Bog, Waupaca County
142. Mazomanie Bottoms, Dane County*
143. Mayville Ledge Beech-Maple Woods, Dodge County
144. Neda Mine, Dodge County
145. Apple River Canyon, St. Croix County
146. Westport Drumlin Prairie, Dane County
147. Sterling Barrens, Polk County*
148. St. Croix River Swamp Hardwoods, Burnett County
149. Brant Brook Pines and Hardwoods, Burnett County*
150. Ekdall Brook Conifer Swamp, Burnett County
151. Kohler-Peet Swamp Hardwoods, Burnett County
152. St. Croix River Barrens and Cedar Swamp, Burnett County*
153. Genesee Oak Opening and Fen, Waukesha County
154. Port Wing Boreal Forest, Bayfield County*
155. Oshkosh-Larsen Trail Prairies, Winnebago County*
156. Big Bay Sand Spit and Bog, Ashland County*
157. Olson Oak Woods, Dane County
158. Keller Whitcomb Creek Woods, Waupaca County
159. Mukwa Bottomland Forest, Waupaca County
160. Bois Brule Conifer Bog, Douglas County
161. Upper Brule River, Douglas County
162. Kinnickinnic River Gorge and Delta, Pierce County
163. Oxbow Rapids, Upper Wolf River, Langlade County
164. Dalles of the St. Croix River, Polk County*
165. Interstate Lowland Forest, Polk County*
166. Sohlberg Silver Lake, Adams County
167. Belmont Mound Woods, Lafayette County*
168. Snapper Prairie, Jefferson County
169. Kurtz Woods, Ozaukee County
170. Rush Creek, Crawford County*
171. Sajdak Springs, Bayfield County
172. Puchyan Prairie, Green Lake County
173. Whitman Bottoms Floodplain Forest, Buffalo County
174. Tula Lake, Polk County
175. Whitefish Dunes, Door County*
176. High Cliff Escarpment, Calumet County*
177. Battle Bluff Prairie, Vernon County
178. Bass Lake Fen, Waushara County
179. Myklebust Lake, Waupaca County
180. Shaky Lake, Outagamie County
181. New Hope Pines, Portage County
182. Dewey Marsh, Portage County
183. Roche-A-Cri Mound, Adams County
184. La Crosse River Trail Prairie, La Crosse County and Monroe County*
185. Stone Lake Pines, Oneida County
186. Goodyear Springs-East, Vilas County
187. Frog Lake and Pines, Iron County*
188. Wind Pudding Lake, Oneida County*
189. Day Lake, Vilas County*
190. Oakfield Ledge, Fond du Lac County
191. Kissick Alkaline Bog Lake, Sawyer County
192. Washburn Marsh, Jackson County
193. Robinson Creek Pines, Jackson County
194. Pope Lake, Waupaca County*
195. Ipswich Prairie, Lafayette and Grant Counties
196. Black Lake Bog, Douglas County
197. Riveredge Creek and Ephemeral Pond, Ozaukee County
198. Lost Lake, Columbia County
199. Kessler Railroad Prairie, Rock County
200. Pewits Nest, Sauk County

Wisconsin Natural Areas

& Natural Divisions

New Legislation

The Wisconsin legislature, recognizing the urgency of protecting natural areas, established the Natural Areas Match Grant Program in 1985. This legislation was developed by The Nature Conservancy with Department concurrence and built on the existing state natural areas program. The program has four major components: (1) an improved natural heritage inventory program; (2) provision for improving long term protection through legal dedication of public and private sites; (3) a new match grant fund to match private donations for preserving natural areas; (4) stewardship funds for monitoring and managing sites in the state natural areas system.

Prairie White-fringed Orchid
By Mark Martin

Wisconsin Natural Divisions

The map of Wisconsin Natural Divisions shows divisions of the state based on major soils, vegetation and glacial and bedrock geologic features. Within these regions, 32 plant community types including forests, savannas, prairies and wetlands will be protected. In addition, 26 types of aquatic features including lakes and streams of varying physical and chemical conditions have been identified as preservation targets. Especially significant geological features and habitats of threatened and endangered species or other species of special interest are included in the state natural areas system.

Wisconsin's state natural areas are shown on the map and listed below with county.

Natural Heritage Inventory Program

In 1980, several southern Wisconsin counties inventoried 10 years earlier were resurveyed. The follow-up revealed a loss of 10 percent of the natural areas previously identified and another 10 percent seriously damaged.

In times of rapid development, a tool to identify natural areas and the many plant and animal communities that may inhabit them is critical to preservation of rare species statewide.

In 1985 the Natural Heritage Inventory program was established to provide an on-going, up-to-date storehouse of ecological information for botanists, land use planners, land managers and landowners. Access to such information is invaluable during early planning stages for new highways, utility corridors, drainage ditches and other development projects.

This inventory system was established in cooperation with The Nature Conservancy, a private conservation organization responsible for developing the inventory process now active in 40 states. Preservation begins with the information furnished by these comprehensive inventories of natural communities. All the data collected during the inventories is cataloged in an integrated system of maps, computer databases and paper files.

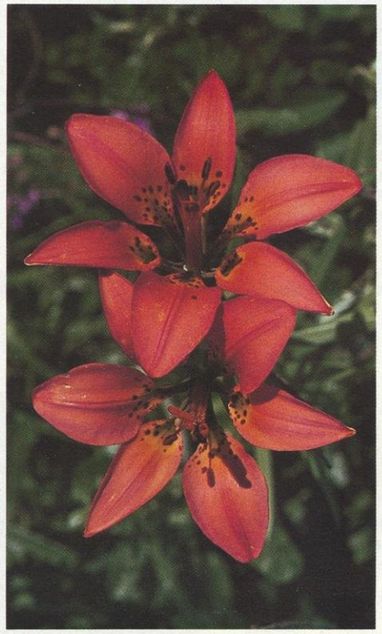
The Natural Heritage Inventory program has three primary goals:

- continually identify the state's rare or unique plants, animals and communities;
- rank them according to how severely endangered they are in Wisconsin and worldwide;
- map their geographical occurrences including quality and viability;

Those natural communities and species that are most in danger of disappearing or even becoming extinct can be saved, but first they must be located and identified. A program to inform private landowners of their preservation options has been initiated by The Nature Conservancy in cooperation with the DNR. The inventory information is used in developing a registry of sites and maintaining landowner contact.

Site Establishment

Over 85% of the current 200 sites have been secured by cooperative agreements on public lands, especially DNR controlled parks, forests, and fish and wildlife areas. Natural areas controlled by universities, counties, federal agencies and private groups are also part of the natural areas system. Designations are made by signed ''memorandum of understanding'' with property administrators and managers. These documents are long term, formal (but not legally binding) commitments to maintain the sites as natural areas.



Prairie Lily
By Mark Martin

Acquisition

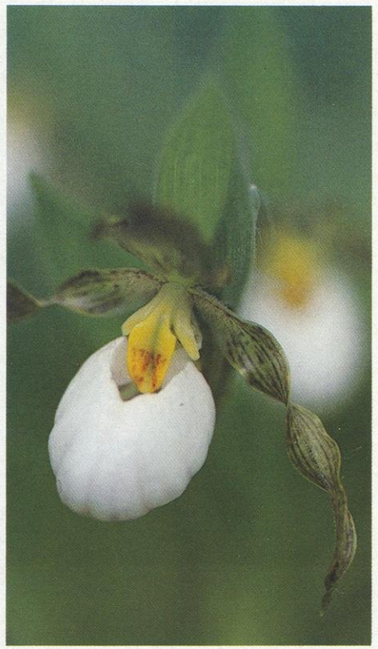
High priority sites on private land are acquired by purchase or through donation and help fill gaps in the natural areas system. A portion of the DNR land budget is devoted to purchase of state natural areas. Though limited, these funds have been important in the acquisition of small isolated natural areas not suited for purchase by other public agencies. Thirty new natural areas encompassing 3,000 acres have been added to the system by direct purchase or donations of land. These purchases are sometimes supplemented by other public and private agencies that also purchase and manage areas with high natural area quality.

Legal Protection

Articles of Dedication provide the strongest long-term legal protection for natural areas in the state. Legally dedicated sites are protected in perpetuity for natural area use and may not be taken for other uses without a finding of urgent and greater public need by the governor and the legislature. The 1985 state legislature gave DNR this tool. Legal dedication agreements are being developed for as many previously established areas as possible.

An additional feature of this legislation is called the Match-Grant Program This provides additional State land acquisition funds to encourage and match-dollar for dollar-donations of cash, gifts of natural areas or partial conservation easements by private individuals and organizations.

This new match-grant opportunity stimulates more private involvement in preserving choice natural areas. By the year 2000 at least 290 state natural areas encompassing 55,000 acres should be established. This represents an addition of 90 new sites and 24,000 acres during the next 15 years. The Match-Grant Program is critically important in preserving choice sites threatened by development on private land.



White Lady's-slipper
By Mark Martin

Site Protection and Management

Management of state natural areas is based on specific plans agreed to by the land managing agency, whether public or private.

Not surprisingly, in most instances, the best management for natural areas is to do nothing except protect them from human disturbance. This means limiting public access and avoiding developments such as campgrounds and picnic sites close to natural areas. Boundary markers and signs delineating natural areas may be purposely omitted to discourage excessive public attention on sensitive areas.

Site property managers and land management specialists from DNR and cooperating agencies and organizations manage intensively about 60 of the state's natural areas. To control encroaching woody species, prescribed burns and cutting are used as management tools on prairies, savannas, fens and sedge meadows.

People are encouraged to visit certain natural areas in the state. In these areas, parking lots, trails, fences and gates have been established to control access and protect the site.

Whether managing natural areas or the people using them, much of the work is made possible through donations to the Endangered Resources Fund.

Research and Educational Use

Natural areas serve as outdoor laboratories for research and teaching. Environmental education and conservation group use of the least fragile sites is permitted. A recent survey of state natural areas use tallied nearly a half million visits. In 1977 approximately 200,000 people visited natural areas in the state. These numbers show a marked increase in interest and use.

The Tax Check-off

The 1983 state legislature established a new opportunity for Wisconsin residents to help protect and manage state natural areas and endangered and nongame wildlife. It's called the *Endangered Resources Fund.* It establishes a line on the state income tax form on which you can donate to help preserve natural areas and habitats for endangered plants and animals and nongame wildlife. Your contribution will help DNR specialists identify and manage natural areas and determine the specific preservation needs for the more than 140 plants and animals on the state endangered and threatened species list.

Your gift of land

If you own an area of natural significance and wish to seek its long term protection, you can donate, will or sell your land to the Department. Besides insuring a gift to future generations, a gift of land may provide you with a substantial tax benefit. For those not financially capable of donating land, other alternatives such as easements or land management agreements are possible or a cash donation is also very helpful.

You may also play a significant role in discovering natural areas. By contacting the Bureau of Endangered Resources about potential valuable areas, you can also help in the preservation effort. Inspections of these areas can be scheduled at no cost to you.

You can also become a volunteer and assist in protecting and managing natural areas in your community.

Groups or individuals willing to help may obtain more information by contacting the Bureau of Endangered Resources, Department of Natural Resources, P.O. Box 7921, Madison, WI 53707.

Conclusions

Since man's development over the eons was largely in a natural world, his future may well depend on preservation of natural diversity. Natural areas protect this diversity. They are a critical link with the past when mankind lived more in harmony with nature. The growth of natural areas and endangered species protection programs across the country is convincing evidence of public recognition that all species have a biotic right to exist and that human welfare is ultimately linked to the natural world.

Protected natural areas and their hundreds of plant and animal species are genetic reservoirs of potential benefit to man. They are vital to scientific research because they provide the best examples of natural processes acting over time without human interference.

Teaching field biology or ecology would be virtually impossible without examples of the various aquatic and terrestrial natural communities. The remnant plant and animal communities show long term success in adapting to their environment, thus they are valuable bench marks against which we can judge the impact of mans increasing effects on the landscape.

Ornate Box Turtle
by Richard Vogt

Wisconsin's Wildlife Disease Program

Terry E. Amundson, Disease Specialist, Bureau of Wildlife Management

Technical Assistance for Wildlife Disease Detection and Prevention is financed by Pittman-Robertson.

Every year, rabies, avian botulism, lead poisoning, canine distemper, sarcoptic mange and other diseases cause sickness or death in Wisconsin wild animals. To combat these outbreaks, the state receives $60,000 annually in P-R monies.

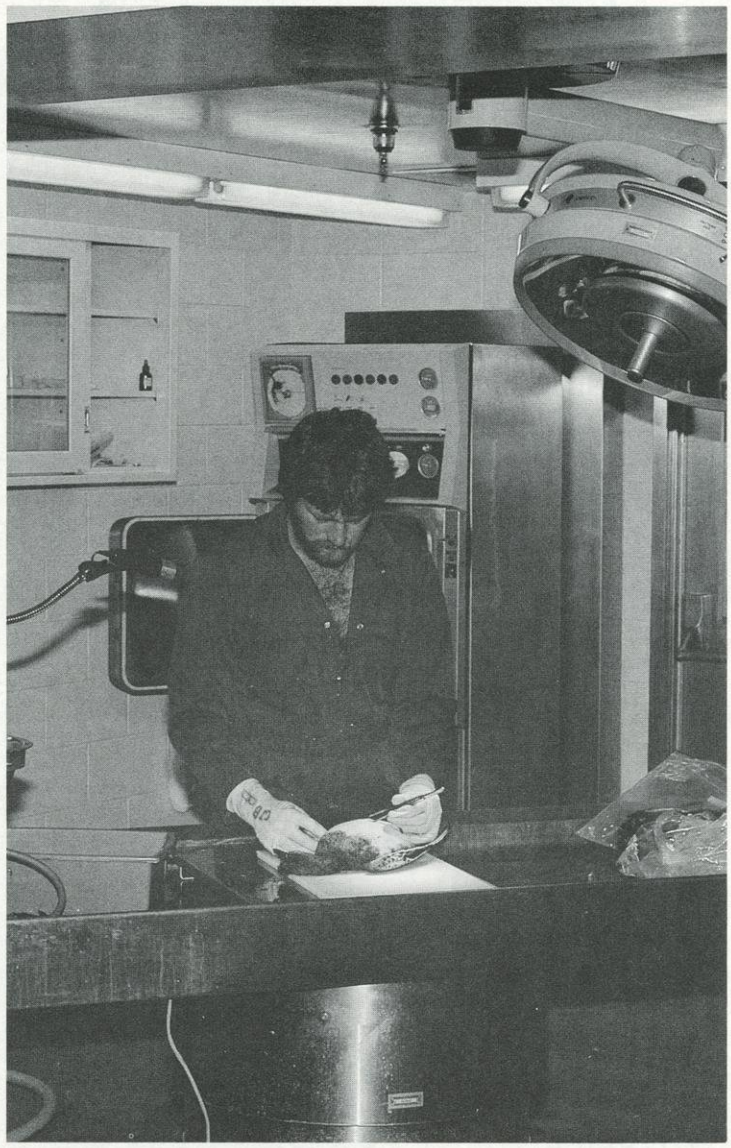
Wisconsin began the program in 1980, expanded it in 1983, and today, is still one of only a handful of states looking into this aspect of wildlife management. The object is to identify the causes of sickness and death in wildlife, to determine the impact of disease on wild animal populations and try to minimize it through management. The program also investigates wildlife's role in disease transmission to domestic animals or humans. Another function is to educate DNR employees and private citizens about symptoms and prevention of wildlife diseases.

Specialists must respond rapidly to outbreaks of disease, but because of limited manpower, depend upon wildlife managers, researchers, conservation wardens and the public to be their "eyes and ears" in spotting disease problems. Once a disease is identified, specialists react accordingly. They may, for example, visit a site where ducks and geese are sick and dying, examine birds and collect specimens to determine the cause of illness. Local wildlife managers will fill them in on the kinds and numbers of animals affected, their feeding areas, hunting pressure and so on. Then, using the skills of a wildlife biologist, veterinarian and private detective, the specialist can make an accurate diagnosis and recommend an effective treatment.

In its six years of existence, Wisconsin's wildlife disease program has been hit with a steady barrage of problems: lead poisoning dieoffs in waterfowl which helped make the decision for statewide use of steel shot; avian botulism, which requires quick recognition, cleanup of infected areas and treatment of sick birds to prevent massive dieoffs; duck plague at a private game farm and a city zoo which was contained before it spread to wild populations; avian cholera and ulcerative enteritis in pheasants at the Poynette Game Farm which were treated with vaccines, food supplements and good sanitation; a preliminary investigation of reproductive failure in Lake Superior eagles which indicates PCB's may be to blame; a tularemia outbreak in beaver at the Sandhill Wildlife Area, which was arrested before it infected any humans; detection of mycoplasmosis in newly-stocked turkeys which could have affected success of the restoration program if it had not been stopped; a public education program prompted by discovery of the *Ixodes* tick (which causes Lyme disease in humans) on deer and many other Wisconsin wild animals; and detection of fatal canine parvovirus in Wisconsin timber wolves, which researchers are attempting to counter through development of a vaccine.

Wisconsin's Pittman-Robertson wildife disease program gets cooperation from and uses the diagnostic facilities of a variety of facilities including the National Wildlife Health Center, the University of Wisconsin School of Veterinary Medicine, the State Laboratory of Hygiene, and the Wisconsin Department of Agriculture's Central Animal Health Laboratory. This cooperation is essential for continued success of the program, which to date has touched only the tip of the iceberg. A rundown of additional problems currently being explored gives a hint of what might be out there: a study of blindness in white-tailed deer fawns; health monitoring of mute swan and ruffed grouse populations; death of herring gulls in Green Bay; canine distemper outbreaks in raccoon; biopolitical assistance with urban waterfowl problems; reproductive physiology investigations of Canada geese; chemical immobilization studies of black bear and furbearers; development of disease contingency plans for confined rearing of pheasants and for major waterfowl areas in Wisconsin; effects of parasitism on ruffed grouse cycles; parasite studies of game farm elk and investigations on accumulation of agricultural pesticides and industrial contaminants in game, nongame and endangered wildlife in Wisconsin.

Demand for such specialized services is bound to grow as natural resources dwindle and intensive use increases. Wisconsin's P-R wildlife disease program has been tested and is ready to meet the demand. It will mean more and healthier wildlife, one of the important objectives of the Pittman-Robertson Act.

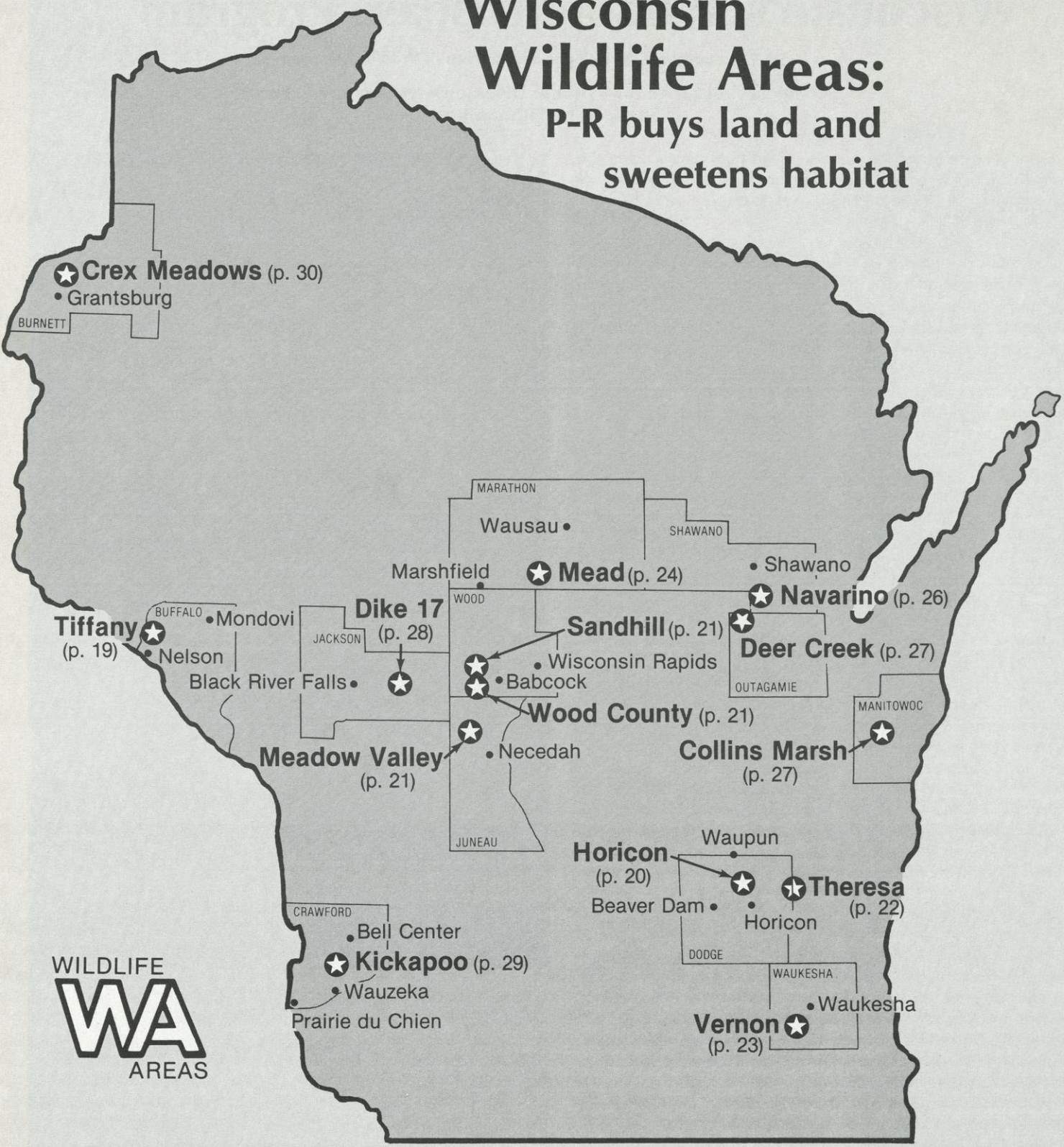


The job of the wildlife disease specialist requires the skills of a biologist, veterinarian and private detective.
DNR photo

◀Collecting specimens after a goose dieoff. Wisconsin's wildlife disease program, financed by $60,000 annually in P-R funds, is one of only a handful in the nation.
Photo by author

Wisconsin Wildlife Areas:

P-R buys land and sweetens habitat



Scattered around Wisconsin are 218 Wildlife Areas that cover nearly 450,000 acres of land. All are open to the general public year 'round and each owes either its very existence or much of its character to the Pittman-Robertson exise tax paid by hunters. Located in all six DNR districts, in remote settings and near big cities, total annual use is estimated at around 2.75-million outdoor recreation days annually. Only about 750,000 days are for hunting and trapping. The rest are for other wildlife related outdoor activities. Described here are a few typical, well-known Wildlife Areas in each district and the activities Pittman-Robertson makes possible.

A deer swims the Chippewa River in the Tiffany bottoms. Photo by David Weitz

Tiffany:
a bottomland paradise

David W. Linderud, Wildlife Manager, Alma

The Chippewa River floodplain became well known for waterfowl hunting and trapping in the late 1930s and early '40s. Many large areas were privately leased until the Nelson, Pepin and Durand Sportsmen's Clubs petitioned for a public hunting and fishing area there. After approval, the first land was purchased in 1946 with Pittman-Robertson money. The new area was named after Herbert O. Tiffany, who sold almost 4,200 acres to the state during the next 20 years.

Located in Buffalo and Pepin Counties at the confluence of the Chippewa and Mississippi rivers, current public ownership amounts to 12,379 acres, a figure that increases almost annually. Because the Mississippi can't carry away coarse sediment that washes down the Chippewa, a partial natural dam has been created on the Mississippi to form Lake Pepin. Sediment from the Chippewa is also trapped by vegetation in Tiffany's sloughs and backwaters so that some are being filled in while new ones are forming. There is constant change.

P-R financed some early development at Tiffany including parking lots and boat launching ramps, clearing of sloughs, tree planting, wood duck houses and construction of several log dams to create small impoundments. However, plans for dams and dikes were eventually abandoned because of highly permeable sandy soils and flooding.

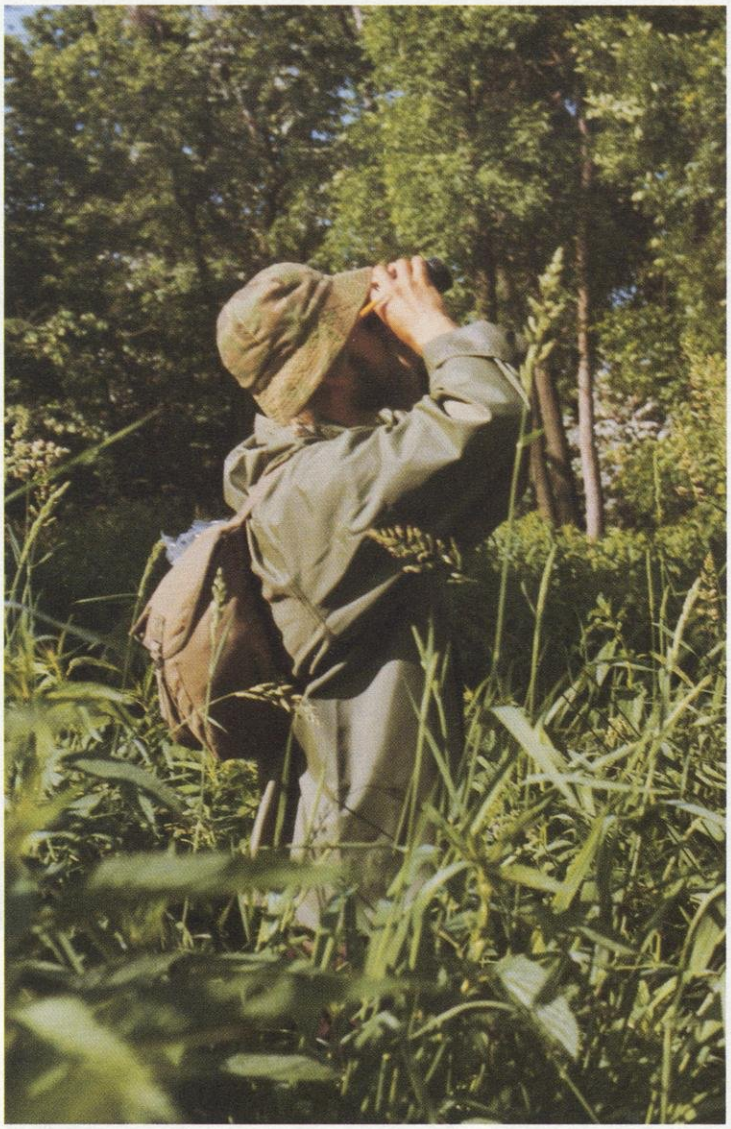
Current management includes maintenance on roads, trails, parking lots, boat launching ramps, and boundary fences and signs. Open meadows, prairies and old farm fields are burned periodically to prevent brush encroachment. The small amount of agricultural land is sharecropped and provides nesting cover and winter food for wildlife.

Tiffany is part of the largest block of lowland hardwoods remaining in the midwest. Timber is harvested to maintain oak and aspen and to provide a mixture of size and age classes in the bottomland forest. In the last five years, 990 cords and 836,220 board feet of timber have been harvested.

Tiffany Wildlife Area provides a home for most species common to the woods and waters of western Wisconsin's coulee country: wood ducks, hooded mergansers and mallards breed here. Beaver, muskrat, mink, otter, raccoon, deer, rabbit, squirrel, coyote, fox, ruffed grouse, pileated woodpeckers and the recently introduced wild turkey are all found at Tiffany. So are a few threatened species: the Cooper's hawk, the greater egret, which has a 400 to 500 nest rookery nearby, Blanding's turtle and the river redhorse and blue sucker. The massasauga (swamp) rattlesnake and the crystal darter, both endangered species, also live here.

Part of the area includes the 402-acre Tiffany Bottoms Scientific Area, which contains lowland hardwood habitat that has been undisturbed for almost 50 years. Silver maple, green ash, basswood, swamp white oak and river birch are the common tree species. The Five-Mile Bluff Scientific Area contains three small xeric limestone bluff prairies that total about six acres. Its plants include big and little bluestem, Indiangrass, sideoats grama, puccoon, birdsfoot violet, blue-eyed grass and bastard toadflax.

Tiffany's diversity of fish, wildlife and plant species combined with the scenic Chippewa River, attract people from all over the midwest during all four seasons to hunt, trap, fish, cross-country ski, hike, canoe, take pictures, watch birds and study nature. It's a place where people can still find a little space and it was all made possible by the Pittman-Robertson Act.



Horicon's abundant resources lure large numbers of birdwatchers, naturalists, hunters, hikers, canoeists, and anglers to the marsh each year. Photo by Greg Matthews

The thousands of migrating Canada geese are Horicon's big attraction. Hunters bag about 20,000 birds per year and an estimated 300,000 spectators show up to watch the geese fly.
Photo by Mark Wallner

Purple loosestrife threatens cattail and other wildlife-supporting plants at Horicon. Getting rid of it isn't easy because most loosestrife is located near a populated area and can't be sprayed with herbicide.
DNR photo

Horicon Marsh:

famous for waterfowl and fur

Charles G. Eveland and Thomas A. Nigus,
Wildlife Managers, Horicon

Horicon Marsh, renowned for its waterfowl since time immemorial, is one of the largest freshwater marshes in the United States. It comprises about 32,000 acres of open water and cattails in central Dodge County. The northern two-thirds of this former glacial lake is a National Wildlife Refuge and the southern third is the state's Horicon Marsh Wildlife Area. About 7,000 of the nearly 11,000 state-owned acres were paid for with Pittman-Robertson funds.

Although primarily a waterfowl area, Horicon is by statute a fur farm, and all proceeds from trapping and sale of pelts go to the state conservation fund. Principle furbearers are muskrat, mink, raccoon, otter, skunk, weasel, fox and opossum. Muskrats are most abundant. They eat the cattails which helps create open water for ducks and geese. At the same time, trapping keeps them in check and helps reduce the damage they do to dikes.

Horicon plays host to nearly 200 bird species; its 15-acre Fourmile Island rookery accommodates a breeding population of 500 great egrets, 1,200 black-crowned night herons and 1,100 great blue herons. Egrets are a threatened species and to improve their nesting chances, managers may install poles and platforms to replace some of the large trees which are toppling due to age and storms.

Thousands of migrating ducks and geese use the area each year for food and sanctuary. Mallards, blue-winged teal, redheads, wood ducks and giant Canada geese raise broods on the marsh. Nest cover planted in the uplands help populations of ducks, pheasants and Hungarian partridge.

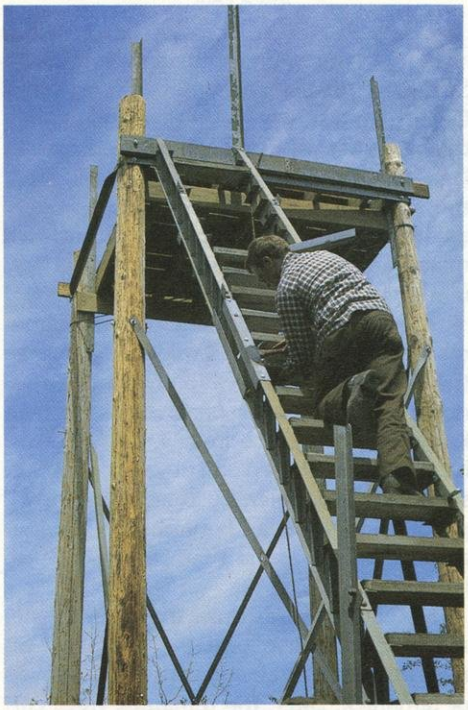
Horicon is an intensive public use property. Besides waterfowl hunting, it has a popular interpretive program and attracts birdwatchers, hikers, canoeists and anglers.

Management and preservation of such a large, diverse and popular area is not without problems. Carp have become a major nuisance and are causing damage to waterways. A drawdown is planned in hopes that nature will repair some of the damage, but this could spread purple loosestrife, a vigorous, exotic wetland plant which lacks any value to fish and wildlife. Use of fish poisons and herbicides must necessarily be limited to protect the environment, so control of these problems is often frustrating.

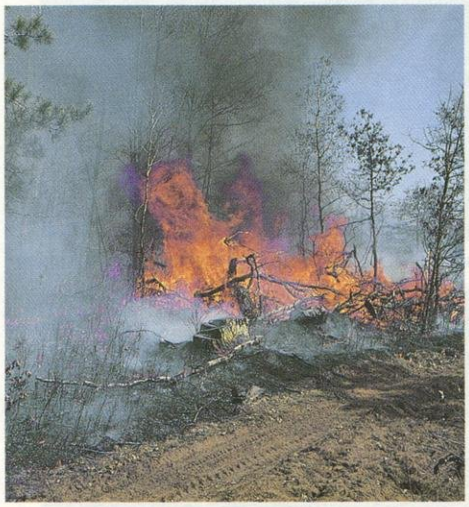
During the 1950s, when the wildlife area was in its infancy, almost $200,000 in P-R funds were used to develop nearly all of the dikes, canals, crop fields, roads and trails that today are the backbone of this impressive area.

Wildlife flourish on the central sands

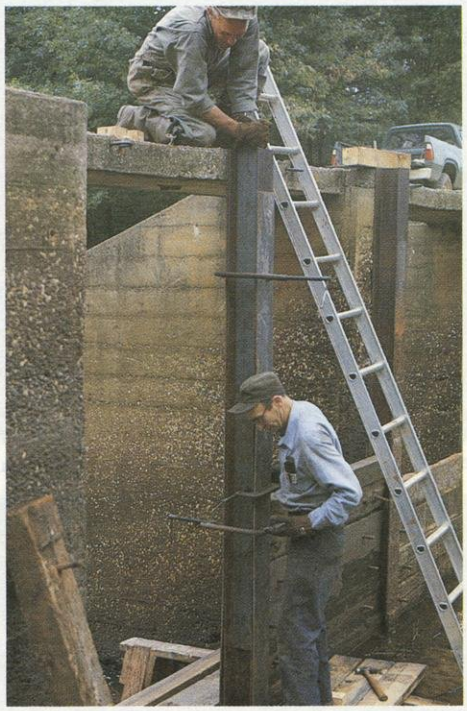
Ned C. Norton, Wildlife Manager, Babcock



Maintenance at a lookout tower. Sandhill has three such towers that are part of a 14-mile self-guided auto tour.
Photo by Joseph Haug



Controlled burns on about 1,300 acres per year maintain openings at Meadow Valley.
Photo by John Kubisiak



Repairing stoplogs at a flowage outlet. The area has 1,400 acres of impoundments.
Photo by Joseph Haug

Sandhill:
demonstrations and experiments

The Sandhill Wildlife Area is a jewel in the Pittman-Robertson crown. It embodies all that P-R was ever meant to accomplish. Its aggressive wildlife habitat research and management programs have produced blueprints that can be applied in any other area of the state. Managed hunts and trapping at Sandhill, funded by P-R, have answered critical questions that have regional, statewide and even national significance. Recent university studies of the value hunters placed on their Sandhill experience have received worldwide acclaim.

The 9,300-acre property contains a 14-mile self-guided interpretive auto tour with three overlook towers, 12 miles of dikes, and a 16-mile deer proof perimeter fence. Annual management activities funded by P-R include 300 acres of prescribed burning, 60 acres of timber sales and 40 acres of aspen maintenance.

More than 70% of the 23,000 people who visit the property each year do so for non-hunting reasons. Although some of these folks hunt, Sandhill illustrates what P-R funds can do to provide wildlife benefits for all Wisconsin's citizens.

Meadow Valley

Meadow Valley Wildlife Area is a 58,000-acre tract in northwestern Juneau County. It is federally owned, but managed under a cooperative agreement between the US Fish and Wildlife Service (FWS) and Wisconsin DNR. The property's size and habitat diversity make it suitable for a variety of wildlife. Meadow Valley offers some of the best small game and deer hunting in the state.

Pittman-Robertson finances about 75% of the work at Meadow Valley. Annual projects include maintenance and repair on 19 miles of dikes, prescribed burning on 1,300 acres, maintenance of 300 acres of aspen, a 1,200-acre timber sale program and upkeep on 14 camping areas and seven miles of public access roads.

As a result of these management efforts, Meadow Valley chalks up 60-to-70,000 hunter days each year. Although road access to the property is good there are also plenty of areas for solitary recreation.

Wood County

The 18,500-acre Wood County Wildlife Area is one of the largest in Wisconsin. Owned by the county and leased by the state, an essential part of its operating budget comes from Pittman-Robertson monies.

Once famed for superb prairie chicken hunting on its grasslands, much of the area is now forested. Sharp-tailed grouse still inhabit the western third of the property. It has an abundance of nongame species, everything from sandhill cranes to pileated woodpeckers. Ruffed grouse, deer and waterfowl hunting are the most popular uses. Each year P-R pays for a variety of habitat projects here including controlled burns on 2,000 acres, upkeep on eight miles of dikes and maintenance of 175 acres of aspen. It also funds renovation of firebreaks, a 120-acre per year timber sale program and work on the area's 12 miles of public access roads.

Theresa Marsh:

a jewel in the shadow of Horicon

William E. Ishmael, Wildlife Manager, Pike Lake State Park

A premier 5,000-acre waterfowl production area and staging ground during migration. DNR photo

The northern flowage at Vernon Marsh. Photo by Mark Anderson

One of the few groups of giant Canada geese that winter in the upper midwest stay at thousand-acre Turtle Creek. Nearly $15,000 in P-R funds have been spent on habitat for them in this wildlife area on the Walworth-Rock county line east of Janesville.
Photo by Herbert Lange

Back in the 1940s, game manager Armin Schwengel of the Wisconsin Conservation Department surveyed the lowlands lining the banks of the Rock River between the villages of Allenton and Theresa. He figured these lowlands had the potential to once again become a productive waterfowl marsh and public hunting ground. He figured right.

A lot has changed since then. Game managers are now called wildlife managers, the Wisconsin Conservation Department is now the Wisconsin Department of Natural Resources, and those Rock River lowlands have been purchased and developed by the state into a premier 5,000-acre waterfowl production area and migration staging grounds known as the Theresa Marsh Wildlife Area.

Historical records show that prior to the arrival of European settlers this stretch of river bottom was covered with vast stands of tamarack. Later, the tamarack were cut to provide fenceposts and building materials. Soon afterward, in 1852, a grist mill was built in the village of Theresa, 2 miles downstream from the present marsh complex, creating a 2,000-acre flowage, ideal fish and wildlife habitat. Excellent fishing, hunting and trapping resulted. In about 1900, the mill dam was removed in order to farm the fertile lowlands. Cattle ranching, truck farming, mint farming and hay production all failed due to flood risks.

When 2,000 acres owned by a single corporation were offered for sale in 1947, the US Fish and Wildlife Service gave quick approval for use of Pittman-Robertson funds and land acquisition began the next year. By 1967 nearly 4,500 acres had been purchased with over $500,000 in P-R money. Acquisition has continued to the present day with 5,200 acres now under state ownership. An additional 800 acres will be purchased as land becomes available for sale.

Development of waterfowl habitat at Theresa has proceeded concurrently with land acquisition. A small open-end dike was constructed on Brownsville Creek (a tribu-

tary of the Rock River) in 1957. This created a 200-acre flowage and improved waterfowl production and hunting opportunities. In 1968, a mile-long dike and a stop-log dam were constructed on the Rock River near Theresa Station at the west end of the marsh, creating a 1,500-acre flowage.

In addition, more than eight miles of interconnecting low-head dike and ditches were dug to create a series of low, flat water subimpoundments adjacent to the main flowage. These are pumped dry each summer to allow farming on the flats to create food and cover for migrating waterfowl and shorebirds. When reflooded in fall, they are ideal habitat for attracting and holding waterfowl. In spring, the flooded mudflats attract herons, egrets, and hundreds of migrating shorebirds such as dunlins, dowitchers and snipe. Muskrats, mink and river otter also thrive on Theresa Marsh.

Primary goal of habitat development at Theresa was to provide a satellite area to accommodate spillover from the increasing Canada goose flock at Horicon Marsh 15 miles to the west. Prior to 1960, few migrating geese came, but by the mid-'70s, there were 6,000 each fall. During the peak fall migration in 1985, more than 25,000 geese were on Theresa. Last year, in an experimental hunt, 850 geese were taken at Theresa by 1,300 hunters. And the marsh is now home to a small but growing resident flock of breeding Canada geese.

Sharecopping on the uplands provides nesting cover for ducks, pheasants, bobolinks and other birds. Food patches are left standing in winter and in summer hundreds of acres of marsh hay are mowed to create a lush green goose pasture for returning birds in the fall.

There is excellent highway access to Theresa from populated southeast Wisconsin which allows many people to witness its spectacular spring and fall migrations. Two centrally located observation points are planned to increase birdwatching opportunities.

Theresa Marsh became what it is today because of the funding source available through Pittman-Robertson and the insight of the individuals who put it to good use. It will continue to provide benefits well into the future.

Vernon Marsh:

outdoor action for all, close to the big city

Mark L. Andersen, Wildlife Manager, Eagle

Vernon State Wildlife Area is located only four miles southwest of the City of Waukesha and 15 miles southwest of Milwaukee. As a result, many people use the area. At different times of the year you may see hunters, trappers, anglers, birdwatchers, photographers, hikers, cross-country skiers or the cross-country track team from Mukwonago High School.

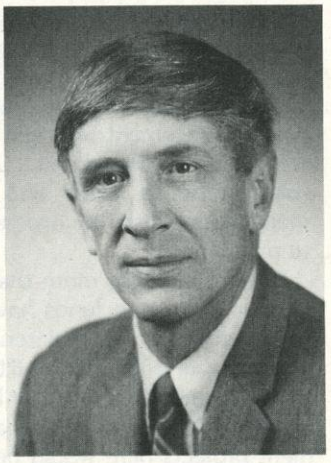
Vernon presently contains 3,634 acres in public ownership. The Department will purchase additional land when neighboring landowners are interested in selling. Over 2,700 acres were purchased with Pittman-Robertson funds.

The Department also leases 690 acres for public hunting, making a total of 4,324 acres available every fall. A 400 acre closed area is located near the northeast end of the property to provide a safe rest area for waterfowl. Six parking lots are located around the wildlife area to provide access for outdoor enthusiasts. About 775 acres of impoundments and 22 ponds improve and increase the opportunity for wildlife-related recreation. These water areas are very fertile and, therefore, very productive of plants and animals. Future plans call for additional wildlife impoundments and ponds. Management will continue to be aimed primarily at wetland wildlife and the associated recreation it provides.

Most of the area that is now Vernon Wildlife Area was a marshy lake less than 60 years ago. Intensive development in the Fox River watershed supplying Vernon Marsh greatly increased soil erosion into the marsh and, coupled with natural vegetation buildup, reduced the amount of surface water present. Many of the planned habitat developments are intended to restore the marshy lake of the past. Like many wildlife areas, much of Vernon was drained to grow truck garden crops and sod before the old Wisconsin Conservation Department bought the land. Agricultural efforts were abandoned by the 1960s due to difficulty in getting efficient drainage.

Since the wildlife area consists mostly of flood plain along the Fox (Illinois) River, it remains primarily lowland characterized by annual spring floods and occasional small floods at other times of the year. Most upland areas are managed to provide nesting cover for ground nesting birds like mallards, blue-winged teal and ring-necked pheasants. Grassy areas are maintained by controlled burning or brush mowing.

Additional wildlife common to Vernon include wood ducks, great blue herons, common egrets, many different shorebirds, bobolinks, goldfinches, a large variety of other songbirds, white-tailed deer, cottontail rabbits, gray squirrels, fox, raccoons, muskrats, and mink. Fishing opportunities exist for carp, channel catfish, bullheads, northern pike, and panfish.



Harold "Bud" Jordahl, former Conservation Commissioner and Federal Aid Coordinator

"It (P-R) provided a steady source of money so that we could hire professionals and make plans for the future — that was something new for research. P-R allowed us, in 1939, to undertake an extensive whitetail deer project which eventually led to Wisconsin's tremendous herd."

Roger D. Britton, Chairman, Wisconsin Conservation Congress

"The Conservation Congress has long supported the user fee concept. Pittman-Robertson is one form of that concept which has brought returns beyond measure, not only to hunters, but to the entire population."

The Mead:
a gift of wildlife

Thomas I. Meier, Wildlife Manager, and David J. Daniels, Public Information Officer, Rhinelander

At Mead, birds of prey rise and glide the summer thermals while otter sun themselves below. The badger, the deer and the Canada goose are at home here. It is a place where time seems to have stopped — pristine despite encroachment all around. Wisdom and foresight saved this land 25 years ago and gave the creatures here a second chance.

Mead's story is one of corporate vision fulfilled through a government promise and supported by Pittman-Robertson dollars. That it exists at all is something of an historical accident. Located in parts of Marathon, Portage and Wood counties, the land cover here in the valley of the Little Eau Pleine River was originally conifers and hardwoods interspersed with lowland marshes. Wildlife was plentiful. Immigrants remarked on the boundless resources, how nothing seemed to exhaust them — nothing, it turns out, but time. By the 1900s, the timber had been cut, the swamps and marshlands drained, and the oxbows and switchbacks straightened by dragline buckets. The land and its wildlife were in trouble.

It was rescued by corporate sponsorship. By 1959, Consolidated Papers of Wisconsin Rapids had accumulated 20,000 acres in the valley. There were plans for a vast reservoir, but purchase of additional land proved difficult. Stanton W. Mead, then company president, began to realize the area's instrinsic value and offered it to the people of Wisconsin as a gift. On April 10, 1959, the George W. Mead Wildlife Area was born. Its basic management principle then, as now, was that shrinking habitat and declining wildlife must be halted, and that management must constantly evolve if the land is to prosper.

Over the years, more than $1.2-million Pittman-Robertson funds have been spent on development and maintenance at Mead, plus another $800,000 for 8,000 additional acres of land. Were it not for P-R, many waterfowl habitat and other game management projects here would not have taken place. The area now brims with 17 major waterfowl impoundments and 37 smaller ones. Food and cover for wildlife is grown on 1,600 acres of cropland and artificial nesting platforms occupied by osprey and cormorant dot various flowages. A network of trails for hunters and hikers traverses the property.

Mead has become an ecological haven of unique proportions in the central Wisconsin farm country. More waterfowl than ever before now live here and other wildlife species are also thriving.

Mead's 28,000 acres are home to everything from this 13-lined ground squirrel to the whitetail deer. Photo by Tony Geiger

As the land evolves, so too does management. Where once flooded acreage was thought to be the sole key to good waterfowl production, managers now know that quality forage and cover are also extremely important. As a result, the old deep waters of the past have given way to shallow marsh basins which flourish with life-sustaining wetland plants.

Land that can support waterfowl also attracts other species. Today, a host of nongame wildlife find a haven on the Mead. Hikers and photographers see osprey circling the flowage and prairie chicken in the grasslands. Cormorants have come back from being endangered in 1974, when only 24 nesting pairs could be found, to the present 450 pairs. The intensive management that accomplished this was paid for with Pittman-Robertson funds.

Time on the Mead turns slowly, but when allowed to nurture, can heal old wounds. This philosophy is underscored by the fact that here, wildlife comes first and people are only visitors. They hunt, hike, watch birds, cross country ski, and look, listen and learn. But the integrity of the Mead's management objectives is maintained. With continued strong funding from Pittman-Robertson, its future is bright and full of wild things.

George Hartman,
retired Federal Aid Coordinator

"One of the first projects P-R funded was the Horicon Marsh purchase. That, like most P-R purchases, proved to be a good buy."

Artificial nest platforms for once-endangerd double crested cormorants dot Mead's flowages. P-R money built them. Photo by Thomas Meier

Blue-winged teal and numerous other waterfowl use Mead's 54 impoundments. Photo by Bruce Bacon

Navarino:
a natural hunting ground

Adrian P. Wydeven, Wildlife Manager, Shawano

The 14,000 acre Navarino Wildlife Area is one of the most valuable Pittman-Robertson (P-R) contributions to wildlife and recreation in northeast Wisconsin. Located seven miles south of Shawano, Navarino is 30 miles from both Appleton and Green Bay. About a half-million people live within a 50-mile circle around it.

The early history of the area was one of logging, fire, drainage and unsuccessful attempts at farming, but even then Navarino was known as a natural hunting ground for prairie grouse, deer, squirrel, rabbits, ruffed grouse, pheasant and ducks. In the early 1950s, the Wisconsin Conservation Department investigated Navarino as a potential pheasant stocking and waterfowl management area. Local conservation groups were interested in developing a large flowage for waterfowl and fur production by impounding the Shioc River, but insufficient water made this impractical. However, Navarino was approved for upland wildlife management and pheasants were stocked yearly from the early '50s through 1967.

Acquisition using P-R funds began in October, 1953, when the first parcel of 557 acres was purchased for $1,500. Shortly thereafter, the Shawano County Board deeded the state 985 acres of county-owned land in the project as an indication of support by local government and conservation groups.

The original Navarino acquisition goal was 9,400 acres, but today 14,280 acres are in public ownership. About $1,038,000 has been spent to buy land here, nearly 75% of it from Pittman-Robertson.

Management concentrates on forest wildlife, with secondary emphasis on wetlands. Clear-cutting maintains the aspen plant community, while selective and shelter-wood cuttings are used to thin hardwood and pine stands. Thirty-five miles of trail provide excellent access to nearly all parts of the property and are maintained each year. All trails are gated, and only foot travel is allowed.

Wetland management has concentrated on increasing the production of waterfowl. Fifteen flowages, ranging in size from four to 280 acres can flood a total of 1,400 acres. There is no permanent water supply for the flowages, and they may recede to low levels during dry weather. Prescribed burning has been used to manipulate vegetation in flowages and other wetland areas. Although Canada goose management is not a priority, as many as 5,500 Canadas visit the property in the fall and some goose nesting occurs in the summer.

Clear-cutting maintains the aspen plant community at Navarino.
DNR photo.

Local farmers crop about 260 of the 1,100 acres of open fields at Navarino through cooperative agreements with DNR. Most of the remaining open fields are former cropland or pasture that have reverted to mixtures of native and exotic plants. These fields are managed to re-establish more natural grassland.

To date, Navarino doesn't get much non-hunting use. It has no improved facilities other than parking lots. But the spring migration brings an abundance of ducks, geese and swans in breeding plumage and with them birdwatchers and photographers. A walk in the fields or forests turns up sandhill cranes, hawks, bluebirds, warblers, sparrows and thrushes. On spring evenings, woodcock perform their courtship display. And late summer brings out the blue and blackberry pickers in force.

In fall, archers find plenty of room plus a high deer population while ruffed grouse and woodcock hunters find plentiful coverts. Navarino's abundant stands of oak make it a haven for gray and fox squirrels. Upland ridges that sweep down to agricultural fields are favorite spots.

Navarino's cross country ski trails are not "manicured" but offer some beautiful corridors. Parking is on town roads, so the number of skiers is self-limiting.

At Navarino, Pittman-Robertson has added a gem to Wisconsin's beautiful wildlife areas. If you haven't been here, take the time to spend a day. You'll be amply repaid.

Collins marsh:

important to geese and swans

James H. Raber, Wildlife Staff Specialist, Green Bay

Collins Marsh Wildlife Area in west-central Manitowoc County is devoted primarily to waterfowl management. Approved in 1958, public support and a cash donation of $20,000 by the Manitowoc County Fish and Game Protective Association resulted in a strong acquisition program, nearly completed during the 1960s. Currently, about 4,150 acres is in public ownership and an adjoining 2,000 acres are leased for public hunting.

Cover types on Collins are those associated with abandoned farm fields, row crop agriculture, swamp hardwood forest, and open marsh. A prominent feature is the 1,800 acre flowage, constructed in 1965. Two smaller impoundments have been added since then.

Collins is an important stopover for waterfowl during spring and fall migrations. It is particularly important to Canada geese and swans, and provides excellent duck brood rearing cover during the summer. The most common nesting species are mallards and wood ducks. Nine other species are also usually present. Peak fall Canada goose populations number about 7,000 and the number of ducks may reach about 10,000.

Upland species include pheasant, gray partridge, fox squirrel, cottontail rabbit, and deer. Mink, muskrat, red fox, and coyote live here too as well as numerous songbirds.

Collins Wildlife Area has year 'round attractions. During spring and summer, when use is very light, one can walk the uplands or silently paddle the flowage to see a bountiful wildlife show. In fall, hunting opportunities are good, but conditions can be crowded. In winter, Collins has snowshoeing and cross-country skiing, but there are no maintained trails.

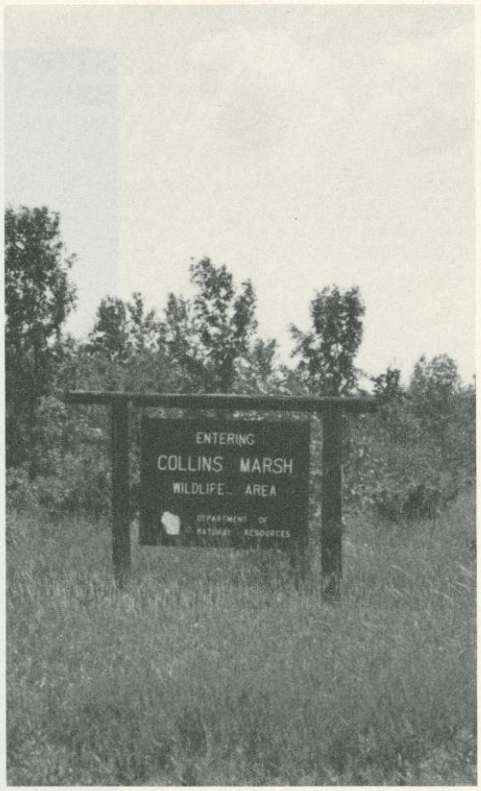


Photo by James Raber

Frances Murphy,
former Conservation Congress Chairman

"P-R was a law that took dollars from sportsmen. Now it's coming back into the state and I think in these critical times that it's a great investment in the natural resources of Wisconsin."

Deer creek:

uncrowded lowlands for deer and ruffed grouse

James H. Raber, Wildlife Staff Specialist, Green Bay

Deer Creek Wildlife Area is located in northwest Outagamie and northeast Waupaca counties and has been a wildlife area since 1942, when 440 acres were purchased from Outagamie County. Since then, using Pittman-Robertson funds, it has grown to its present size of 1,490 acres.

Most of the area is a lowland community of soft maple, tag alder, willow, tamarack, sedge, leatherleaf and sphagnum moss. The upland is forested with aspen, white birch, soft maple, oak, dogwood, red raspberry and blackberry. About 80 acres is in grass and herbaceous cover.

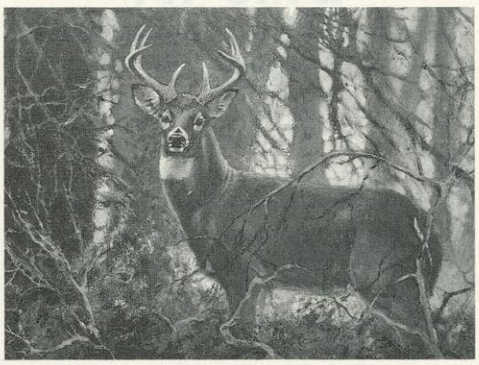
As late as 1957, both prairie chicken and sharp-tailed grouse were present, but plant succession has resulted in habitat changes which no longer support these species. Management now concentrates on deer, ruffed grouse, woodcock, and cottontail rabbits. Pheasants were stocked during the 1950s and '60s but recent management has concentrated on maintaining aspen forest through timber sales, firewood permits and removal of competing tree species.

Deer Creek has a ditch running through the center of the property which was fitted with a "tin-whistle" to impound water in 1971. This, combined with a well-placed beaver dam upstream has flooded about 120 acres and raised the water table in most of the wetlands.

A five-mile loop trail used by hunters, hikers, and cross-country skiers was built in 1974, and though not maintained since 1978 due to budget constraints, it is still very popular with visitors.

Lightly used during most of the year, the property offers excellent opportunities to get away from the madding crowd and commune with nature. Even in September, October, and early November ruffed grouse hunters and archers do not feel crowded here.

The sandy upland ridges which cross the property offer wonderful opportunities for blackberry pickers and there seems to be more good years than poor ones. It is not uncommon to leave with a hefty pailful in a single afternoon.



Painting by Gijsbert van Frankenhuyzen, courtesy of Michigan Natural Resources.

Four to seven sharptailed grouse broods grow up at Dike 17 every season.
Photo by James E. Hoefler

Dike 17:

abandoned farms + management = grouse, geese and deer

Eugene M. Kohlmeyer, Area Wildlife Manager,
Black River Falls

Picture yourself driving for miles through an unfamiliar pine-oak forest when suddenly a vast, open expanse greets you. How did it get there? What is it for? North Settlement Road in eastern Jackson County presents just such a surprise when you come upon the 3,700-acre Dike 17 Wildlife Area.

Located within the 65,000 acre Black River State Forest, Dike 17 and the whole region traces a familiar history of logging, repeated burning, submarginal farming and drainage. In the 1930s, the US government bought out poverty-stricken farmers here, planted trees with CCC crews and built earthen dams to create flowages for waterfowl. Dike 17 got its name from one of the dams.

From 1940 until 1957 the state forest was called the Central Wisconsin Conservation Area (CWCA) and was leased to the state by the US government. In 1957, title to the land was turned over to Wisconsin and the property became the Black River State Forest.

A CWCA report from 1954 states that Pittman-Robertson funds were first used in 1949 to improve dikes constructed by CCC crews and additional P-R funds went for maintenance of developed structures. The report says water was brought back to original levels to encourage emergent aquatic vegetation desirable for furbearers and waterfowl. "A typical example of this," reads the report, "is Dike 17 Flowage, where a combination of land clearing and flooding has produced an area that is annually becoming more attractive to Canada geese and other waterfowl, where only brush marsh existed before 1940."

The report also addressed future expectations of certain wildlife species: "The Whitetail - Dike 17 area will be considerably more valuable to Canada geese when present clearing and food patch work is completed. The first nesting geese were reported in 1953 - three pairs and one brood were seen. These birds, it is hoped, will be forerunners of an increasing nesting goose population." Efforts were also made to restore sharptailed grouse, but the report added, "Present management means cannot hope to restore the prairie chicken (Pinnated Grouse) on this area. Ecological changes have hopelessly evicted this once plentiful bird."

Today, the same general management techniques are still used on Dike 17. Water control structures and dikes still require maintenance, flowage water levels must be regulated, prescribed burning maintains the open state necessary for sharptailed grouse, and food patches are necessary for waterfowl. From 200 to 300 geese and 250 to 400 ducks are produced on the property annually. Peak migrant goose populations have numbered 7,000 in recent years and duck numbers have been as high as 4,000. Four to seven sharptailed grouse broods are raised every year and fall populations average 75. The local sandhill crane population numbers 50 to 70 and pre-migration staging numbers can exceed 400.

A survey of Dike 17 users this year asked the question,"What aspects of this area most influenced you to come here?" These are some of the responses:

"Privacy, wildlife observation, and to get away from people."

"For the peace and beauty of the place."

"Numerous otter."

"Wide open spaces."

"Well kept. Beautiful scenery. Quiet and peaceful."

"A variety of birds and it's easy to get around."

"Relaxation, privacy, memories from early youth of using this area. My father helped build the dikes in CCC."

"Good fishing at times and also duck hunting in the fall."

"Not a lot of people to bother you. The blueberries, too."

Kickapoo:
a classroom for land husbandry

Charles J. Burke, Wildlife Manager, La Crosse

The land is a living textbook at the 1,800-acre Kickapoo Wildlife Area in southern Crawford County. Purchased with Pittman-Robertson funds, the area has been turned into an outdoor classroom. Here, landowners, hunters and others can learn by example how both wildlife and agricultural production benefit from good soil conservation practices.

To maintain or increase wildlife, it is essential to blend habitat needs with modern farming. To do this, a management plan was developed for Kickapoo based on Soil Conservation Service (SCS) recommendations. As proposed in the plan, alternate contour strips were laid out for corn and hay. These provide food and cover for wildlife and slow water movement to keep soil erosion below harmful levels. The crop rotation consists of corn, oats and alfalfa, with the length of the rotation between four and seven years — the time required to go from corn to oats to alfalfa, then back to corn.

Corn is especially valuable to wildlife in winter when natural foods are in short supply. Cornfields are also used by game as loafing areas and provide escape cover for numerous species. Oats are a high energy, mid-season wildlife food. Alfalfa "greens up" early in spring and provides important nourishment then. Later, the fields attract many birds because of abundant insects. Alfalfa's dense overhead canopy offers concealment from birds of prey.

The four-year, soil-saving Kickapoo crop rotation calls for corn-oats-hay-hay. It saves soil because only once in four years is nutrient-demanding corn planted on the same contour strip. Seed beds are prepared in spring using conservation tillage methods, which further reduces erosion by leaving crop residues on the surface. The residues buffer soil against sheet erosion and provide additional wildlife food.

Kickapoo is managed as two separate units. By staggering crops between them, corn, oats and alfalfa fields can be distributed evenly around the property. Each year eight or 10 half-acre food plots of standing corn are left for wildlife.

In addition to the farm plan, Kickapoo also developed a forest management plan. The first step was to remove cattle from 1,000 acres of very steep woodland which had been heavily grazed in the past. Foresters found the forest floor barren of small plants and trees. The thin layer of soil covering the steep, rocky slopes was eroding 10 times faster than it was being replaced. Next, a forest inventory was conducted so that each stand could be evaluated and managed for wildlife, forest products or both. In selected areas, timber stand improvement (TSI) was directed at improving mast (acorn) production by thinning young oak stands to maintain growth and vigor and to develop larger crowns. Oak trees with large crowns produce the most acorns, a valuable wildlife food.

A Wisconsin Conservation Corps crew of local youths from Crawford County did most of the TSI work. In addition, they helped thin and prune walnut groves, construct brush piles, renovate an abandoned apple orchard, set up a bluebird trail and establish a series of trails and openings.

In a forestry research project here, scientists are investigating interrelationships of climate, geology, soil and vegetation. Results should provide a basis for silvicultural practices in the Kickapoo Valley.

Each year, hundreds of people show up at this Pittman-Robertson project to learn how wildlife management, modern agriculture and soil saving management practices can work together to prevent resource degradation.

Crawford County District Conservationist Dan Cotter calls the area a living laboratory. "The textbook for the class," he says, "is being written on Kickapoo's land in a most informative and graphic way and will serve generations to come as wildlife and land management techniques evolve."

Wild turkey tracks show promise for the spring hunt at Kickapoo.
Photo by Charles Burke

Crex Meadows:

a wildlife observatory restored by flood and fire

James Hoefler, Interpretive Wildlife Manager
and Paul Kooiker, Project Manager

Just north of Grantsburg, nestled in the deepest portion of an ancient glacial lake bed, lie 30,000 acres of wetlands, brush-prairie and forests which comprise the Crex Meadows Wildlife Area. The landscape here has undergone many changes during the past 100 years. Most of the wetlands were drained and the brush-prairie cleared for farming, planted to pine, or grew up to jack pine and oak when the fires went out. Many of the original wildlife species declined or completely disappeared.

But today, Crex Meadows looks much like it did originally. In 1945, the state purchased several thousand acres of tax delinquent land there from Burnett County. Norm Stone, the first project manager, began large scale wetland restoration in 1950 under Pittman - Robertson and by 1954 several large flowages had been completed. Brush-prairie restoration began in 1948 using both fire and timber sales. When the forest canopy was removed, prairie plants reoccupied these areas very rapidly.

To date, over 18 miles of dikes have been built, resulting in 27 flowages which flood over 5,000 acres. Twelve miles of water-transfer ditches, 32 water control structures and a pump that puts out 20,000 gallons per minute regulate water levels. Most of this was paid for with P-R funds. Flowages are drawn down on a regular basis to stimulate aquatic vegetation growth for waterfowl, furbearers and other wildlife. More than 6,000 acres of brush-prairie have been restored. Woody vegetation is burned on a four to six year rotation to stimulate prairie plant growth. There are over 60 miles of firebreaks and since 1948, a cumulative total of about 140,000 acres have been burned.

The number one activity is wildlife observation and Crex has a tradition of offering a variety of wildlife educational activities.

A 2,400-acre refuge in the center of the property is the only place where hunting and trapping are not allowed. To provide wildlife food, 260 acres of corn, buckwheat, rye and millet are planted there. Some 300 potholes for use by breeding ducks have been constructed. Dense nesting cover is planted for waterfowl, sharptails and prairie chickens. Islands are cleared to create predator resistant nest sites; platforms are erected for osprey, eagle, heron and cormorant nests; and feeding areas and dancing grounds are maintained for sharptails.

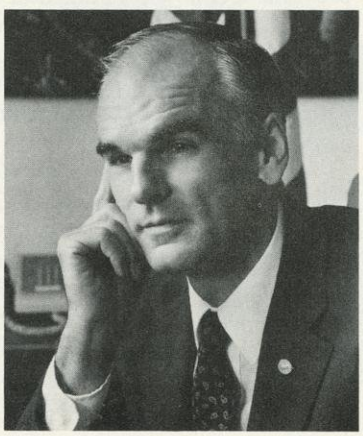
Research has focused on Canada geese; on sharp-tails and prescribed burning; and on sandhill crane breeding grounds and migration routes. Use of potholes by waterfowl, great blue herons, common loons, reptiles and amphibians has also been studied. In addition, 35 years of waterfowl banding have provided new insights into migration routes, wintering areas and mortality rates.

Over 250 species of birds including 30 species of ducks, geese and swans have been observed at Crex plus many mammals, reptiles and amphibians.

Since its creation, over $1.5 million in P-R funds have been spent developing and managing habitat on Crex. Future plans include several additional flowages and restoration of another 1,000 acres of brush-prairie. Six thousand acres of wooded habitat will be retained and managed for forest wildlife species.

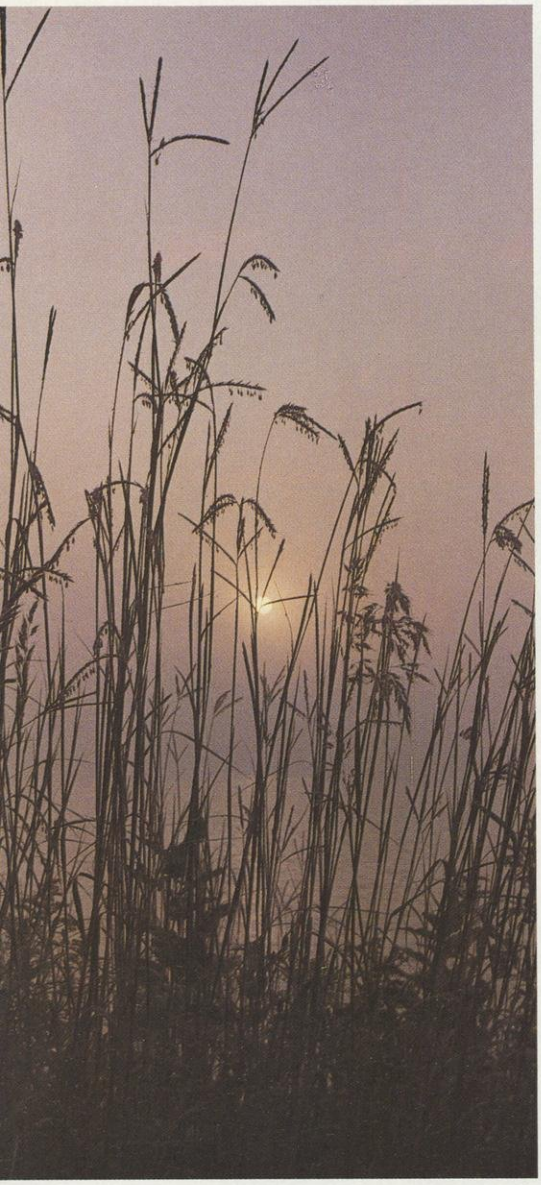
Over 250 species of birds including 30 species of ducks, geese and swans have been observed at Crex plus many mammals, reptiles and amphibians. It has a resident flock of rare giant Canada geese and is a major staging area during sandhill crane migration with more than 800 birds there in fall.

Although funding comes from hunting and trapping, these activities account for only 30% of total use. The number one activity is wildlife observation and Crex has a tradition of offering a variety of wildlife educational activities. There have been guided tours and slide presentations ever since 1946 and in 1980, a formal Wildlife Interpretive Program was initiated. A small interpretive center containing mounted animals, displays and an herbarium is housed in the Crex office building. The center is open weekdays from 7:45 to 4:30, and on weekends in April-May and September-October, from 10 am to 4 pm. Another feature is an annual open house held the third Sunday in October. The open house features guided tours, audio-visual programs and a wildlife art display. Six hundred people attend the event each year.



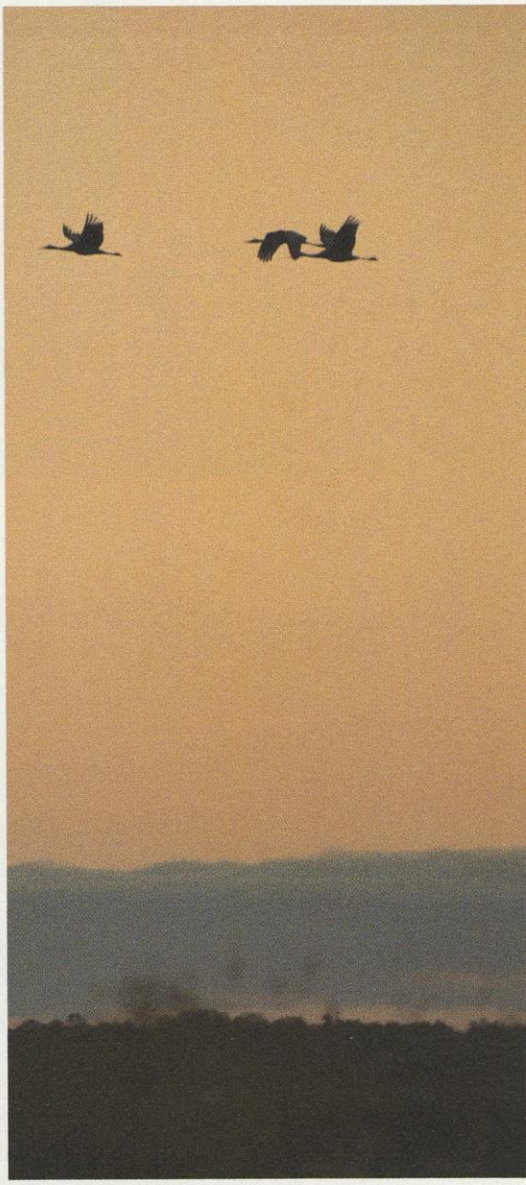
Donald P. Hodel,
Secretary of the Interior

"Many Americans are surprised to learn that hunters have been the mainstay of wildlife conservation over the last half-century. Long before such terms as 'ecology' and 'environment' entered our popular vocabulary, taxes on firearms and ammunition—willingly supported by hunters and the firearms industry—were rescuing wildlife species and habitats that would otherwise have disappeared."



Sunset at Crex through big prairie bluestem.

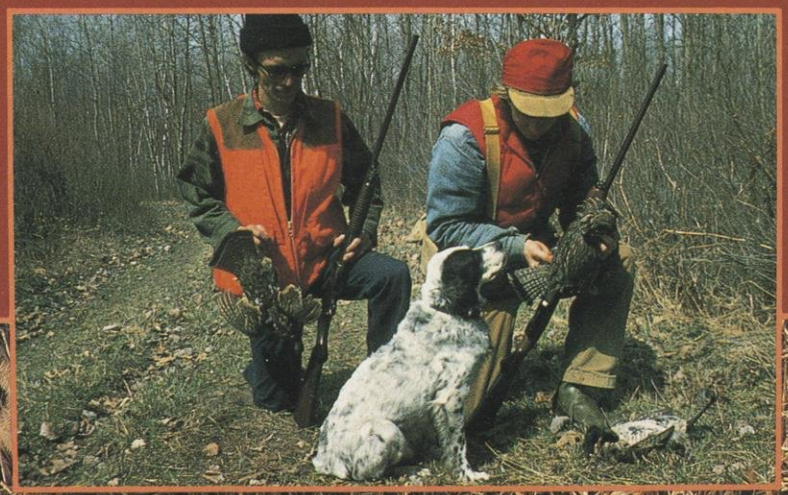
Phantom Lake Flowage.



Sandhill cranes. Photos by James E. Hoefler

C. D. "Buzz" Besadny,
Secretary, Department of Natural Resources

"Modern state wildlife agencies owe their success to the P-R Act. Their achievements are based upon the research and management knowledge P-R financed. Every Wisconsin citizen has benefited."



John Kubisiak

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Photo by Paul Deranek; courtesy of OLIN Corporation Photo Lab