

Fish and wildlife for the the 1980s and beyond. [Supplement, Vol. 4, No. 3] May-June 1980

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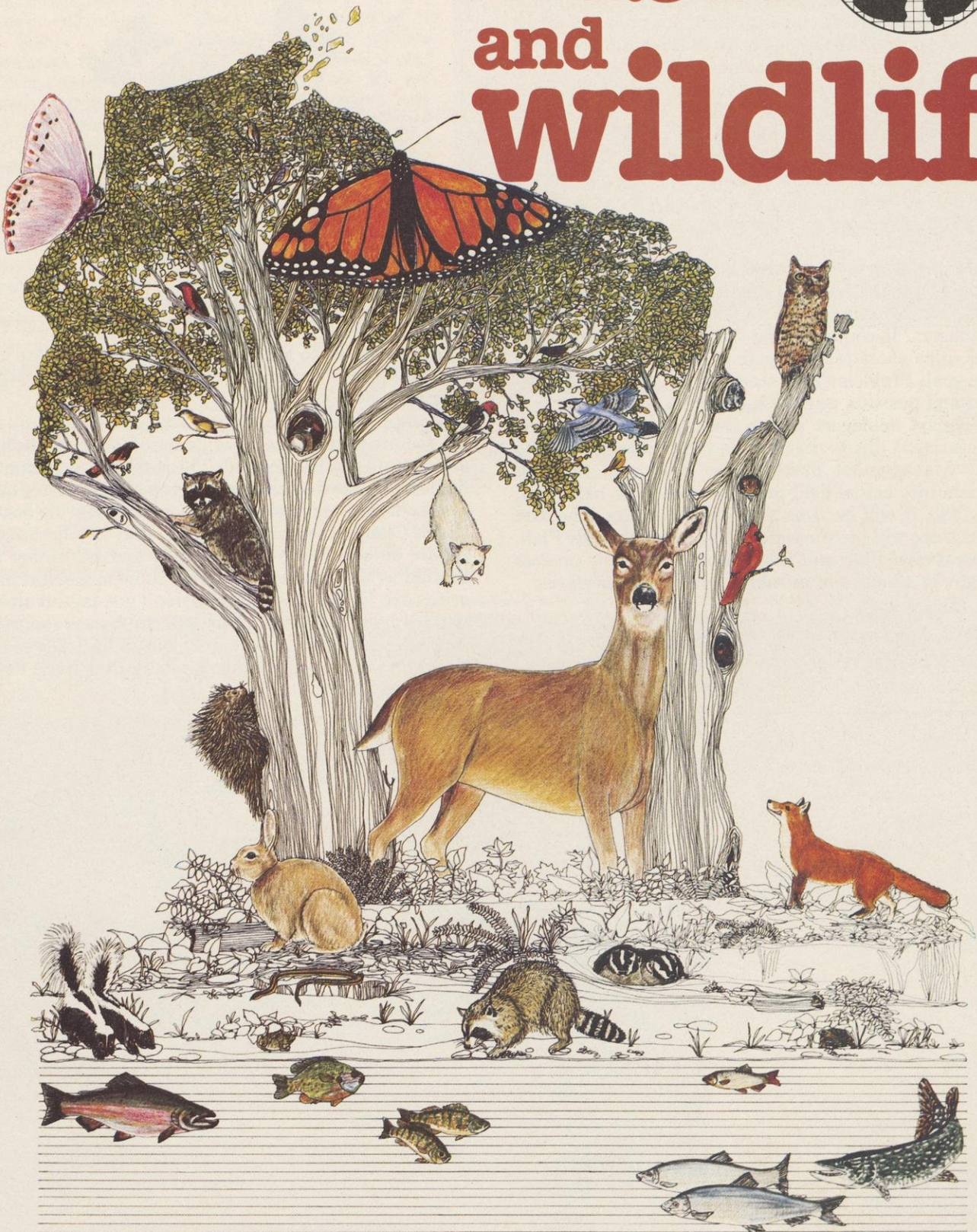
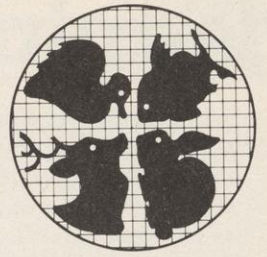
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Fish and wildlife



for the 1980s and beyond

Planning: how and why

Comprehensive Planning includes everything and is an on-going effort. For fish and wildlife it's a big order! The beginning is all nitty-gritty, painstaking detail. The end is the kind of fish and wildlife universe we all want for Wisconsin in 1990 and beyond. Your DNR is one of the first agencies in the nation to adopt comprehensive planning as a management system.

Like time itself, the system marches toward the future in a series of unending steps. Presented here is the second step, the big picture, the heart of the plan. Still to be taken are steps three and four. Then it all repeats, based on what was learned or changed during the first go-round — back to step one which should be a better inventory of all wildlife resources and their uses.

Material presented here is based on a 300 page report, *Management Strategies 1979-85*, the fruit of a five-year planning effort by DNR's fish and wildlife managers. It contains long range goals for each species, plus short term objectives that move us toward the goal. Problems that stand in the path are identified and possible ways to solve them outlined.

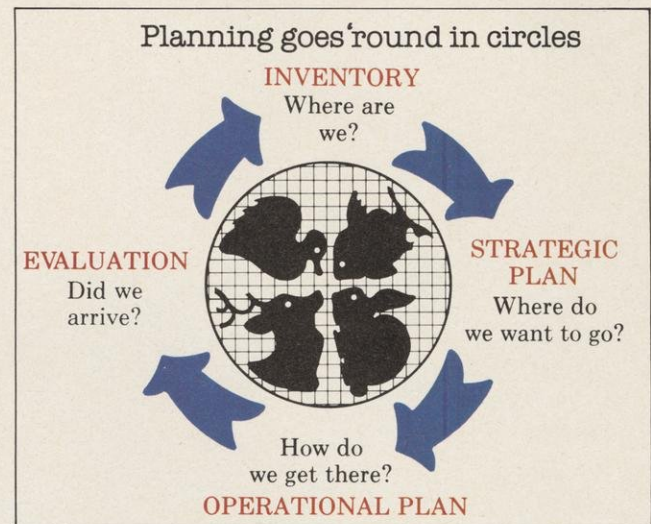
Today, managers are at work on step three, the operational phase that brings the Strategic Plan to life. Management prerequisites from step two will bloom into actual field projects as early as next year. In 1985, it will be time to evaluate results. The first four steps will be complete: Inventory, Strategic Plan, Operational Plan and Evaluation. The whole process might be thought of as asking a series of questions:

Where are we?

Where do we want to go?

How do we get there?

Did we arrive?



All the while, to keep the process relevant, data are refined to reflect resource changes and the strategic plan modified accordingly.

Comprehensive Planning recognizes that many of the factors that control abundance of fish and wildlife are beyond DNR's control. These factors are identified and corrective change suggested. But in today's money-tight economy one of the most endearing beauties of Comprehensive Planning is that it helps spend public dollars wisely. With funds and personnel as limited as they are, choices have to be made and priorities set. The choices come easier if you lay out alternatives and measure their effect. Comprehensive Planning does just that. It gives fish and wildlife more bang for the buck and who can deny that these days they need it?

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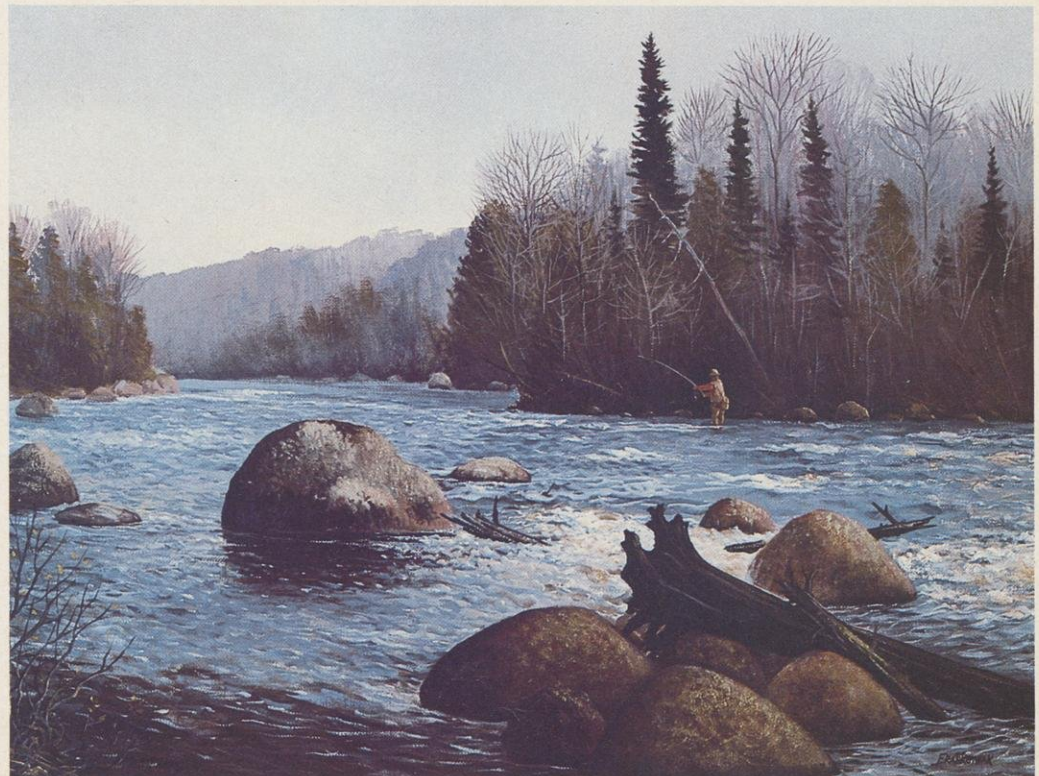
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The Wolf River by Artist Bob Frankowiak, 4972 S. 20th St., Milwaukee, WI 53221.

The resource: uses, problems, answers



Wisconsin's fish and wildlife resources are diverse and abundant. They include 336 species of birds, 78 mammals, 170 fish, 70 amphibians and reptiles and 43 species of mollusks. There are also thousands of insects and other invertebrates.

Uses for all these vary, but there are three kinds: economic, recreational and what might be classified as ecological or "active non-use." Analysis of supply and demand for these uses is an essential part of the plan. The numbers involved are big. Commercial fishing, trapping, resort operation and sale of sporting goods, for example, are all multi-million dollar businesses. In 1978 furs from animals trapped in Wisconsin sold for \$15-million. In 1979 commercial fishing yielded \$3.3-million. Tourism is estimated to bring the state \$5-billion annually. The last survey in 1975 showed that Wisconsin hunters and anglers spent \$519-million, a number expected to rise to \$675-million per year by 1990.

Recreational use can be measured in part by the number of hunting and fishing licenses. About 2½-million were sold in 1979 and they brought in a total of nearly \$19-million. Other recreational use of fish and wildlife has not been measured but one estimate puts it at 1½ times the hunting and fishing use. This includes birdwatching, wildlife viewing and outdoor enjoyment in general. All are popular and growing more so.

As for active non-use, it grows more popular every day to value fish and wildlife for their own sake and for their part in maintaining healthy ecological systems. A measure of this concern is landmark endangered species legislation passed in 1972 and strengthened in 1978. Under it, endangered as well as threatened species are protected and management is specified for all nongame. DNR has created a special office to carry out the purposes of this important law.

GOALS:

Resource management starts by setting broad goals that define major concerns of DNR. These lay a foundation upon which to build. The structure looks like this:

DEPARTMENT

Provide for healthy life systems, of which fish and wildlife are a part, recognizing biological capabilities, other competing uses of natural resources and the needs of the public.

FISH AND WILDLIFE MANAGEMENT

PROTECT:

Fish and wildlife from activities that severely deplete their numbers.

Land and water resources from contamination by substances and materials harmful to fish, aquatic organisms, and wildlife.

Fish and wildlife habitat from physical degradation and destruction to the fullest extent possible.

Endangered native fish and wildlife.

DEVELOPMENT

Manage all fish and wildlife for optimum ecological, recreational, and economic benefit.

Manage public land and water to provide productive habitats.

Encourage and develop appreciation for the needs of fish and wildlife in management of all private waters and lands.

USE

Make the public aware of scientific facts and ecological principles related to the management of fish and wildlife.

Commercially harvest selected fish and wildlife whenever it is feasible from a recreational, ecological and economic standpoint.

Provide opportunities for diverse recreational uses of fish and wildlife.

Provide opportunities for hunters, trappers, and anglers to pursue their sport in a manner pleasing to themselves, to their fellow participants and in a manner acceptable to the public.



Autumn Marsh Mallards by Artist David A. Maass, courtesy of Wild Wings, Lake City, MN 55041



Fish and wildlife: major issues and problems

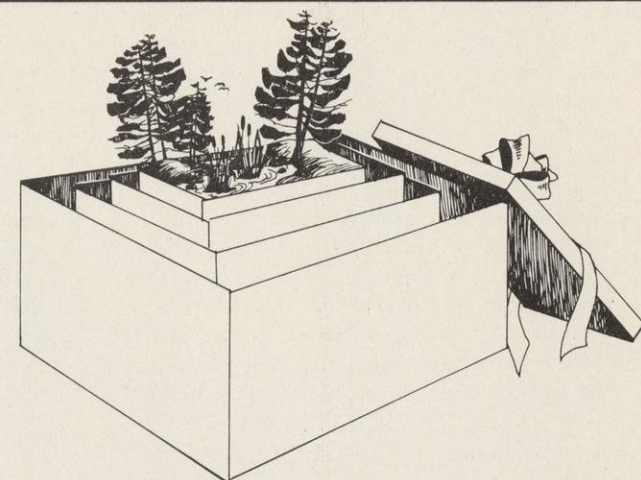
Every fish and wildlife species has unique management problems. Most are dealt with by field managers in their everyday work. However, some are so widespread or so troublesome that they become the concern of the entire Department. These problems are listed below. How they are dealt with in the near future will have a powerful effect on Wisconsin's fish and wildlife and the people who enjoy their use.

Problems

Possible Answers

Human uses of land and water are altering fish and wildlife habitats, causing a serious reduction in the number of animals they can support.

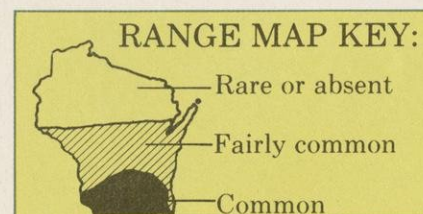
- Seek better land-use policies.
- Identify and protect critical fish and wildlife habitat.
- Promote habitat improvement projects on private lands.
- Inventory habitat, measure quality and monitor long term trends.
- Develop and support laws to protect habitat.
- Acquire lands with fish and wildlife potential.
- Maintain and improve habitat on public lands.



Many species are now boxed in by shrinking habitat. Others will be.

Demand and competition for fish and wildlife recreation are growing, especially on public lands.

- Encourage ethical behavior by all resource users.
- Manage resources and public facilities to reduce conflicts.
- Determine use priorities on public lands.
- Provide opportunities for users to pursue their sport in a satisfying and proper manner.
- Use incentives to spread out users and reduce conflicts.
- Increase populations of desired fish and wildlife species that are below the carrying capacity of their habitat in areas where public demand exceeds supply and such increases are ecologically sound.



* Throughout the supplement total population figures at the base of each page are 1985 projections.

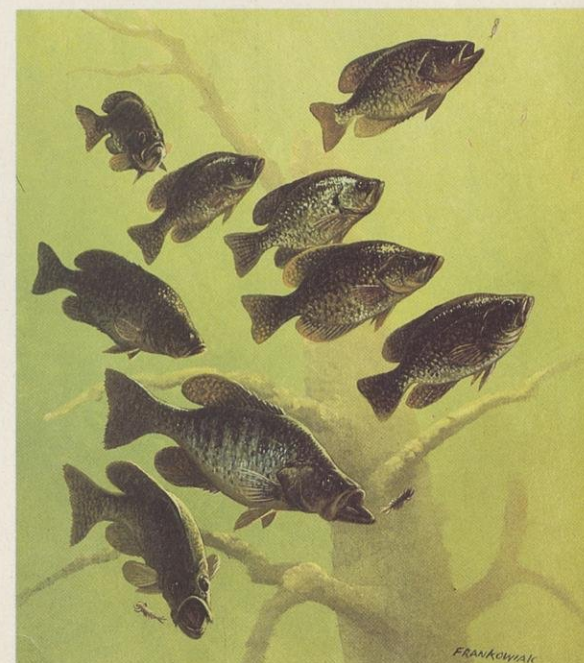
The species:

Panfish



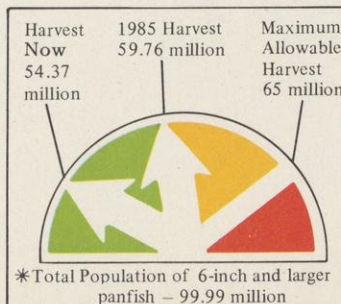
HABITAT: found throughout Wisconsin in 878,000 acres of lakes and 217,000 acres of streams.

GOAL: Maintain the opportunities for high-quality fishing.



Black and White Crappies by Artist Bob Frankowiak, 4972 S. 20th St., Milwaukee, WI 53221.

OBJECTIVES:	Now	1985
Number of fish	98.62 million	99.99 million
Anglers	1.28 million	1.40 million
Fishing days	21.75 million	23.90 million

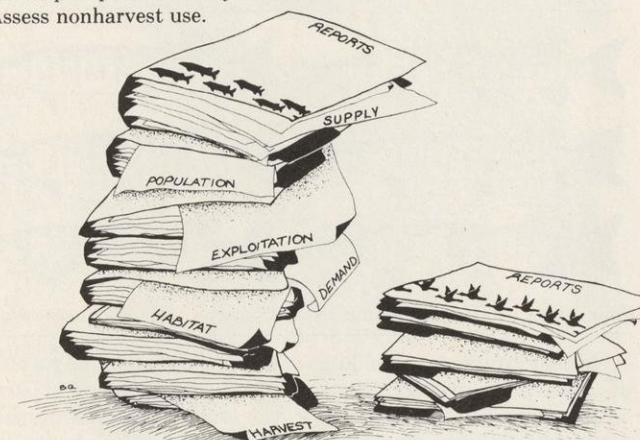


Many people don't understand or appreciate fish and wildlife needs.

- Provide information to the public on these needs.
- Provide management demonstration areas.
- Improve public information on DNR programs and activities.
- Improve DNR cooperation with private groups.

Information on resource supply and demand is often scant and needs to be improved to insure sound management for all major species.

- Inventory populations and habitat, measure quality and monitor trends.
- Determine social and economic values of fish and wildlife resources and public use.
- Develop improved survey methods.
- Assess nonharvest use.



Information:

What we need.

What we've got.

Fish and wildlife management costs are rising at the inflationary rate while income is not.

- Continue to improve management efficiency.
- Develop a system to evaluate what work projects are most cost effective.
- Develop methods for all users to contribute their fair share.
- Use income from DNR lands to finance operating costs on those lands.

Increasing amounts of private lands are closed to hunters and anglers, reducing recreation opportunities.

- Promote better relationships between private landowners, hunters and anglers.
- Promote public awareness of landowner property rights.
- Buy more public lands for hunting and fishing.
- Stress the importance of ethical behavior.
- Use cooperative agreements to obtain public access to private lands and waters.

Chemical contamination of certain fish stocks makes them unmarketable and possibly unsafe for eating.

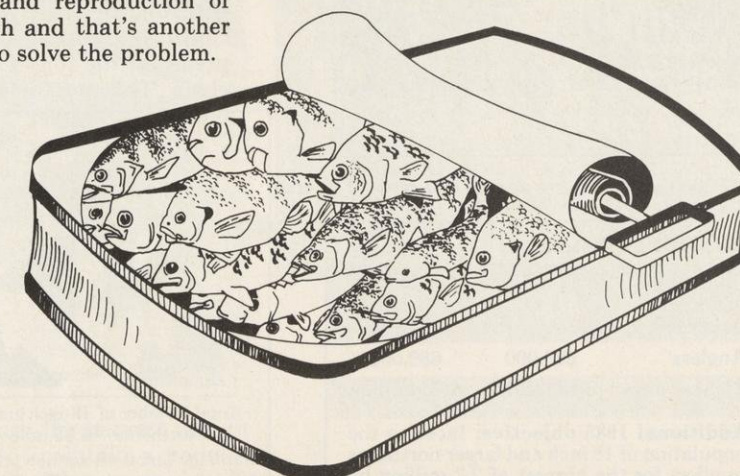
- Encourage close management and control use of potential chemical contaminants.
- Cooperate with other agencies in assessing the extent of the problem.
- Monitor contamination levels in fish populations.
- Provide information on where contamination is occurring.
- Manage for fish species that are less susceptible to contamination.

Problems

Possible Answers

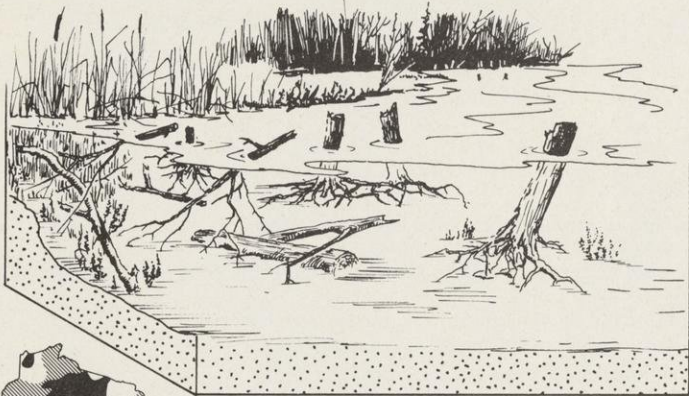
Large populations of slow-growing or stunted panfish are unattractive to anglers and interfere with the growth and reproduction of some gamefish.

- Stock predatory fish like walleye or hybrid musky to check over-abundant populations.
- Continue research into methods of controlling numbers.



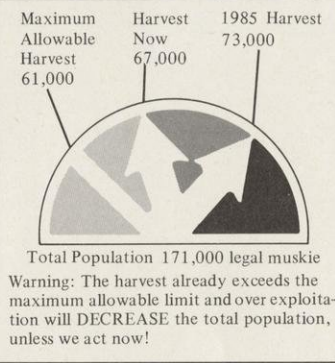
Stunted panfish! Space and food could make anglers want them.

Muskellunge

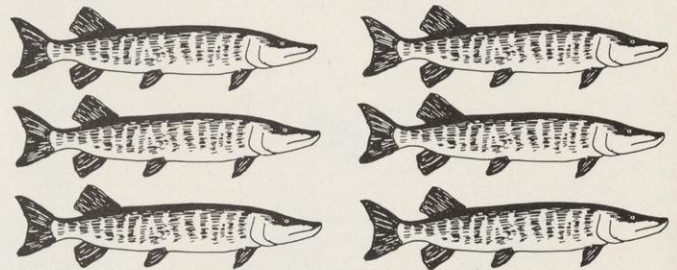
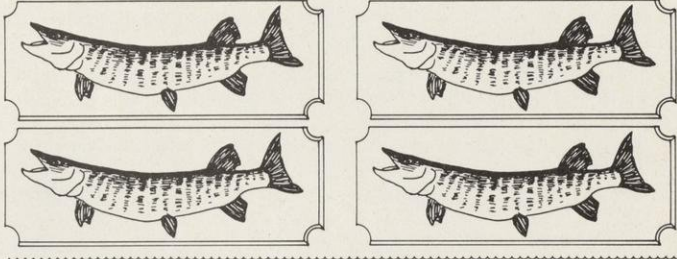


HABITAT: 861 lakes and streams covering 404,758 acres.

OBJECTIVES:	Now	1985
Number of fish	178,000	171,000
Anglers: 13% of total	212,000	233,000
Fishing days	1.42 million	1.56 million



GOALS: Maintain a trophy fishery for muskellunge. Do not allow the catch to exceed the maximum safe amount.



Four out of every 10 legal muskies are caught. Illustration by Georgine Price

Muskellunge are the king of Wisconsin waters. Sleek and powerful predators, they feed voraciously on almost any fish and occasionally take a bird or mammal. Because they are large and predatory, most waters contain no more than a few. They live in lakes of all sizes and slow stretches of large rivers where they prefer dropoffs with submerged

weed beds nearby. The northwest and northcentral parts of the state have most muskies. Muskellunge have long been a trophy in Wisconsin. To make sure they grow big, catch has been restricted by a high size limit and low bag. Natural reproduction has always been low and may now be declining. An estimated 212,000 fishermen already

catch four of every 10 legal-sized muskies every year. That's 4% above the maximum safe level and it's going to get worse. By 1990, loss of habitat will account for another 8% reduction. If this trend continues, the result will be fewer fish to catch. DNR hopes to prevent that. Stricter harvest limitations, increased stocking and habitat improvement are possible tactics.

Most muskie anglers expect to spend long hours with little results. On the average, they make 20 trips for every legal muskie caught. To the person who hooks one, it's worth the investment. "Follows," "swirls" and "hits" are shared and enjoyed nearly as much as actual catches. Should it become necessary to restrict the harvest further, a small increase in the amount of time it takes to boat one won't make much difference.

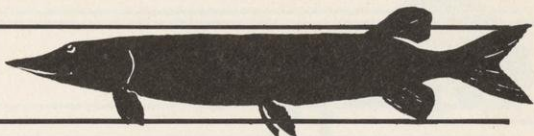
Information on the number of muskies caught every year is hard to obtain. Anglers usually leave a lake as soon as they catch a legal one. To keep track, which is important to good management, it may be necessary to register

muskies or conduct a special creel census.

Another thing we need to know is how many stocked muskies survive to legal size. In the future, all we stock should be marked and their fate routinely investigated to answer this question.

Wisconsin pioneered in modern hatchery production of muskies and continues to experiment with new techniques. Hybrids, a cross between muskellunge and northern pike, are bred as a sort of special purpose fish. They're usually stocked in southern lakes outside native muskie range. Raising pure muskies requires feeding with live minnows, but with new DNR techniques hybrids are now able to feed on dry pellet food and grow quite nicely, greatly reducing costs.

Hybrids have a voracious appetite. That's both good and bad: good because it makes them ideal for controlling stunted panfish populations; bad because it makes them too easy to catch. It is unlikely that stocking hybrids will be greatly expanded or that they'll ever be substituted for true muskie in native waters.



Problems Possible Answers

Information about muskie harvest is not sufficient to guide the management program.

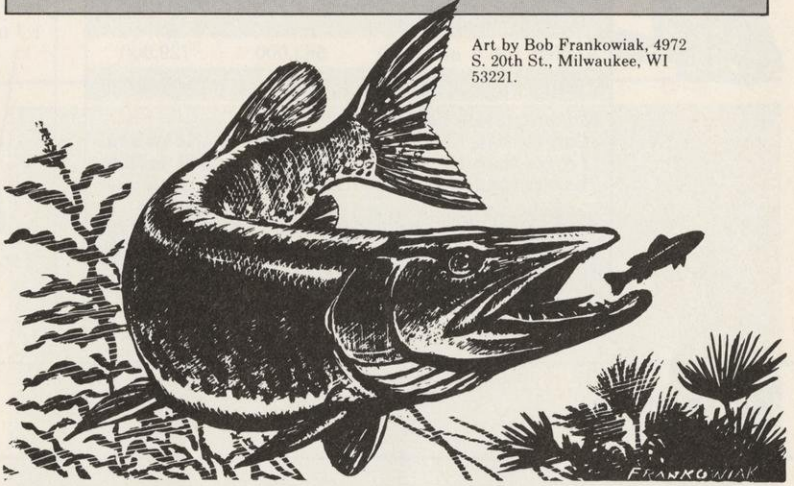
- Register all muskies harvested.
- Conduct creel censuses and public opinion surveys.

Information on the contribution of stocking to the fishery is scant.

- Routinely mark all stocked muskies so contribution to the harvest can be determined.
- Identify and counteract reasons for low early survival of stocked fingerlings.

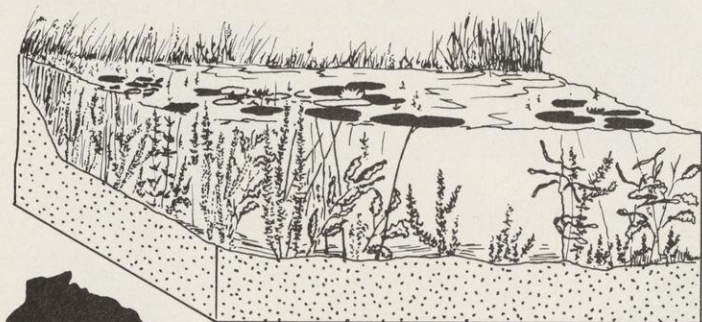
More muskie are being harvested than the limited population can support without producing a decline.

- Limit the harvest through shorter seasons, higher size limits, restricted fishing methods or a season bag limit.
- Promote trophy fishing; encourage catch-and-release fishing.
- Counteract the decline in population; protect spawning habitat.
- Increase muskie waters, number stocked, spawning habitat and access to remote muskie waters.



Art by Bob Frankowiak, 4972 S. 20th St., Milwaukee, WI 53221.

Northern pike



HABITAT: 471,000 acres of lakes and 66,000 acres of rivers.

OBJECTIVES:	Now	1985
Population of 18" and larger fish	4.77 million	4.66 million
Anglers	626,000	689,000
Fishing days	5.48 million	6.03 million

Additional 1985 objective: Increase the population of 18 inch and larger northerns to allow for the harvest of 2.7 million by 1985.

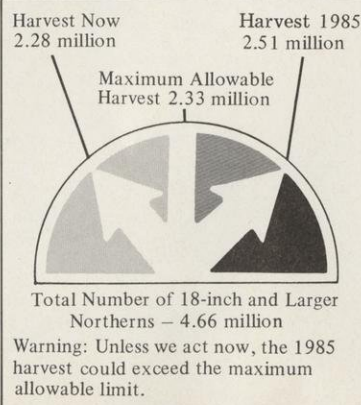
GOAL: Increase northern pike populations to meet or exceed increasing angler demands.

Northern pike are the big kid on the block. Except in waters where they appear with muskies, they are Wisconsin's largest aquatic predator, the top of the food chain. That puts a ceiling on

how many any lake or river can hold.

Northerns like water with lots of weed beds where they can lie in wait for unsuspecting prey. They feed in daylight, so that makes them catchable all day long — and popular. The major management concern is loss of natural spawning marshes.

Where water is fertile, northerns can grow fast. Up to half a population can be caught each year without risk of depletion the following years. Unfortunately, in some places anglers are already exceeding this amount, especially in our southern lakes. A steady reduction in the number of northerns will be the result.



Regulations allow a bag limit of two in the southeast and five for the rest of the state. Size limits have been dropped.

Surveys show northern anglers want more and bigger fish. Providing both is hard. About 40% of those creel are less than 18 inches long, but only 20% of all anglers think such small ones are worth keeping. One way to get bigger fish is to set a high minimum size, but anglers often oppose this. When the 22 inch limit was in effect in the south, more than 80% of the anglers felt it was too restrictive. As for the bag limit of two, more than 90% felt the limit should be higher. In other state waters where pressure is less and fewer northerns are caught, most anglers favor size protection

that will allow fish to grow larger.

Southern Wisconsin has only 10% of the northerns, but 20% of the anglers. It's in the south that overfishing may be depleting the standing stock. The alternatives are to increase supply or decrease the harvest. Supply can be boosted some by stocking more fish in more places, and by improving habitat. DNR already stocks 24 million northerns every year, mostly fry, but stocking doesn't always yield good results. Habitat improvement is better, but costly. Harvest can most effectively be lowered through a higher size limit, but the dilemma is that anglers don't like it.

Not enough information about northerns and the preferences of anglers who fish them.

- Estimate populations and conduct creel censuses on 18 state waters by 1985.
- Conduct angler attitude surveys.

The number of northerns is declining due to loss of habitat.

- Identify critical habitat for top priority acquisition.
- Encourage wetlands protection legislation to preserve vital northern spawning habitat.
- Increase public awareness of the value of wetlands to northerns.
- Manipulate water levels, where possible to benefit northern pike reproduction.

The present stocking program has produced spotty results.

- Develop new and less expensive fingerling rearing techniques.
- Evaluate stocking criteria.

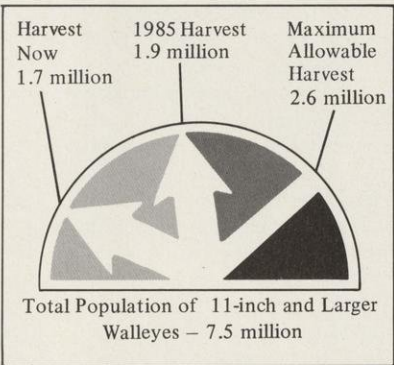


Walleye



HABITAT: found in 1,312 inland lakes and 231 rivers covering one million acres.

OBJECTIVES:	Now	1985
Number of fish 11 Inches and Larger	7.79 million	7.48 million
Anglers (40% of Total)	663,000	729,000
Fishing days	5.50 million	6.05 million
Maximum safe harvest		
Larger than 15"	1.21 million	1.16 million
Larger than 13"	1.88 million	1.81 million
Larger than 11"	2.73 million	2.62 million
Additional 1985 objectives: Maintain a statewide population of 7.8 million 11-inch and larger walleye. Provide for a harvest of at least 2.6 million walleye annually. For selected waters, increase the number of 15 inch or larger fish by 10%.		



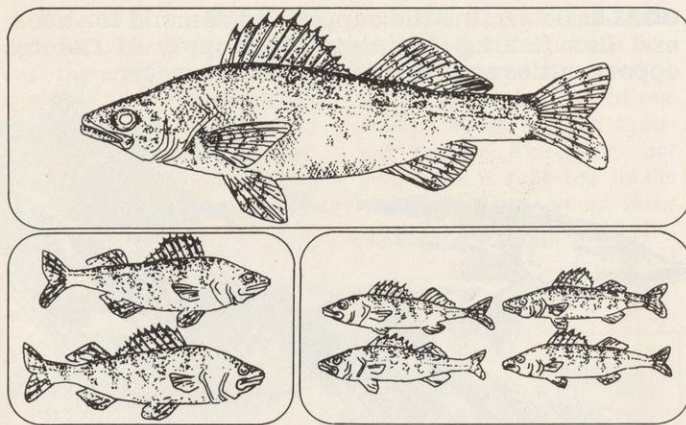
GOALS: Maintain walleye population and harvest at current levels. Increase the catch of 15 inch or larger fish where possible. Maintain current Great Lakes populations until their status can be determined.

Walleye are the most sought after, most abundant and probably the tastiest game fish in Wisconsin. Found throughout the state, especially in large lakes and slow streams, they're most abundant up north mainly because there's more water there. Walleyes were once plentiful among the islands

and bays of the Great Lakes, but populations dropped after the turn of the century. DNR wants to find out more about their status. Stocking in Green Bay shows promise of reviving the population.

Walleyes are nocturnal predators. They lie in deep water during the day and move into the shallows at night to feed. In spring, they usually spawn along rocky shores and gravel shoals, but also use sandy bottoms or flooded marshes. Where there's a spawning migration, it might be up to 100 miles and fishing can be spectacular along big rivers like the Fox, Wolf, Wisconsin and Mississippi.

Natural walleye production has its ups and downs. They seldom produce good hatches year after year. Temperature, winds, and water



This, This or This ?

levels during the spawning season are important factors. Other times, their prey have a down year and then, so do the walleyes. Stocking is often used to make up for these weak "year classes." DNR stocks 95 million annually to help even things out. But success varies and results are often uneven and unpredictable. Evaluating the stocking program will receive prime

attention in the future.

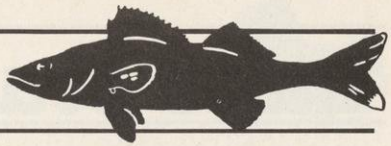
Anglers average one walleye for every three fishing trips. The maximum safe harvest depends on what minimum size anglers want to keep. For each inch added to the size limit, the number that can be caught drops nearly a million. Research shows that size limits usually don't improve fishing. Only a few counties still have a minimum limit of 13 inches. DNR

Problems
Possible Answers

Information about walleyes and their exploitation is sketchy.
Conduct creel censuses; survey population, mortality, age and growth rates in 18 representative waters.
Conduct angler attitude surveys every three years.
Apply and evaluate special regulations on selected waters.

Stocking success is highly variable and, in some cases, may not provide substantial return to the creel.
Determine the return to the creel from stocking.
Develop guidelines to insure a maximum return each time walleyes are stocked.
Evaluate success of stocking various sizes.

Poor growth rates in some waters limit the number of large fish available to anglers.
Remove regulations on size in waters where walleye would benefit from liberal regulations.

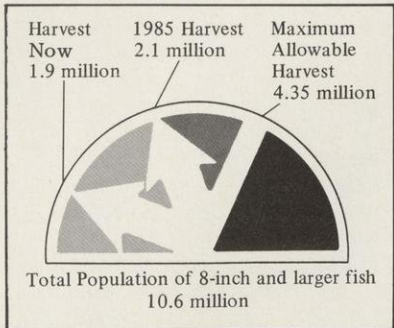


Bass



HABITAT: Largemouth are found in 840,000 acres of lakes and 233,000 acres of streams. Smallmouth are found in 300 inland lakes totalling 519,000 acres and 294 streams stretching 3,514 miles.

OBJECTIVES: Largemouth	Now	1985
(No Reliable Smallmouth Data)		
Number of fish		
Larger than 12"	1.96 million	1.92 million
Larger than 10"	5.34 million	5.22 million
Larger than 8"	10.86 million	10.63 million
Harvest (all sizes)	1.9 million	2.1 million
Anglers 32% of total	411,000	452,000
Fishing days	3.4 million	3.7 million
Maximum safe harvest		
Larger than 12"	786,000	769,000
Larger than 10"	2.13 million	2.09 million
Larger than 8"	4.35 million	4.25 million
Provide a harvest of at least 2.1 million 8-inch and larger fish.		



GOALS: Maintain largemouth and smallmouth fishing opportunities. Improve largemouth fishing quality, especially near cities. Determine the size of Wisconsin's smallmouth population and how heavily it is fished.

Bass are scrappy fighters. Hook one and you've got the promise of a good meal. Both largemouth and smallmouth are found in Wisconsin. Similar in appearance, they're

very different in the habitat they like.

Largemouth are warm-water fish. They prefer the sun-warmed surface of shallow weedy lakes, ponds and river backwaters.

Smallmouth inhabit cool, clear, weed-free water. Look for them in fast-flowing, rocky streams and moderately deep lakes with rocky shoals and bars.

Anglers now harvest one largemouth for every two fishing trips. There is no size limit and big ones are in short supply. Right now, there aren't enough 12-inch or larger fish to go around.

The way the number of anglers increases every year, by 1985 there won't be enough 10-inch and larger

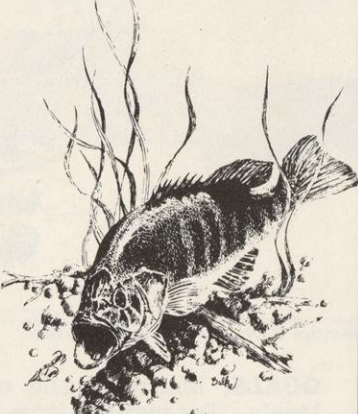
Additional 1985 objectives: Increase the catch of 10-inch and longer largemouth to 80% of the total catch. Determine small mouth population densities for 12 state waters.

bass either. Without a size limit, fishermen will fall back on the eight inch or smaller fish. The result will be populations with more and more smaller fish. Size limits may be the best way to prevent this, but research on how and where they'll work in Wisconsin is needed. Harvest data is scant for smallmouth, yet we know that anglers catch about one fish per trip and want more.

Habitat for largemouth is declining. The status of smallmouth habitat is unknown.

Bass spawning becomes erratic when lakes get very eutrophic or overcrowded with small panfish. This contributes to a further decrease in numbers of bass and must be counteracted to avoid total collapse of sport fishing.

In southern states, bass are the most popular game fish. In Wisconsin, they often take a back seat to larger, more



Smallmouth Bass by Artist Don Balke, Box 351, Nebo, NC 28761.

Data on harvest, angling pressure and exploitation is not adequate, especially in critical high-demand areas in southern and central parts of the state.
Conduct creel censuses, especially near large urban areas.
Conduct public opinion surveys focused on bass.
Increase population surveys on smallmouth and largemouth waters.

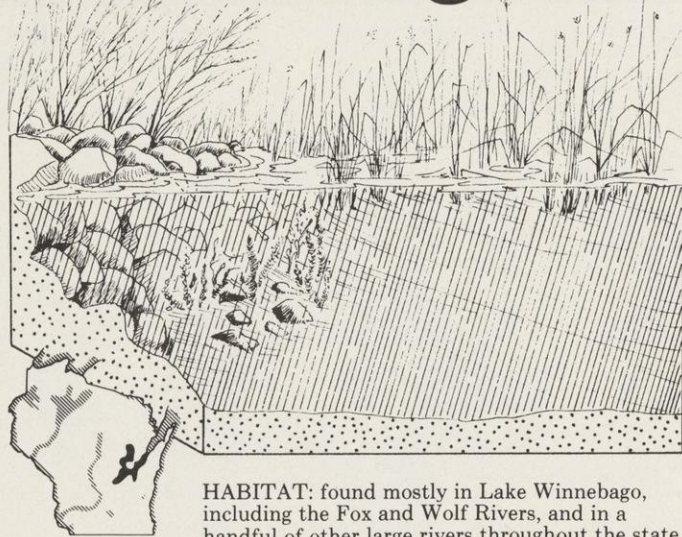
Heavy fishing pressure overexploits large bass.
Restrict harvest with size limits and shorter seasons.
Provide adequate public access to all bass fishing waters to disperse fishing pressure.
Designate "special regulation" waters and manage them specifically for large bass.
Encourage "fishing for fun," not harvest, in high demand areas.

Predation and competition from other species limit some bass populations.
Manage small panfish in ways that will benefit bass, especially in southern waters.
Establish "bass only" waters through chemical treatment.
Protect small bass with limits on size, bag and season length.



trout stream habitat improvement might benefit smallmouth. DNR fish managers are aiming increased efforts at smallmouth both for habitat and regulation.

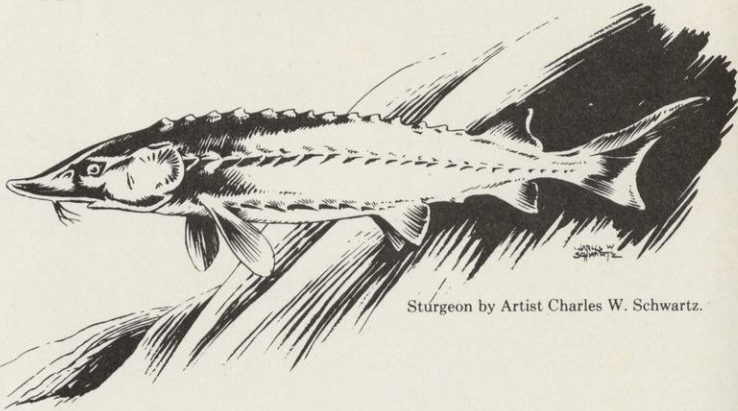
Lake sturgeon



HABITAT: found mostly in Lake Winnebago, including the Fox and Wolf Rivers, and in a handful of other large rivers throughout the state.

OBJECTIVES:	Now	1985
NUMBER OF FISH Lake Winnebago System Elsewhere	11,600 unknown	unchanged maintain
CATCH Spearing Hook and Line	560 average unknown	unchanged to be determined
ANGLERS Spearing Hook and Line	4,900 (licenses) unknown	unchanged to be determined

GOALS: Determine the supply and demand for hook and line fishing. Maintain the supply of fishing opportunities and harvestable lake sturgeon.



Sturgeon by Artist Charles W. Schwartz.

Additional 1985 objectives: A license for hook and line fishing by 1982, if possible, plus requirements for tagging and registration. Determine the lake sturgeon population available for hook and line fishing on 25% of known waters.

Lake Winnebago's spear fishery for lake sturgeon is one of the few left in the US. Careful management has kept populations strong. Now it's time to take a close look at hook and line sturgeon fishing in other waters.

Huge, with bony plates, a sharklike tail, pointed snout and underslung mouth, lake sturgeon look the way fish looked millions of years ago. They were once very abundant in Wisconsin before the turn of the century, but dams, which cut off their spawning migrations, and heavy fishing pressure combined to reduce populations. The species is very long-lived and slow-growing and can stand very little fishing pressure, sport or commercial. Today, only sport fishing is allowed and even that is restricted to short seasons. Winter spearing is allowed on Lake Winnebago and some upriver lakes and there is fall hook and line fish-

ing elsewhere. With strict monitoring, the spear fishery should be able to sustain a continued low level harvest.

Lake sturgeon are most numerous in the Lake Winnebago system, including the Fox and Wolf Rivers, where legal-size (45 inches and larger) fish number approximately 11,600. Spawning activity in the rocky shallows of the Fox and Wolf can be spectacular to watch. Other fishable populations are found scattered throughout the state, mostly in large rivers. Populations in these waters are largely unknown although one study on the Menominee River found 185 to 243 fish 42 inches or larger in a 26-mile study area. Because lake sturgeon populations are small and growth rate slow, fishing opportunities are very limited. Harvest should total no more than 5% of legal-size fish.

Spearing success varies



Problems Possible Answers

A hook and line license is urgently needed and there may be opposition.

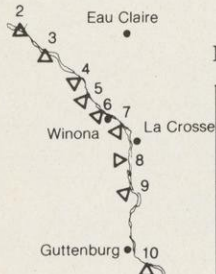
- Inform the public of management problems and the alternatives to a hook and line license.
- Promote sturgeon as a trophy fish, not a meat fish.
- Point out that a hook and line license merely expands on the special license that already exists for spearing sturgeon.

from year to year according to weather and water clarity. From 1970-78, harvest averaged 560 sturgeon. Close to 5,000 spears purchase licenses but only about 11% are successful.

There is only limited information available on hook and line fishing but it suggests up to 250 hours may be required to hook a legal sturgeon. Since there is no registration, harvest is not known. However, in the future these populations will receive more attention. The license and registration system used in the spear fishery should be extended

to hook and line. This may be opposed by some but an effort will be made to explain the uniqueness of the lake sturgeon fishery and why it needs special management. Unlike many other states, Wisconsin has been able to avoid classifying this fish as endangered or threatened. Close management is largely responsible, and it can't be continued without registering all fish caught.

Mississippi River commercial fishing



HABITAT: 9 pools comprising 177,000 acres of the Mississippi River bordering Wisconsin.

OBJECTIVES:	Now	1985
HARVEST Catfish	445,000 pounds*	unchanged
Rough fish	4,000,000 pounds** (includes 2.7 million pounds of carp)	6,000,000 pounds
*Value \$161,000	**Value \$290,000	

Additional 1985 objective: Determine the characteristics of the catfish fishery.

Total populations of catfish and rough fish in the Mississippi are difficult to estimate. However, a study in Pool 7, one of the 12 pools fished, estimated a population density there of 300,000 pounds of 15 inch or larger catfish — about 54 pounds or 27 fish per acre. Estimates of rough fish densities go as high as 200 pounds per acre in some areas.

GOALS: Maintain the catfish harvest at current levels. Determine how many can be harvested without hurting the fishery. Increase the rough fish harvest.

There's nothing fancy about commercial fishing on the Mississippi. A small boat, a setline or a gang of nets and some hard work will just about do it. To the men and women who work the river, it's a way of life as well as a way of making a living. Most operate alone or in small groups, often part time, to supplement other jobs. There

are between 800 and 900 of them, mostly licensed for setlines to take catfish. About 150 harvest rough fish, too.

But channel and flathead catfish are the prized catch. They make up only 10% of the entire harvest, but bring in almost 40% of the money. Because demand is heavy, overharvest is a possibility. Improved fishing methods or

more commercial fishermen spending more hours will signal the possible need for change. Trends will have to be watched and regulations adjusted accordingly. The number of commercial operators has remained fairly constant through the 70's and is expected to remain so. However, managers are carefully monitoring a new technique that drives winter concentrations of catfish into the nets just before freezeup. The system is efficient and could lead to overharvest.

Because the Mississippi borders Minnesota and Iowa, managing the Wisconsin fishery requires interstate coordination and efforts are underway to establish uniform fishing regulations all along the river.

Although Mississippi catfish are most desirable, rough fish are most abundant. Four million pounds of rough fish are harvested every year. Nearly three-fourths are carp, the rest mostly buffalo

or sheepshead (freshwater drum). Despite the volume, prices are low because demand is light. Actually, the harvest could probably go up 50% to six million pounds without hurting a thing if new markets or products were developed.

A few so-called rough fish have high value. Buyers will take all the American eel, shovelnose sturgeon and snapping turtle they can get.

The big question mark for Mississippi River commercial fishing is that three-letter menace, PCB's. The US Food and Drug Administration (FDA) has proposed lowering the permissible level in fish from five down to two parts per million. The change would probably outlaw sale of some large catfish and many rough species. DNR has asked the FDA to reevaluate that limit. In the meantime, we will continue monitoring PCB levels and work to reduce them.

Large rivers are difficult to

PCB contamination could limit value of harvest and prevent the use of many Mississippi fish for food.

- Sample and test commercial catches for contaminants at government expense.
- Cooperate with other agencies to locate sources of PCB pollution.

Overfishing of high value fish like catfish could occur if fishing pressure increases or techniques improve in efficiency.

- Develop flexible regulations to provide extra protection, if needed, but still allow for wise use.
- Consider limiting the number of fishermen on heavily fished waters if monitoring shows overfishing.

Silt, especially in the backwaters, hurts all fish.

- Work with other state and federal agencies to reduce erosion and backwater deposition of dredge spoil.

Limited markets for rough fish restrict the harvest.

- Encourage more consumption. Increase public acceptance of rough fish as food.
- Find ways to use rough fish for other than human food.

survey and the Mississippi is one of the largest. New techniques must be developed and applied to insure that demand for Mississippi fish, particularly catfish, doesn't deplete the supply.

Habitat deterioration is also a problem. Backwaters are filling with silt from erosion and from Corps of Engineers' dredging for the navi-

gation channel. If this continues, all fish populations will be adversely affected.



Great Lakes commercial fishing



OBJECTIVES:	Now	1985
LAKE TROUT*	68,000 lbs.	100,000 lbs.
SISCOWET*	119,000 lbs. (non-Indian fishery.)	150,000 lbs. (non-Indian fishery.)
*Lake Superior Figures. There is no Lake Michigan fishery.		
WHITEFISH		
L. Superior	270,000 lbs.	250,000 lbs.
L. Michigan	1,310,000 lbs.	1,000,000 lbs.
CHUB		
L. Superior	169,000 lbs.	200,000 lbs.
L. Michigan	232,000 lbs.	2,000,000 lbs.
YELLOW PERCH*	464,000 lbs.	600,000 lbs.
*L. Michigan figures, no L. Superior fishery.		

DNR is committed to future commercial fishing on Wisconsin's Great Lakes, but PCB contamination may curtail things for the immediate future. The federal Food and Drug Administration has proposed lowering allowable PCB content. If it follows through, all commercial fishing will be affected except low-fat species like perch and walleye. The good news is that PCBs already seem to be declining faster than anyone ever thought they would. Long-term goals for Great Lakes commercial fishing shouldn't be abandoned now. Some fish populations are showing improvement just because of the reduction in fishing due to PCBs.

Lake herring and walleyes are among fish with a closed season to protect them, but other species also have problems ahead. DNR is working to improve their status by figuring out the reasons and adjusting regulations

where necessary. Even fish that are doing well need close attention. High market prices can keep the catch deceptively large despite falling populations.

Future large scale commercial fishing of lake trout depends on reestablishing natural reproduction. Stocking must be continued well into the future and increased to build up self-sustaining spawning stock.

Commercial fishing is intense for many species. Close and precise regulation is a necessity. To do the job, DNR needs more information, especially about the numbers of harvestable fish. It's hard to know how many fish can be safely caught without knowing how many there are altogether. Finding out is difficult in waters as huge as the Great Lakes. It will require special techniques and procedures. DNR is cooperating with other states to develop them.



Still a problem in parts of both Lake Michigan and the Mississippi but improving.

At least 15 different species of fish are taken commercially on the Great Lakes, each with its own gear, fishing grounds, market value and fishermen. Although PCBs, overharvest, sea lampreys, habitat loss and other things have plagued the industry, DNR is committed to its revitalization. The fishery is closely controlled with re-

strictions on gear, seasons, size limits and number of fishermen.

There are 21 licensed fishermen on Lake Superior whose sales currently total \$536,000 and 224 on Lake Michigan with sales of \$2.8-million. Four of the more important commercial species are examined here in detail.

YELLOW PERCH

GOALS: Increase levels equal to the carrying capacity of Green Bay and Lake Michigan. Maintain the number of harvestable fish at or above present levels.

WHITEFISH

GOAL: Maintain commercial production with populations at a level that will support an acceptable annual sustained yield.

Whitefish are popular with consumers and have high market value. Commercial fishermen make more money on them than any other Great Lakes species. In the old days there were record hauls, but by 1900, overfishing had caused a sharp drop in numbers.

Market demand has always been high and fishermen respond by increasing efforts when fish are scarce. It's possible for whitefish to be caught faster than they can replace themselves unless harvest is closely regulated.

The harvest has always been erratic and fishermen

CHUB

GOAL: Maintain populations that will support a sustained harvest.

Chub is the common name for a group of seven ciscoes that once inhabited the deep waters of the Great Lakes. Today, two, perhaps three, are extinct. The larger species were fished out first. As they were depleted, fishermen turned to the smaller ones. By the early 1950's, only the bloater chub, the smallest of the group, was left in fishable numbers.

Bloater chubs have gone through several turns of fortune. In the early days, they were seldom fished. They

grew slowly and were heavily preyed upon by then-thriving lake trout. When overfishing and sea lampreys depleted the lake trout and larger chubs, bloaters increased. In recent years, overfishing and competition with alewives caused serious decline.

The season was closed on Lake Michigan in 1976 and only recently reopened under a strictly controlled quota. Fishermen licensed to catch chub help DNR assess the strength of the Lake Michigan population. Chubs are



Lifting the Pound Net by Artist Phil Austin, Rt. 1, Ellison Bay, WI 54201.

sometimes attribute it to a natural cycle. Degradation of spawning areas by sawmill waste, competition with introduced species, overfishing and sea lampreys are all partly to blame. But the main fact is that whitefish, like many species, are subject to the vagaries of weather. When it's right for spawning and hatching, the young make up a strong "year class" and three to five years later, there

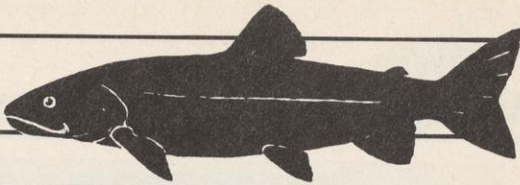
are a lot of mature whitefish. Bad weather and a weak year class means poor fishing.

To offset this eventuality, it's important to always maintain enough mature spawners to bring off a hatch the following spring. DNR can assist in a number of ways: limit the commercial catch; limit the number of fishermen; close the season in some places; or limit the kind of gear that can be used.

responding and the future looks bright for this fishery.

Lake Superior populations continue to be low. There the chub season has remained open although the number of commercial fishermen is limited to 15.

Regulations to control the number of fishermen, the number of chubs they catch and when, where and how they catch them represent experimental management. They will be modified as necessary to prevent any future population declines.



Problems Possible Answers

- If continued, overfishing will deplete population.
- Prevent catching of female perch prior to their first spawning.
 - Control overfishing through regulation.
 - Rebuild stocks only after overfishing is controlled.
 - Modify nets to eliminate excessive handling of undersized perch.

PERCH

Yellow or "lake" perch are a favorite food in Wisconsin. Ask anybody at an old-fashioned Friday fish fry.

Caught commercially in Lake Michigan since the late 1800's, the harvest has been as high as three million pounds annually. Today, it's dwindled to less than half-a-million on the average. Overfishing, competition with alewives and habitat deterioration are suspected causes.

Perch often have strong and weak year classes and when populations drop, the premium prices motivate fish-

ermen to increased effort. In Green Bay, for example, females are being netted at the minimum legal size (7½ inches) before they are old enough to spawn. Right now, the harvest is erratic. To improve it, restricted fishing zones that protect first year spawners have been established.

In the rest of Lake Michigan, stocks are slowly coming back as competing alewives decline. Perch are not numerous in Lake Superior and not fished commercially there.

Harvest by Indians on Lake Superior is poorly documented and may be excessive.

Work with Indians to develop management regulations and common goals for sustaining the resource.

Recent strong year classes in Lake Michigan will support good fishing at least through 1982. In Lake Superior, poor year classes will cause a decline over the same period, but there was a good hatch in 1978 so larger catches may be in the offing.

Information on the amount of fishing that chub populations can withstand is often misunderstood.

- Encourage more research on population dynamics.
- Report to the fishing industry on chub numbers.
- Provide estimates of sustained yield.

Lake trout next page.

Great Lakes commercial fishing continued



Lake Trout by Artist William J. Millonig, Jr., Box 15C, Campbellsport, WI 53010.

LAKE TROUT

GOAL: Reestablish self-sustaining populations that will support a commercial fishery.

Actually, Indians launched the industry in the 1700's supplying lake trout to fur trading companies. From the 1880's to the 1940's, commercial nets brought in millions of pounds of trout every year. During this period, constant refinements in gear kept the catch fairly high despite growing numbers of fishermen and decreasing numbers of fish.

The 40's marked the

beginning of the end when sea lampreys moved in and attacked the lake trout. By the mid-50's, Lake Michigan commercial fishing for the species had collapsed. Lake Superior nearly followed about 10 years later, with only a small nucleus of native fish withstanding the onslaught.

Stocking has restored the lake trout, but not to levels capable of supporting traditional commercial fishing in

either lake. A few are netted each year on Lake Michigan to assess population and incidental to taking other species. But Lake Michigan trout have not been marketed since 1976, when PCB contamination stopped their sale. Thankfully, PCB levels are dropping and there's reason for hope. Meantime, DNR will continue to stock and to curtail the Lake Michigan commercial trout catch until the day when lake trout spawn and can sustain themselves naturally.

On Lake Superior, a quota limits the commercial catch to 100,000 pounds annually. Licensed commercial fishermen take only about two-thirds of the quota and unlicensed Indian commercial fishermen take an additional undetermined amount. DNR would like to know how many the Indians are harvesting and assist them with sound management. The issue of Indian fishing rights is currently in the courts.

The deep waters of Lake Superior also hold a distinct

Problems

Possible Answers: Same as below under sportfishing, plus:

Hatchery production can't meet current demand.

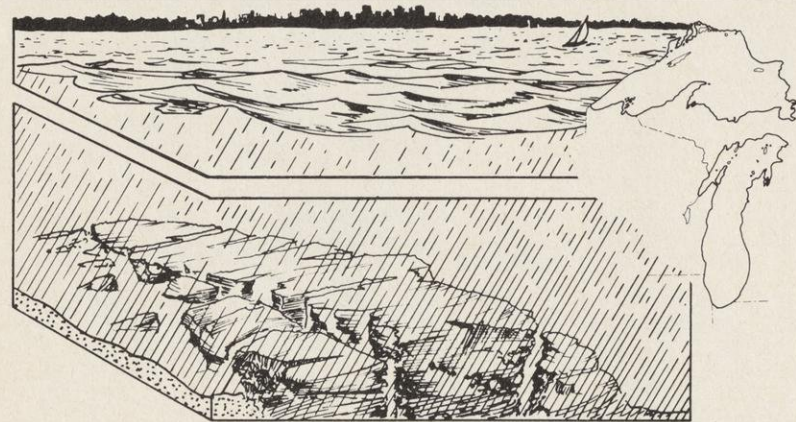
Continue to improve efficiency in hatcheries.

Encourage the US Fish and Wildlife Service (USFWS) to build additional hatcheries.

subspecies of lake trout called siscowet or "fat trout." Little is known about them, except that they weren't as severely affected by sea lampreys and remain self-sustaining. Siscowet aren't included in the Lake Superior quota, but they are known to contain sig-

nificant levels of PCBs and this may prevent future marketing.

Great Lakes sportfishing: trout and salmon



GOAL: Increase fishing opportunities to levels in keeping with the forage base.

Michigan trout or salmon over 20 inches long. Both lakes have this cloud of contamination hanging over them, although it is less severe in Lake Superior. If the Federal Food and Drug Administration follows through on its proposal to lower the allowable amounts of PCBs in fish, most Lake Michigan trout and salmon as well as larger Lake Superior fish could be considered unsafe.

In any event, both lakes will continue to provide recreational fishing. Meantime, DNR will monitor PCBs, keep the public informed and try to minimize the amount that accumulates in fish we stock.

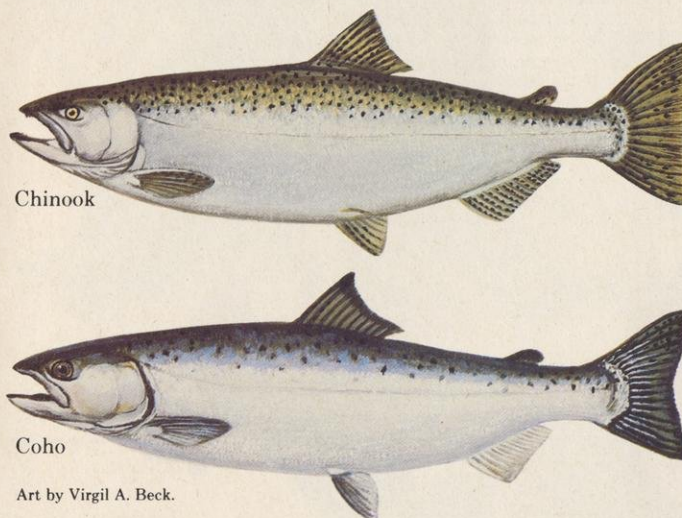
Trout and salmon are now found in the Great Lakes primarily because they're stocked by Wisconsin and other states. If we stop, populations will be but a fraction of the present. For unknown reasons, lake trout are not spawning at all in Lake Michigan. Lake Superior fares a little better. Lampreys never got as complete a stranglehold in Lake Superior, so some native lake trout survived there and still spawn naturally on Gull Island Shoals in the Apostle Islands. The area is now a refuge protected from fishing.

Coho, Chinook salmon, and pink salmon, three West Coast species, are reproducing in streams that empty into Lake Superior. Whether they affect stream trout spawning isn't known, so managers are keeping an eye on the newcomers.

Fish biologists have been interviewing old-time commercial fishermen in an attempt to make Lake Michigan trout self-sustaining again. The biologists want to find the places where lake trout historically spawned in Lake Michigan so they can then be planted there again. Lake trout exhibit a strong "homing" sense, so selecting the right spawning site is critical. Should trout begin to spawn successfully in Lake Michigan, it will probably be necessary to protect them with spawning refuges and closed seasons.

Besides lake trout, Wisconsin stocks brook, brown and rainbow trout and coho and Chinook salmon. DNR doesn't stock coho in Lake Superior, but nearby states do and they wander into Wisconsin waters. The idea behind stocking so many species is to provide as many different kinds of fishing as possible. Brook, browns and rainbows can be fished by wading, from small boats or

salmon



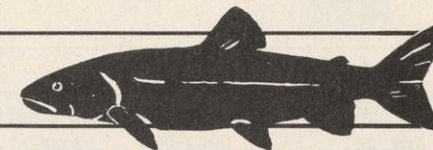
from shore. Rainbows are also caught over deep water or during the spring spawning runs. Lake trout are trolled from larger craft in the deep lake. And coho and Chinook provide fishing in open water and inshore during fall migrations.

Anglers catch coho most often on Lake Michigan, followed by rainbows, browns, lake and brook trout. On Lake Superior, lake trout dominate, with coho and Chinook less important.

Wisconsin and other states stocked thousands of pounds of trout and salmon in the Great Lakes. Nobody knows how many survive, but it is known that each pound of fish stocked in Lake Michigan returns over 14 pounds to the creel. By contrast, in Lake

Superior, where waters aren't as productive, only about three-fourths of a pound come back for each pound stocked. Lake Superior is colder, less fertile and has fewer forage fish. It's also fished less because it's in the far north, has bad weather, lacks convenient fishing breakwaters and competes with the better fishing on Lake Michigan. On the average, it takes about seven hours to catch a fish on Lake Michigan, nine on Lake Superior.

Lake trout are highly prized by both commercial and sport anglers. Conflicts are inevitable and likely to continue. DNR will limit the catch of both groups until the day lake trout are once again self-sustaining.



GREAT LAKES SALMON AND STREAM TROUT

Salmon and stream trout require expensive annual stocking.

Determine which stocking sites, species, ages and numbers of fish provide the best fishing.

Use questionnaires and creel censuses to find out how anglers fare now and what they want in the future.

Experiment to see if Lake Superior streams can provide self-sustaining trout and salmon populations.

Contaminants threaten Great Lakes fishing.

Determine how the level of contamination is influenced by species, age, size, location and time of year.

Warn anglers of the contamination problem and tell them how they can catch less polluted fish.

Plant larger salmon which can be caught before they become too contaminated.

Plant more stream trout. They don't become as contaminated.

LAKE TROUT

Natural reproduction low in Lake Superior, none in Lake Michigan.

Find out what is limiting natural reproduction and survival.

Protect native fish from overharvest. If necessary, curtail all fishing for native stocks.

Harvest by Indians on Lake Superior is poorly documented and may be excessive.

Work with Indians to develop management regulations and common goals for sustaining the resource.

Work with the Indian Tribal Council to enforce rules that govern Indian fishing.

Conflict between sport and commercial fishermen.

Encourage commercial fishermen to catch fish other than trout.

Change planting sites to traditional spawning reefs and lightly fished areas.

Consider stocking different genetic strains.

Consider allowing the Lake Superior commercial fishing quota to be filled only by trout caught incidental to fishing for whitefish or other species.

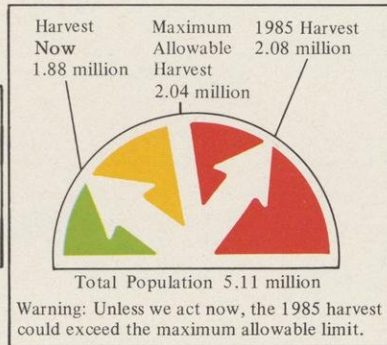
Stream trout



HABITAT: found in 8,924 miles of streams, 443 spring ponds and 143 trout lakes covering a total of 32,000 acres.

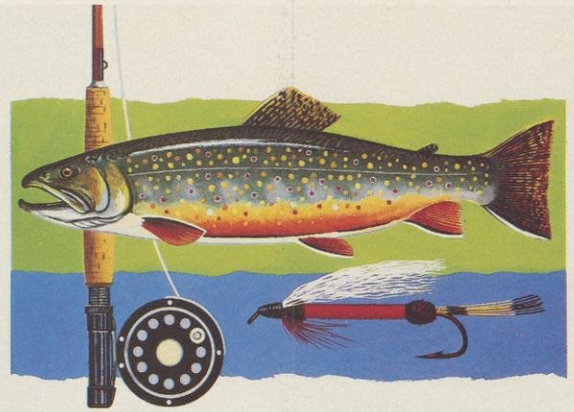
Objectives	Now	1985
Number of fish	5.03 million	5.11 million
Anglers 12% of total	203,000	224,000
Fishing days	1.59 million	1.76 million

Lost Rainbow by Artist William J. Koelpin,
2408 Oakwood Rd., Hartland, WI 53029.
(3rd place in the 1981 Wisconsin Trout Stamp contest.)



GOALS: Protect and improve trout streams while increasing the number and size of the fish. Provide adequate opportunities for pleasurable trout fishing.

Rainbow Trout by Artist Louis Raymer, Rt. 1, Webster, WI 54893.



Additional 1985 objectives: Prevent reduction of existing trout habitat. Improve 20 miles of stream on public land each year. Increase the number of 6-inch or larger trout by 10%. Improve the average harvest to one 8-inch or larger brook trout or one 10-inch or larger brown or rainbow trout per trip on 25% of the states inland waters.



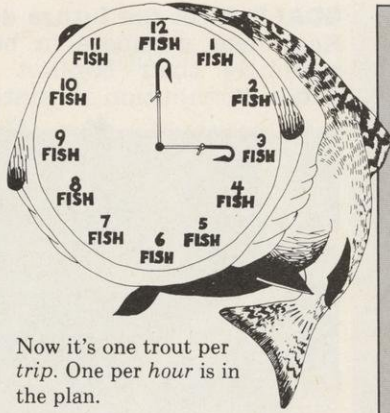


Trout management has always had a high priority in Wisconsin. Anglers demand it and so does the fragile habitat. Trout need clean, cold water with plenty of oxygen, food and places to hide. In future, priorities will aim at quality experiences rather than just trout for the pan.

Special regulations may be needed to do this plus research to test the rules and assess public reaction. Some changes, like catch and release and higher minimum size limits are being tried now.

Habitat deterioration caused by beaver damage and poor land use practices is a major threat. Beaver dams pond the water and destroy the free flowing stream habitat that trout need. Livestock and erosion muddy it with silt.

Wisconsin has pioneered trout stream improvement. Cost is high, but the new Trout Stamp helps pay the way. Trouble is that continuing habitat destruction, more anglers and increasing harvest could counteract gains made through improvement. To prevent this might require restrictive regulations or increased stocking in lower



Now it's one trout per trip. One per hour is in the plan.

quality streams.

Right now of every 10 fish creel, five are brook trout, three browns and two rainbows. On the average, anglers now harvest at least one trout per trip. The goal is to boost the catch to one per hour and provide more 8 to 10-inch or larger fish.

DNR stocks trout in streams where there's little or no natural reproduction, but where other conditions are good for growth. At present, we stock two million trout per year — half browns, one-third brooks and the rest rainbows. All the trout lakes and about two-thirds of the streams are stocked each year. One-third of the harvest is from stocked fish.

Problems

Possible Answers

Beavers dam and destroy trout streams.

- Evaluate techniques that discourage beaver.
- Use trapping season more effectively.
- Remove inactive dams.
- Experiment with removing active dams.
- Use some habitat funds to control overabundant beaver on trout streams.
- Contract with commercial trappers to keep trout streams free-flowing.

Poor land use reduces habitat.

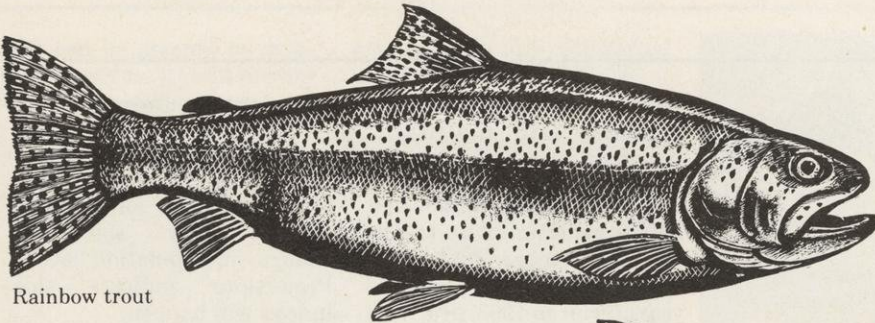
- Obtain better public control of land bordering trout water.
- Legislate a "green belt" zone along streams.
- Implement laws to encourage farmers to keep livestock out of streams.
- Acquire more land along trout streams where habitat is threatened with destruction.

Some environmental protection laws don't adequately protect trout waters.

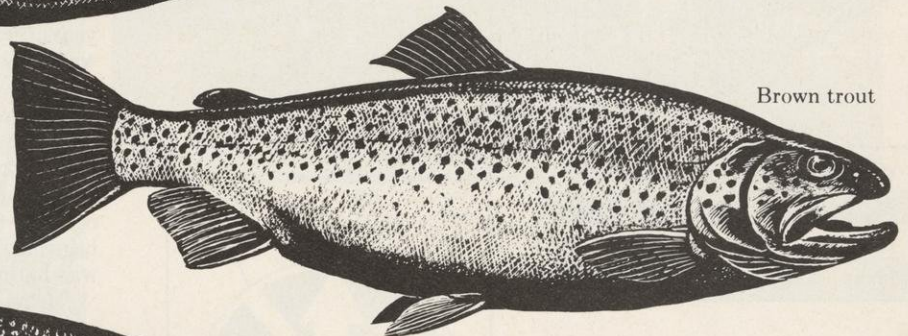
- More stringent enforcement of permits to prevent violations that damage habitat.
- Modify emergency environmental protection legislation to remove exemptions that allow damaging farm and municipal land practices.

Lack of trained personnel limits the amount of habitat improvement.

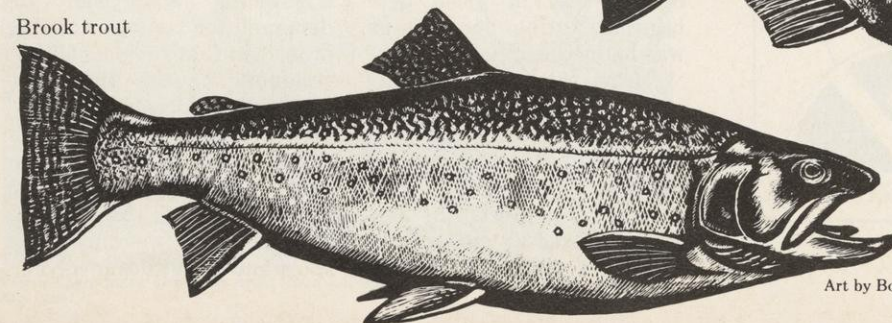
- Hire and train more crew foremen in habitat improvement.



Rainbow trout



Brown trout



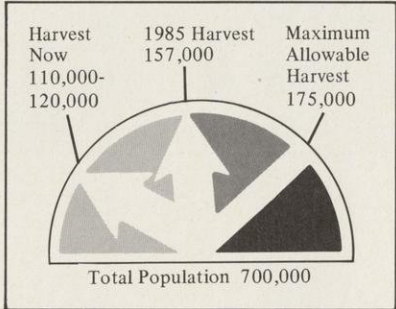
Brook trout

Deer



HABITAT: 31,000 square miles

OBJECTIVES:	Now	1985
Herd size	700,000	700,000
Bag	110-120,000	157,000
Number of hunters:		
Gun	638,000	702,000
Bow	139,000	149,000
Hunter days	4.8 million	5.3 million



GOALS: Meet the future demand for deer hunting. Keep deer numbers in balance with habitat and minimize their conflict with human activities. Better distribution of hunters.



Autumn Pool by Artist Paul Bramson, courtesy of Sportsman's Edge, Ltd., 136 E. 74th St., New York City, NY 10021.

Deer are more popular with Wisconsin hunters than any other game animal. They are carefully managed and the future looks good. The herd should remain relatively stable through 1990 and state-wide hunting opportunities will continue to be exceptional. Densities range from less than five to more than 50 per square mile of deer range.

The proposed harvest is based on the relationship between fall numbers and the overwinter population goal for each of the 96 deer management units. In the forested range, population goals represent estimated carrying capacity. In the agricultural range, they are designed to keep crop damage at a tolerable level.

Hunter ethics, managing the harvest and maintaining habitat are the biggest challenges.

The central and southern parts of the state receive the highest hunting pressure and local residents sometimes resent it. Despite this, harvest rates are not excessive in these places, but most bucks are taken before they have a

chance to reach trophy size. The solution may be regulations that encourage hunters to voluntarily move north where there's still plenty of room. Better dispersal over time is another answer. Unethical behavior can also cause problems. Needed are stronger trespass laws, hunter education and elimination of certain objectionable hunting methods.

The north has a problem with declining habitat quality. Deer do best in young forests, therefore openings and new growth must be maintained to support current herd levels. Commercial logging and forest management with deer in mind can do the job.



North to quality.

Problems

Possible Answers

Overcrowded in central and south.

- Incentives to disperse hunters over time and area.
- Education on advantages of hunting in north.

Habitat deteriorating in northern Wisconsin.

- Maintain winter cover in yards.
- Research.
- Coordinate with Forest Management.
- Continue Forest Habitat Improvement program.

Ethics.

- Seek tougher court action.
- Control use of sophisticated technology.
- Pass laws for better trespass enforcement.
- Heavier penalties for trespass.
- Research hunter education needs.
- Discourage road hunting.
- Discourage gang hunting.

Increasing amounts of private land are closed to hunters.

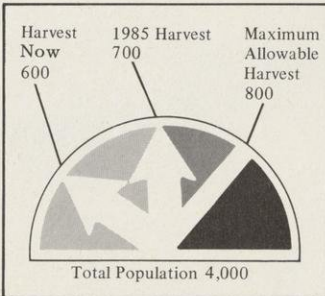
- Reduce hunter concentrations in southern and central Wisconsin by developing regulations that encourage hunters to better distribute themselves.
- Identify elements of the hunt that can be modified to reduce conflicts with landowners.
- Expand "Project Respect" with emphasis in high hunter use areas.

Black bear



HABITAT: 15,000 square miles

OBJECTIVES:	Now	1985
Population	4,000	4,000
Number of hunters	6,700	8,300
Hunter days	28,000	35,000



GOAL: Accommodate the projected increase in hunting and maintain the bear as a big game trophy.

Black bear are Wisconsin's largest game animal, a trophy hunters manage to bag on average only once every 12 years. Prior to 1963, nearly all were shot by deer hunters who chanced upon them, either in dens or just after being roused out. The September trophy hunt began in that year and proved so successful that in 1974, bear hunting during deer season was banned completely.

Bears tend to be solitary animals and their habits secretive so most people consider it an adventure to even see one. Yet there are more around than meets the eye. They will easily be able to support a projected increase

in the amount of hunting without any significant change in population levels. Projections indicate this indeed will happen.

Where bear and man overlap the chance for an easy meal sometimes lures animals to damage crops, beehives, campsites or cabins. These encounters can be costly and frightening and lead to demands for control. On the other hand, in some localities residents oppose the bear hunt. The focus of resentment seems to be trespass on private lands by hunters with dogs. This opposition is strong and it is urgent that ways be found to improve the sport and the ethics involved.



Black Bear by Artist Richard Timm, courtesy of Nature House, Inc., Griggsville, IL 62340.

Public sentiment against bear hunting could eliminate it.

- Publicize facts on bear ecology (explaining that the animal can tolerate sustained hunting).
- Develop regulations to change undesirable practices.



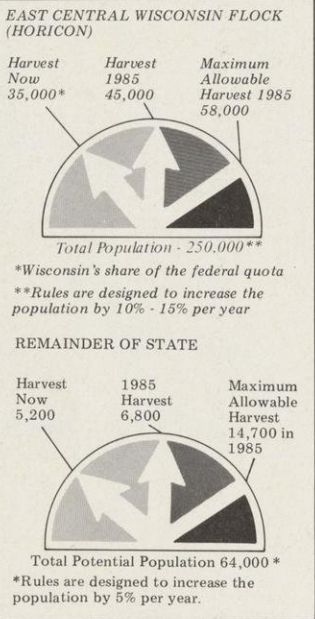
LET US HAVE IT
Return
your questionnaire
by July 1

Canada geese



HABITAT: 7,250 square miles

EAST CENTRAL WISCONSIN FLOCK (HORICON)		
OBJECTIVES:	Now	1985
Population	150,000	250,000
Number of hunters	70,000	unchanged
Hunter days	360,000	unchanged
Additional 1985 objectives: Improve the quality of the hunt. Maintain the present improved distribution in east central Wisconsin.		
REMAINDER OF THE STATE		
OBJECTIVES:	Now	1985
Population	50,000	64,000
Number of hunters*	85,000	unchanged
Hunter days	610,000	unchanged
*Most goose hunting outside the east central area is in conjunction with duck hunting.		



GOALS: Manage for maximum hunting and public observation commensurate with federal rules, flyway plans and state goose area plans. Distribute geese as widely as possible for better viewing and hunting and to reduce crop damage.

The blanks may be new goose management areas.



Historically, Canada geese were abundant in Wisconsin and nested extensively in the large marshes and prairie wetlands of pioneer times. By 1900, however, habitat loss, hunting and other disturbances had largely eliminated both breeding and wintering

flocks. Geese dropped to an all-time low in 1946 and the entire Mississippi Flyway was closed to hunting. This motivated the U.S. Fish and Wildlife Service and the states to start intensive management. More winter refuges were established, food crops

planted and hunting restricted. Results were beyond expectations. Populations soared, mainly because nesting habitat of the Canada geese that pass through Wisconsin is still secure around Hudson and James Bay in Canada.

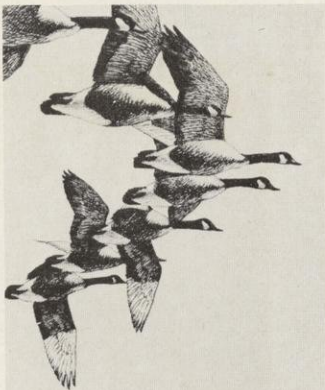
Wisconsin now has three different populations:

The major flock of about 150,000 that pass through east central Wisconsin made up of birds from the Mississippi Valley population.

The 50,000 or so in the western part of the state, a large part of which belong to the Eastern Prairie population.

And two smaller flocks of giant Canadas at Crex Meadows and Rock Prairie.

Mississippi Valley birds currently winter in southern Illinois and states to the south. Eastern Prairie birds winter in southern Missouri, and the giants primarily in southern Wisconsin, northern Illinois and Minnesota.



Geese by Artist Richard E. Bishop, courtesy of Sportsman's Edge, Ltd., 136 E. 74th St., New York City, NY 10021.

The 150,000 geese that use east central Wisconsin are presently considered to be a subflock of the much larger Mississippi Valley population that totals 400,000 to 500,000 wintering birds. This subflock will be managed accordingly. Research in the past five years has shown that about 30% of the Mississippi Valley population have an affinity for east central Wisconsin.

All major goose populations are subject to harvest

Problems Possible Answers

Nonbiological approaches to management could hurt the program and increase potential for disease and crop depredations.
Adhere to Wisconsin and Mississippi Flyway Council plans for Mississippi Valley population of geese.

East central Wisconsin geese may be a sub-flock in the Mississippi Valley population.

Continue research and update management plans.

Present state satellite areas cannot accommodate an unlimited increase in the east central flock.

Determine future distribution patterns desired for Wisconsin and establish maximum population desired.

Aim to avoid crowded hunting conditions, heavy crop depredation, disease and uneven harvest distribution.

Identify techniques to attract and hold geese on satellite areas for prescribed periods.

Managed hunting around high density goose areas.

More manpower and funding for managing satellite areas.

Lack of understanding of goose management programs leads to confusion and mistrust.

Information and education programs.

quotas assigned by the U.S. Fish and Wildlife Service. Quota adjustments from year to year and from state to state permit the size of the flock to be adjusted up or down to meet management objectives. Currently Wisconsin is working toward a 10-15%

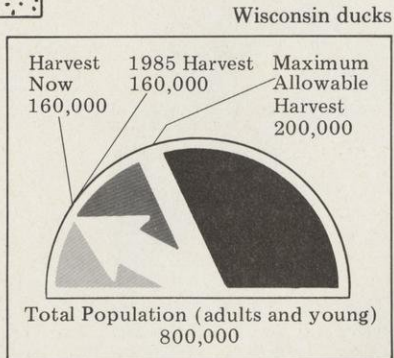
increase each year in the Mississippi Valley population so long as a wide distribution in east central Wisconsin can be maintained. The ultimate limit of this expansion will be determined by our ability to provide food, water and sanctuary for these birds.

Ducks



HABITAT: 2,500 square miles wetlands

OBJECTIVES:	Now	1985
Population	Three to five million migrate through Wisconsin. 600,000 to 1-million are local Wisconsin birds (young and adults).	Flyway numbers declining .5% annually. Habitat improvement should maintain Wisconsin production despite wetland loss.
Number of hunters	130,000	unchanged
Hunter days	930,000	unchanged
Additional 1985 objective: Improve the quality of the hunt.		



From a fall population of 800,000 Wisconsin ducks, Wisconsin hunters can safely take 20% annually or 160,000 without changing year-to-year breeding populations. Increasing this percentage to 25% or more can reduce the numbers of ducks returning next spring. Additional harvest of these ducks outside of Wisconsin can result in a total take of about 40 to 50% of Wisconsin produced birds. Wisconsin hunters also harvest approximately 400,000 ducks migrating through the state in addition to the harvest of local ducks.

Demand for duck hunting is running neck and neck with supply and will push ahead unless habitat losses can be stopped. Wetland preservation and management is the key. As recently as 100 years ago approximately 10-million acres of wetlands covered more than a quarter of Wisconsin, and ducks were king. Now with only 2.5-million acres remaining, state and federal agencies are attempting to save these valuable remnants. A federal duck stamp, a tax on sporting arms and ammunition, ORAP, LAWCON, and hunting license revenues all help save wetlands.

Although wetland loss has taken its toll, we still have duck populations to be proud of. About 400,000 breed here

annually (mostly blue-winged teal, woodducks, and mallards) producing between 300,000 and 600,000 Wisconsin-grown ducks. They are part of three to five million that migrate down the Mississippi flyway each fall through Wisconsin. Some 16% of all duck hunters in the flyway live in Wisconsin and take about 600,000 birds or 12% of the total Mississippi flyway harvest each year.

Each fall from 40 to 50% of the ducks raised in Wisconsin are harvested — about half of them right here in the state. This means our hunting is directly related to our own Wisconsin habitat conditions and production. Because much early hunting pressure falls on locally produced birds, special regulations are used to protect breeding ducks, especially mallards. Wisconsin regulations, in general, are designed to return sufficient breeders to the wet-

lands each spring for maximum production.

If wetland losses continue at the present rate of 2% per year, in 10 years the number of birds shot in Wisconsin will exceed our allowable harvest. The long range answer is to save habitat, most of which is privately owned. This will require legislation to protect wetlands plus landowner cooperation. Meantime, to satisfy demand, management will try to increase duck production on public lands. The new state duck stamp revenues will be a big help in achieving this goal here as well as in Canada.

Wetland loss to drainage and development is 2% per year. This means fewer breeding ducks.

Support legislation to reduce wetland losses.

Identify and acquire critical wetlands.

Give landowners incentives to preserve wetlands.

Complete acquisition on existing state properties.

Present production won't satisfy hunter demand.

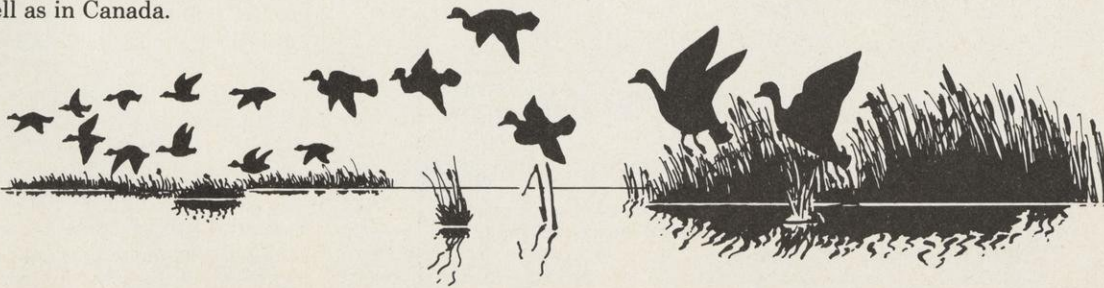
Step up management to produce more waterfowl on available public wetlands.

Support habitat development projects in Canada.

Excessive pressure on public land gives low quality experience.

Support legislation to allow managed hunting on public lands.

Refine hunter management techniques where pressure is heavy.

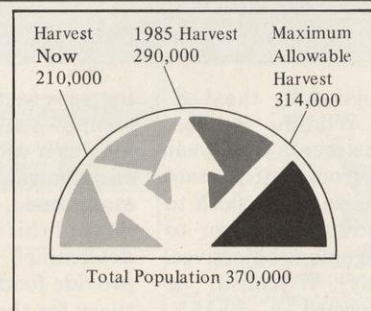


Pheasant



HABITAT: 9,500 square miles.

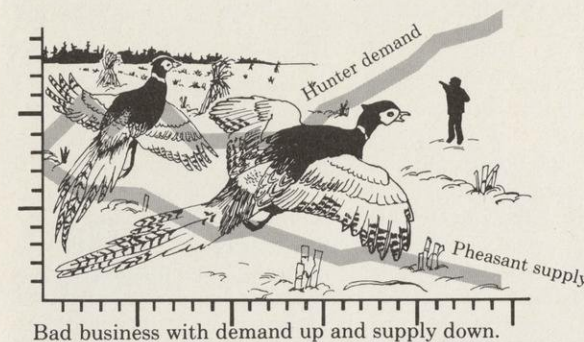
OBJECTIVES:	Now	1985
Population	350,000 cocks (includes 105,000 stocked)	370,000
Bag	210,000	290,000
Number of hunters	232,000	unchanged
Hunter days	1.0 million	1.2 million



GOAL: Maintain the current level of hunting.



Flushed from Cover—Pheasants by Artist Owen J. Gromme, courtesy of Wild Wings, Lake City, MN 55041.



Pheasants are Wisconsin's most popular game birds, but wild populations are on the decline. Wetland drainage, urban sprawl and changes in farming practices are to blame and, without action to counteract these trends, the descent will continue. Ways are being sought to stop the habitat loss and open more lands to public hunting. However, in the long term, pheasants may be in trouble in Wisconsin unless the public, the Legislature and other state agencies act effectively to save habitat.

Native to Asia, pheasants were first introduced here

in 1916. Cropland, mixed with undisturbed grasslands, hedgerows and wetlands provide the essential parts of their habitat. Most of it occurs in the southeast third of the state and west of Eau Claire. Although habitat management and protection are a big part of the state pheasant management program, DNR controls only about 2% of the bird's range. Buying land to protect additional habitat is expensive.

DNR raises pheasants to stock on state managed public hunting grounds. Day old chicks are given to cooperating clubs who rear them for

Problems

Possible Answers

Critical habitat being lost to drainage and other wetland conversions.

- Support legislation to preserve wetlands.
- Identify and protect critical wetland and nesting habitat via land acquisition.
- Give rural landowners incentives to save and improve habitat.

More and more private land closed to hunters.

- Expand "Project Respect."
- Give landowners who lease to DNR hunter control as an incentive.
- Improve enforcement of trespass law to protect private property.
- Hunter education on landowners rights.

Demand for pheasant hunting just about equals the supply of birds in southern and southeastern Wisconsin.

- Emphasize "extensive habitat project" to preserve critical habitat.
- Support legislation to control hunter numbers on public hunting areas.
- Try a user fee for put-and-take hunting on certain state owned wildlife properties.
- Expand Public Hunting Ground lease program.

Urban encroachment on agricultural land reduces habitat.

- Support land use legislation to slow down losses of agricultural land and wildlife cover.
- Support legislation for wise use of nonagricultural rural land.
- Rural landowner incentives to preserve habitat.

release on private land that can be hunted by asking permission. As a result of both programs about 105,000 roosters are stocked annually. Each year, Wisconsin hunters take about three out

of every four birds available. On much public land, particularly in the south and east, there are far too few birds to satisfy hunter demand. It is important to start working on problems now.

Sharp-tailed grouse



HABITAT: 1,000 square miles.

OBJECTIVES:	Now	1985
Population	10,000 (fall) mostly Douglas & Bayfield Co.	maintain (9,000 without additional management)
Bag	1,000	1,000
Number of hunters	2,000	2,000
Additional 1985 objective: Identify more management units where the primary objective should be to maintain sharp-tails.		

GOAL: Maintain species and a huntable population.

Visiting a sharp-tailed grouse management area is like taking a trip backward in time. Open grassland stretches before you, dotted with islands of trees and brush. It's the way parts of Wisconsin looked over 150 years ago, when prairies and savannas were common. It's kept that way today on DNR management properties because sharp-tails cannot survive without it.

Wisconsin's sharp-tailed grouse populations are low and will probably decline 2% a year because of steady habitat loss. Although there is no immediate threat to the species, the future of hunting is precarious. On private land, birds are so widely dispersed that few people hunt them. On DNR management units, where most hunting occurs,

birds may be overharvested. To control this, the season opening was delayed beginning in 1979 until mid-October when the species becomes extremely wary.

Sharp-tails are hunted by only one-half of 1% of all small game hunters and, on the average, they bag a bird on only one out of every five trips.

The 16 wildlife areas devoted especially to sharp-tails are about the only places in the state where this kind of habitat remains. To keep it requires active land management (mowing, food patches, controlled burns). If left alone, the openness disappears. To increase populations, efforts can be intensified on the 16 state units, but any real gains will require savanna on additional lands.

This can be created on suitable county forest and private lands. Cooperation from local

government and individual property owners is the key.



Prairie Sharp-tailed Grouse by Artist Owen J. Gromme, courtesy of Wild Wings, Lake City, MN 55041.

Loss of critical savanna habitat reduces management effectiveness.

- Determine most effective distribution of critical habitat and sharp-tail colonies for optimum production.
- Incentives to local government to encourage sharp-tail management on county forests.
- Incentives to private landowners.
- Encourage strong zoning legislation to restrict conflicting land use change.

Populations low on some designated sharp-tail management areas.

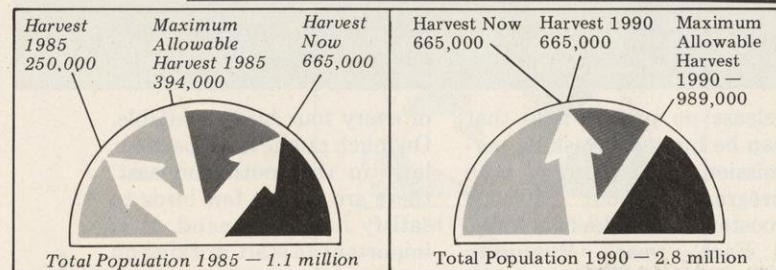
- Intensify management.
- Reduce harvest, if excessive.
- Acquire management rights to more land if needed.
- Where management for sharp-tails is impractical, drop special designation.

Ruffed grouse



HABITAT: 22,000 square miles, mostly northern forest (70%)

OBJECTIVES:	Now	1985	1990
Population	3.1 million (high)	1.1 million (low)	2.8 million (recovering)
Number of hunters	235,000	130,000	247,000
Hunter days	1.5 million	820,000	1.6 million



As a practical matter, there is little likelihood of ever reaching the maximum allowable harvest or bag. When a species is hard to find, hunting and fishing effort usually subsides long before this upper harvest level would be achieved.

GOALS: Reduce the projected decrease in numbers. Encourage hunter use in proportion to the number of birds.

It's natural for ruffed grouse numbers to seesaw, but the ups may not be as high and the lows could be deeper if habitat continues to deteriorate. To offset this, forestland should be managed to produce grouse right along with the timber.

Critical cover is aspen, oak, alder and upland brush—all characteristic of young forests except oak. Management aims to maintain this through judicious timber and pulpwood harvest. Small tracts of aspen which have been periodically clearcut provide some of the best ruffed grouse habitat. To get it takes planning and active management at harvest time. Otherwise, forests mature, aspen dies out and partridge disappear. Statewide, this kind of habitat loss amounts to about 1% per year. In pioneer days, forests were mature and ruffed grouse scarce, but fire and clearcuts set the stage for a resurgence. Today, Wisconsin has some of the highest populations in the US.

How many hunters participate depends on the cycle of abundance — more in the high years and about 30% less in the low. Right now, partridge numbers are on the rise and expected to peak in a year or two, then decline. When that happens, hunters should look for local hotspots because populations don't drop everywhere. And nearly always there are birds that never see a hunter, especially in the north.

In the south, DNR has transplanted birds to the Southern Unit of the Kettle Moraine State Forest where an isolated segment of good habitat exists.

Since maintaining good habitat is the key to grouse numbers, the future depends on how the forests are used. Proper timber harvest and regeneration are the primary means to continued abundance.

Problems

Possible Answers

Critical habitat being lost (aspen, oak, alder).

Manage existing critical habitat for optimum grouse numbers. Assure regeneration of aspen on public land by timely harvest. Give incentives to local government to manage for grouse and to harvest mature aspen when markets are poor. Develop agreements for grouse management on industrial, forest crop, and other private forests. Identify and perpetuate small aspen stands on public land. Establish educational programs and demonstration areas to encourage private management. Encourage bigger timber markets for pulpwood.

Encourage zoning to restrict land use changes.

Cooperate with national conservation organizations which promote private forest management for wildlife.

More data needed.

Research harvest rates and areas of heavy hunting pressure.

Many birds are not hunted.

Inform hunters of areas that are under utilized.

Consider regulations and management actions that would motivate hunters to go north.



Early Thaw—Ruffed Grouse by Artist Fred Sweney, courtesy of Wild Wings, Lake City, MN 55041.

Prairie chicken



HABITAT: 50 square miles.

OBJECTIVES:	Now	1985
Population (fluctuates)	1,800 (recent high)	Prevent breeding population from decreasing below 800 in central Wisconsin and 100 in Burnett County.

At present, there is a closed season on prairie chicken which will continue until abundance improves.

Wisconsin almost lost the prairie chicken. But research spelled out habitat needs and a group of dedicated citizens purchased the best of what was left. In the future, popu-

lations may be high enough to offer limited controlled hunting. That may take a while. Meantime, management will try to maintain a breeding flock of 800 in Central Wis-

GOAL: Maintain the species and offer controlled hunting when populations grow large enough.

consin and 100 at Crex Meadows Wildlife Area near Grantsburg where the chicken was reintroduced in the mid-70's.

Historically, Wisconsin's flocks were once immense and in the 1850's, prairie chicken were shipped to market by the ton. Pioneer farming and cleared forests supplemented prairie grassland habitat and birds were found in every county in the state. But reforestation, intensified cropping and drainage of the lowland prairies nearly spelled doom. Thanks to the Dane County Conservation League and the Tympanuchus Cupido Pinatus (prairie chicken) Soci-

ety, enough prairie was purchased in central Wisconsin to save the birds.

Today, there are about 20,000 acres under management in Adams, Wood, Portage and Marathon Counties. Two non-shooting national dog trials are held there each year and about 800 people visit the booming grounds in spring to watch and listen during the chicken's courtship ritual.

With little hope for any new habitat on private land, prairie chicken populations in the foreseeable future will depend on units managed by DNR. Increasing populations will require more intense

cover manipulation, which is expensive. Grazing to help maintain the prairie, limited crop production and management for other wildlife species in addition to prairie chicken can help defray costs.

One final problem is pesticides which drift onto prairie

chicken management units from surrounding properties. Research on the effects of exposure and legal action to stop the drift are now underway.



Intensified agriculture is causing habitat loss in central Wisconsin.

Increase size of DNR managed units as a buffer against land use changes.

Purchase additional critical habitat.

Pesticides may be affecting prairie chicken populations.

Evaluate.

Seek legal action to protect DNR properties against pesticide drift.

Cost of management program in central Wisconsin is rising because of taxes and intensive management.

Produce marketable crops to help defray costs.

Use grazing where possible to replace costly habitat maintenance practices.

Natural vegetative succession lowers quality of habitat.

Maintain with fire, grazing and other methods.

Overwintering food may be insufficient in some areas to sustain desired flock.

Supplement food patches with shocked corn.

Use elevated feeding platforms.

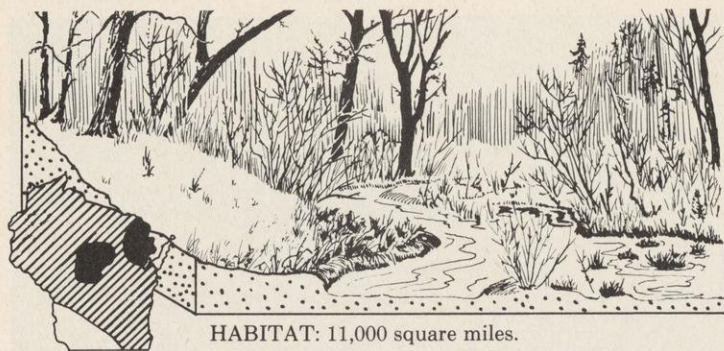
Some prairie chicken are mistakenly shot.

Educate hunters who use the properties.

Offer hunters training in bird identification.

Prairie Chicken by Artist Richard Sloan, courtesy of Nature House, Inc., Griggsville, IL 62340.

Woodcock



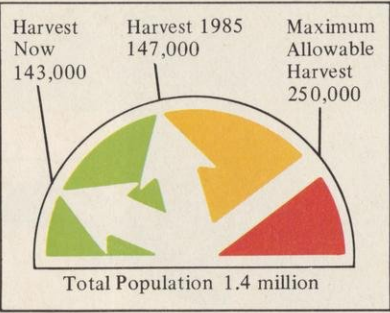
HABITAT: 11,000 square miles.

OBJECTIVES:	Now	1985
Population	Spring, 750,000 Fall, 1.45 million	Unchanged (713,000 without management changes) Fall, 1.38 million
Number of hunters	73,000	75,000
Hunter days	358,000	367,000

GOAL: Maintain the current level of locally produced woodcock.

Wisconsin has some of the most productive woodcock breeding habitat in the nation with summer densities in the far north of up to 100 birds per square mile. Our state contributes an estimated

750,000 to the flyway annually. Total flight through Wisconsin amounts to about 1.5 million. But the birds occupy a restricted ecological niche. They are confined to young forests and need scattered openings and poorly drained land. As forests mature or land is drained, this sort of habitat slowly disappears and with predictable effect on woodcock.



Woodcock, bobwhite quail and Hungarian partridge have two problems in common. They're under-harvested and they're also losing habitat. Plans are being prepared to do something about both.

Only a relative handful

of people hunt huns and quail, probably because of the birds' restricted range. Woodcock on the other hand are more plentiful and popular and the number of woodcock hunters is up to 75,000 and growing.



Woodcock by Artist Ken Carlson, courtesy of Wild Wings, Lake City, MN 55041.

Problems

Possible Answers

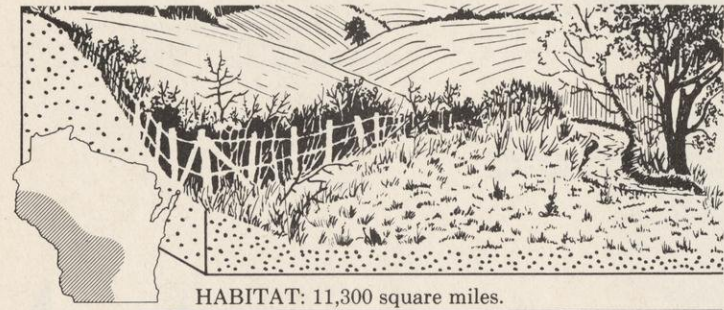
Loss of critical habitat (aspen, alder and openings) reduces management opportunities.

- Develop guidelines for most effective interspersal of critical habitat to produce optimum populations.
- Find cost effective ways to manage alder.
- Insure aspen harvest on public land.
- Incentives to local government to harvest aspen when markets are poor.
- Incentives to counties to manage woodcock on their forests.
- Maintain and manage small aspen stands on public land.
- Demonstrate ways both grouse and woodcock habitat can be improved on private land.
- Encourage new timber markets for pulpwood.
- Encourage strong zoning to restrict conflicting land use changes.

Only a portion of the birds are accessible to hunters.

- Provide information on where to go.
- Where demand is high, develop habitat to attract or hold more birds.

Bobwhite quail



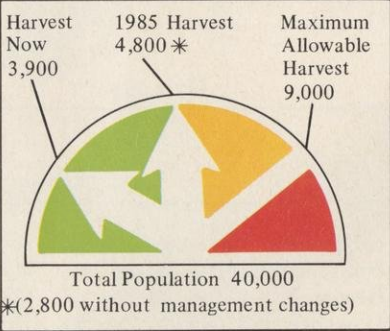
HABITAT: 11,300 square miles.

OBJECTIVES:	Now	1985
Population	35,000	40,000
Number of hunters	5,000	5,000 + (4,300 without management changes)
Hunter days	13,000	14,000 (11,000 without management changes)

GOAL: Assure the continued existence of bobwhite.

Habitat loss is a critical and immediate problem for quail. They need small farms with lots of hedgerows and some conifer plantations plus undisturbed grass cover for

nesting. In the mid-1800's, this kind of cover was everywhere and quail were abundant. But it's been downhill since. Hedgerows were plowed under, farm fields got bigger and crops less diversified. Birds were finally squeezed into the only place where brushy cover and small fields still exist — southwestern Wisconsin. Even here, the habitat is declining and new programs designed to improve it are being tried. Quail have a further disadvantage: Wisconsin is at the northern edge of the range and after



severe winters, populations drop drastically. Right now, there's a 44 day season in 16 counties with a bag limit of

two. Only about 5,000 hunters participate.

Changing agricultural practices reduce habitat.

- Provide information explaining habitat needs.
- Expand "Acres for Wildlife" program.
- Incentives to rural landowners to protect and manage quail habitat.
- Discourage federal cost sharing practices that cause undesirable land use conversions.
- Expand liaison between state and federal agencies that have land use planning responsibilities.

More technical assistance needed for landowners who wish to manage for quail.

- Expand "Acres for Wildlife" program.
- Develop a brochure on quail management.
- Assign DNR personnel to provide technical assistance.

Severe winters reduce populations.

- Winter feeding in emergencies.

Quail ecology and management aren't well understood.

- Provide more information to the public.

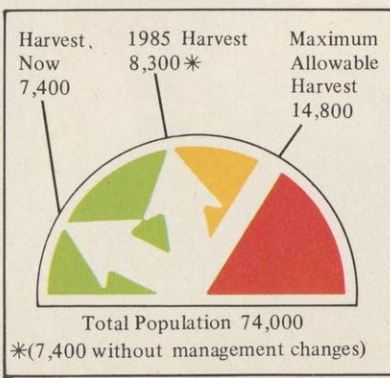
Hungarian partridge



HABITAT: 10,000 square miles.

OBJECTIVES:	Now	1985
Population	74,000	unchanged
Number of hunters	18,000	unchanged
Hunter days	36,000	41,600 (36,000 without management changes)

GOAL: Meet the demand for hunting.



Hungarian partridge attract about 18,000 hunters who bag 7,400 birds annually. Most hunting takes place in Brown, Calumet and Manitowoc Counties, where populations are best. Lesser densities of birds occur in most of southern Wisconsin.

Huns like a cool, dry climate and small, heavily cultivated farms where there are lots of fencerows, shelterbelts

and roadside cover. They have the unique capability of surviving heavy winters in open, unprotected fields. Farms are slowly growing larger and may eventually reduce populations, but for the time being, the effect is insignificant.



Hungarian Partridge by Artist Charles W. Schwartz.

Intense land use and clean farming are reducing quality of habitat.

- Identify critical spring and summer habitat.
- Landowner incentives to preserve and restore critical habitat.
- Expand "Acres for Wildlife" program.
- Legislation to regulate nonagricultural use of rural land.

More and more "no trespass" signs.

- Survey land posting trends.
- Expand "Project Respect" program.
- Education on landowner rights.

Geographic barriers inhibit range expansion.

- Stock in the Clark-Marathon County zone.

Turkey



HABITAT: 3,000 square miles

GOAL: Reestablish a self-sustaining wild turkey population.



Cautious Trio—Turkeys by Artist David A. Maass, courtesy of Wild Wings, Lake City, MN 55041.

OBJECTIVES:	Now	1985
Population	Mostly transplanted birds or their off-spring	Establish wild populations, up to 10 turkeys per square mile on management units.
Bag	0	To be determined.
Number of hunters	0	Very limited number by special permit.

Turkey were once native in parts of Wisconsin but had disappeared by 1881 when the oak forests were cut or cleared. Now, with second growth oak back, the southwest and some other areas are once again turkey country. The birds require large tracts of forest containing lots of acorn-producing oak. Because deep snow limits movement and ability to feed, to survive in severe winters turkey also need ice-free shallow water such as springs and small, spring-fed streams.

To bring the wild turkey back in southwest Wisconsin, DNR has stocked 100% wild-trapped birds. Previously, the only stock available was propagated in pens and contained enough domestic traits to turn the birds tame in crisis periods. Wisconsin's totally wild strain came from Missouri in exchange for some of our ruffed grouse.

Populations will be huntable when management units

support about 10 turkey per square mile of forest. An average of 12 per square mile is thought to be the most this habitat can handle. A spring gobbler hunt as early as 1983 may be possible. If the opportunity comes within the next four to six years, most hunting will be on private land. Few large tracts of public property exist in the release area. DNR is studying incentives to encourage landowner cooperation which will be needed both to allow hunting and also trapping of wild birds to extend the range.

Since turkeys need just the right combination of conditions, introducing them to new areas will depend on the suitability of existing habitat. Most places won't work. Diseases carried by domestic fowl or pen-reared game birds might also be a problem.

To date, the transplanted wild birds are reproducing and loss to disease and winter have not been great.

Problems Possible Answers

Landowners may be reluctant to allow removal of birds for transplanting elsewhere.

Gain community and landowner support to extend range.
Do transplanting before opening any hunting season.
Obtain additional wild-trapped turkeys through exchange with Minnesota, Arkansas, Missouri or Iowa for Wisconsin species they require.

Hunter access may be denied on private land.

Give landowners preference on hunting permits providing they admit other turkey hunters.
Mandatory turkey hunter training, emphasizing ethics and hunter-landowner relations.
Require turkey hunters to contact landowners for permission to hunt prior to season.

Disease from stocked game birds and domestic fowl is a threat.

Inform local people of precautions that can be taken.
Monitor stocking programs for other species of game birds.
Stringent enforcement of permit and game farm license requirements on rearing and stocking game birds, including turkeys.

Unauthorized stocking of turkeys could dilute wild strain.

Public education and stringent enforcement of permit requirements.

Cottontail



HABITAT: 10,000 square miles

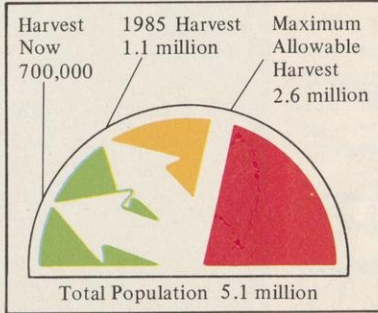
GOAL: Increase amount of rabbit hunting to take advantage of surplus population.

One of the objectives for cottontails is to increase the harvest near population centers without sacrificing the quality of the hunt.

Cottontails are one of the few species whose habitat is

projected to increase. They like our burgeoning rural development. Consequently, 5¼ million rabbits will inhabit the state by 1990.

OBJECTIVES:	Now	1985
Population	5 million	5.1 million
Number of hunters	230,000	unchanged
Hunter days	1.3 million	1.5 million (1.3 million without management changes)



Cottontail Rabbit by Artist Richard Timm, courtesy of Nature House, Inc. Griggsville, IL 62340.

Small game

Five species hunted in Wisconsin are collectively called small game: cottontail rabbit, white-tailed jackrabbit, gray squirrel, fox squirrel and snowshoe

hare. Except for the jackrabbit, all are very common. Opportunities to hunt and observe them are plentiful.

More and more land closed to hunting.

Expand "Project Respect" with emphasis near cities.
Back tags and stronger trespass laws.
Publicize landowner rights regarding trespass.
Incentives to landowners to allow hunting.



Both cottontail rabbits and squirrels are underharvested, could provide more hunting.



Gray and fox squirrels

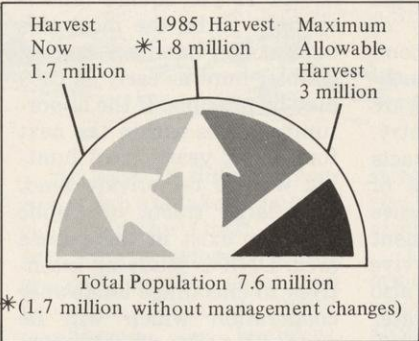


HABITAT: 10,000 square miles

OBJECTIVES:	Now	1985
Population	7.8 million	7.6 million
Number of hunters	225,000	unchanged
Hunter days	1.4 million	1.5 million (1.4 million without management changes)

Additional 1985 objective: Increase hunting by 5 to 10%.

GOAL: Increase squirrel hunting without sacrificing quality.



As a practical matter, there is little likelihood of ever reaching the maximum allowable harvest or bag. When a species is hard to find, hunting and fishing effort usually subsides long before this upper harvest level would be achieved.



Gray Squirrel by Artist Don Balke, Box 351, Nebo, NC 28761.

Because of the loss of den and nut trees as woodlots are cut, there will be 5% fewer squirrels in Wisconsin by 1990. Even so, like cottontails, they'll remain underexploited and an objective for squirrel management also is to increase the harvest near big cities.

Hunters take two kinds of squirrels in Wisconsin, gray

and fox. Grays range statewide, but fox squirrels live only in the southern third. A pair of grays can live in one acre of woods, but fox squirrels require four acres per pair. This is reflected in the harvest, which is about three grays for every fox squirrel.

Problems Possible Answers

More and more land closed to hunting.
Expand "Project Respect" with emphasis near cities.
Back tags and stronger trespass laws.
Publicize landowner rights regarding trespass.
Incentives to landowners to allow hunting.

Not as popular as some other species.
Open seasons earlier when there is no competition from other game and weather is good.
Provide more information.

Snowshoe hare

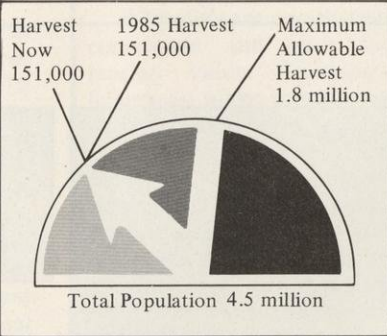


HABITAT: 9,000 square miles

GOAL: Meet the demand for hunting.

OBJECTIVES:	Now	1985
Population	4.5 million peak (cyclical about every 10 yrs.)	unchanged except for cycles
Number of hunters	57,000	unchanged
Hunter days	274,000	unchanged

As a practical matter, there is little likelihood of ever reaching the maximum allowable harvest or bag. When a species is hard to find, hunting and fishing effort usually subsides long before this upper harvest level would be achieved.



Snowshoe hares are most abundant in the forested areas of the far north. Hare populations fluctuate greatly, peaking about once every ten years. During periods of relative abundance, numbers may reach 4.5-million. Hunters take only about 150,000 per year.



Snowshoe Hare by Artist Scott Zoellick, 4405 Cherokee, Brookfield, WI 53005.

Lack of data.
Develop surveys to assess pressure, harvest, population trends.

Jackrabbit



HABITAT: widely scattered

OBJECTIVES:	Now	1985
	few hunters and little data available.	gather data
Additional objective: Assure perpetuation in traditional range.		

GOAL: Perpetuate the species and maintain hunting opportunities.

Jackrabbits are on DNR's "watch" list because not much is known about their population, harvest or how many hunters pursue them. They like open country free of human development with interspersed cropland, pasture and brushy fencerows. Six years ago, 22 were live-trapped in Minnesota and

stocked in Clark County. Subsequently, a closed season was established there and in nearby counties to help them take hold. That population is still being monitored. Biggest chore for the future will be to get more data about jackrabbits.



Jackrabbit by Artist Charles W. Schwartz.

Inadequate information.
Surveys plus research to discover factors limiting abundance in Wisconsin.

Muskrat

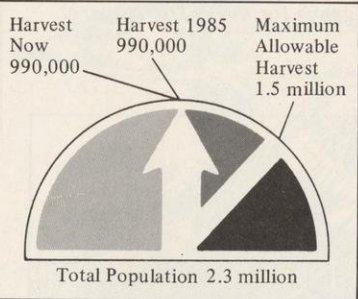


HABITAT: 2,500 square miles

OBJECTIVES:	Now	1985
Population	2.3 million	unchanged
Number of trappers & trapper days	no data	no data

GOAL: Meet the demand for trapping.

Economically, muskrats are one of Wisconsin's most important furbearers. The harvest in 1978 was worth an estimated \$4¼-million. Trapping effort is heavier than for other species. Shallow marshes with emergent vegetation and open water are ideal habitat. Management tries to attain this, often in conjunction with efforts aimed at waterfowl. Muskrat can damage earthen dams and dikes and cranberry bogs. Direct control is usually required to correct it.



- Problems**
Possible Answers
- More data needed.**
Survey habitat in each district.
Survey pressure, harvest, population trends.

Muskrat by Artist Richard Timm, courtesy of Nature House, Inc., Griggsville, IL 62340.

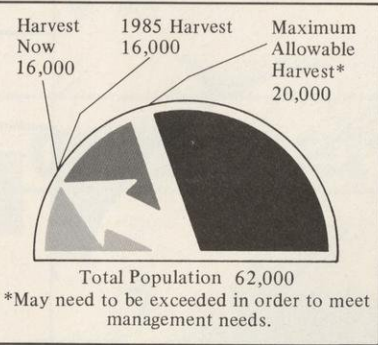
Beaver



HABITAT: 3,800 square miles

OBJECTIVES:	Now	1985
Population	63,000	62,000 (without additional control)
Number of trappers & trapper days	no data	no data

GOALS: Balance demand to be consistent with supply in various parts of the state. Protect trout and timber interests. Reduce damage complaints.



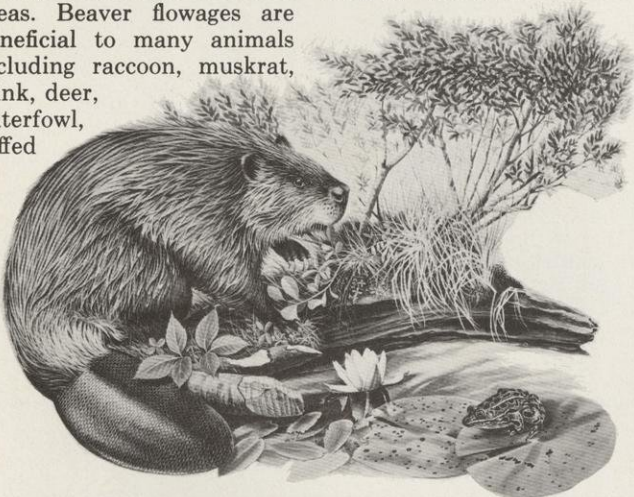
Additional 1985 objectives: Boost harvest in problem areas. Lower harvest in the South and West Central Districts, increase in the north.

Wisconsin's beaver population decreased to less than 500 at the turn of the century because of excessive trapping and habitat changes. However, as aspen replaced the burned and cutover forests, beaver recovered. The population is now about 60,000, mostly in the north. This has resulted in some harvest imbalance because heaviest demand is in the south and west central parts of the state. Proper management should correct this.

Beaver now cause numerous damage and nuisance complaints. When they dam a culvert or a trout stream,

roads and property flood or water gets too warm for trout. Reversing this damage sometimes requires DNR trappers and special seasons in critical areas. Beaver flowages are beneficial to many animals including raccoon, muskrat, mink, deer, waterfowl, ruffed

grouse, and bear. Beaver control in problem areas will require special management to make sure other resources aren't jeopardized.



- Conflict on Class I trout water and lowland coniferous forest.**
Liberalize seasons in problem areas.
Develop additional methods of control.
- Populations too high in many places. Beaver considered pests.**
Liberalize seasons in problem areas.
Trapper training program to encourage more trapping, increase efficiency.
Encourage pelt use in fur industry.
Education to accept higher populations.
Expand DNR nuisance control program where necessary.
- More data needed.**
Surveys on pressure, population trends.
- Inadequate harvest in North Central, Lake Michigan and Northwest Districts leads to nuisance and damage complaints.**
More liberal seasons.
Subsidize trappers in problem areas.

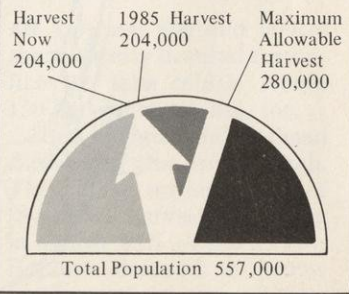
Beaver by Artist Richard Timm, courtesy of Nature House, Inc., Griggsville, IL 62340.

Raccoon



GOAL: Meet the projected demand for hunting and trapping.

OBJECTIVES:	Now	1985
Population	557,000	unchanged
Number of trappers & hunters, hunter days, trapper days	no data	no data



Raccoon like beaver are another species that have come back spectacularly from previous lows. Between 1932 and 1955, they were raised at the State Game Farm and stocked. Last year, the harvest was more than 200,000, principally because of high fur prices. The annual harvest is now worth more than any other Wisconsin furbearer — an estimated \$7 million last year. This rising value is being monitored because it can affect harvest levels. It has

already caused some problems such as hunter trespass. Prior to 1980 another problem existed — harvest of pelts not fully prime. This will be partially corrected this fall by a delay in the start of the season. Raccoon are predators on duck and upland game bird nests. Management tries to strike a balance that lets both exist at desired levels.

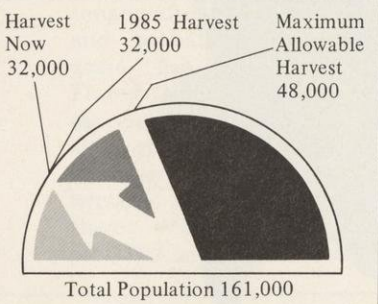
- More data needed to better manage.**
Survey hunting and trapping pressure, harvest and population trends.
- High pelt prices could depress populations.**
Reduce season length or delay opening.

Mink



HABITAT: 4,500 square miles

OBJECTIVES:		
	Now	1985
Population	161,000	unchanged
Trappers and trapper days	no data	no data



GOAL: Meet the demand for trapping.

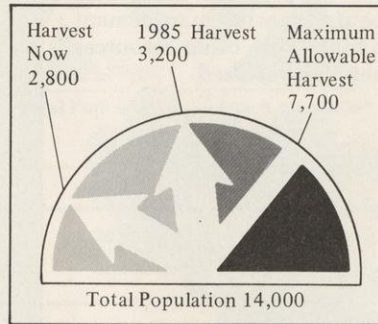
Mink are carnivorous and eat mostly muskrats and other rodents. Abundance is dependent on stable water levels that support good populations of their prey. Mink benefit from management for waterfowl and muskrats. Of all aquatic furbearers, mink are most vulnerable to excessive trapping pressure. Recently, though, there have been few problems because of low pelt prices. Managers will keep an eye out and adjust rules as needed.

Coyote



HABITAT: 21,000 square miles

OBJECTIVES:		
	Now	1985
Population	14,000	14,000
Trappers and trapper days	no data	no data

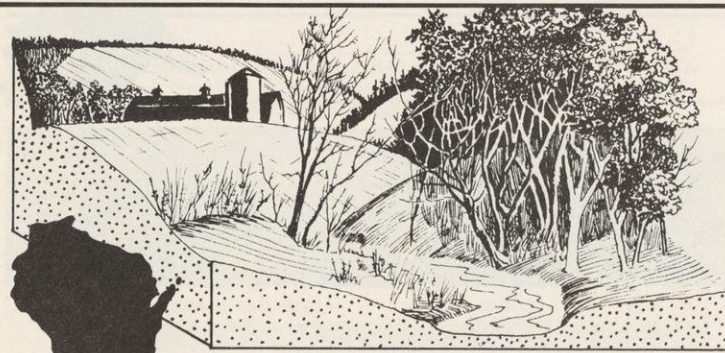


GOAL: Meet the demand for hunting and trapping.

Coyote range consists of everything from farm fields to large expanses of wilderness. The coyote's diet is varied, including snowshoe hare, rodents, and lots of carrion. Pelts are currently in demand, and coyote are taken by both trapping and hunting.

Coyote are presently unprotected and can remain so until population trends suggest more regulation is needed.

Fox



HABITAT: 46,000 square miles

OBJECTIVES:		
	Now	1985
Population	red 44,500 gray 4,500	unchanged (34,400 without management changes) unchanged
Bag	red 21,700 gray 2,000	21,500 (19,600 without management changes) 2,000
No data on how many people hunt or trap fox.		

GOAL: Slow the projected decline in red fox and balance the harvest of both red and gray fox with the resource capability.

The price of fox pelts in Wisconsin has increased more than sevenfold since 1968, while the number purchased by fur buyers has dropped. This probably indicates over-exploitation and regulations have been tightened to stem a decline in population. Because fox are predators and take some game as well as other species, a few people object to their protection. However, the recreational and economic value of fox more than offsets their impact

on other wildlife species.

Wisconsin has two kinds, red and gray, both secretive and highly intelligent. Red fox are the more numerous and widely distributed and adapt to a variety of habitats, including urban areas, although farm fields are preferred. Grays are found in the rough, wooded, hilly terrain in the south, especially the coulee region.

If high fur prices, which cause a high harvest, persist population levels could be



Coyote by Artist Richard Timm, courtesy of Nature House, Inc., Griggsville, IL 62340.



Fox by Artist Richard Timm, courtesy of Nature House, Inc., Griggsville, IL 62340.

further reduced. By 1985, demand for red fox trapping and hunting will jump ahead of supply. It will be necessary

to reduce the harvest rate in order to maintain a population that will support a stable harvest.

Problems

Possible Answers: Same as muskrat. (see p. 33)

More data needed about hunting, trapping and populations.

Surveys to assess pressure, harvest and numbers of coyotes.

Fur price decline could reduce demand.

Public education to encourage sport hunting.

Harvest rates for reds may be at such a level that further pressure will mean a greater rate of decline.

Update harvest and population information as more accurate data become available.

Use more restrictive regulations if needed.

High pelt prices may increase demand and harvest.

Adjust regulations in response to price fluctuations.

Optimum populations may draw fire from those who feel fox are depressing small game populations.

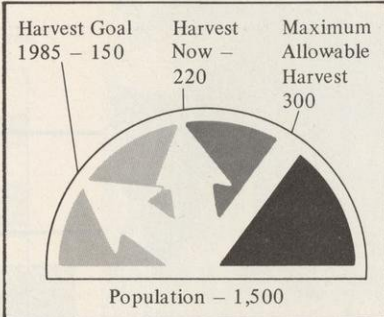
Education and information.

Bobcat



HABITAT: 16,000 square miles (mostly north).

OBJECTIVES:	Now	1985
Population	1,500	unchanged
Bag	220	150
Number of hunters & trappers	300	unchanged
Hunter & trapper days	8,700	7,800



GOAL: Maintain population and distribution at the mid-1970's level.

Dense cover offered by conifer swamps and alder thickets provide the prey, shelter and solitude needed by bobcat. They live mostly in the northern quarter of Wisconsin, are seldom found elsewhere. Snowshoe hare are their principal prey. Although not large, the bobcat popula-

tion (about 1,500) is sufficient to support the present limited hunting and trapping. Annual take is about 220. Surveys show that about half of those trapped are taken incidentally by coyote or fox trappers.

If fur prices rise, bobcat might need further protection. Management history of the species shows progressive tightening of regulations has been necessary to keep populations at safe levels. Until 1970, they were unprotected. A 5½-month season, instituted then, has since been reduced to three months and registration is now required. Fur prices and harvest will determine whether additional protection is needed.



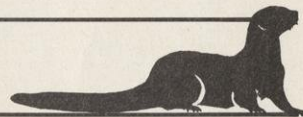
Problems
Possible Answers

More data needed for effective management.
Survey population trends, hunting and trapping pressure.
Research mortality rate and harvest potential.

Bobcat by Artist Richard Timm, courtesy of Nature House, Inc., Griggsville, IL 62340.

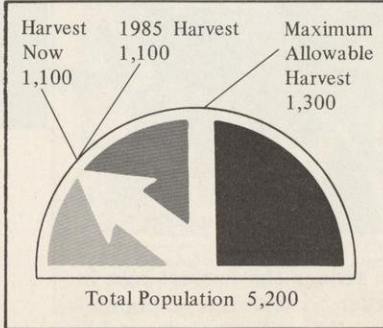


Otter



HABITAT: 3,800 square miles.

OBJECTIVES:	Now	1985
Population	5,200	unchanged (may increase as water pollution is brought under control)
Bag	1,100	unchanged



GOAL: Meet the demand for trapping opportunities and extend the range where possible.

Because otter are territorial and require large roaming areas, they are never common. Otter are found wherever undisturbed shoreline is available. They feed on fish, frogs, turtles, crayfish and insects. Shoreline development inevitably means fewer otter, but cleaning up polluted rivers and streams

might offset this some.

Otter have high aesthetic value. Chance upon one swimming or playing and it leaves a lasting impression.

Their population has remained stable. Adult males defend boundaries. Since only so much habitat exists, as soon as one otter is trapped, another, on the "waiting list" for a territory, replaces it. Reasonable harvest has little effect. The worry is that a rise in fur prices or an increase in beaver trapping (many otter are taken in traps set for beaver) could lead to overharvest. Otter fur is of fine quality, pelt prices are high and trapping, therefore, is attractive. These dynamics will be carefully monitored to make sure the harvest remains reasonable.



Misunderstanding of otter population dynamics could restrict harvests below desired levels.

Education to explain that population levels are limited by otter behavior and quality of habitat, not harvest.

Lake and stream shore development could reduce habitat.

Preserve a portion of all lakes that have otter habitat. Determine compatibility of various levels of development with otter populations.

Pollution of some streams limits distribution of otter.

Strict enforcement of the Clean Water Act.

Regulations designed to eliminate beaver where they cause damage could result in overharvest of otter.

Close monitoring of beaver seasons to assess impact on otter.

Otter by Artist Richard Timm, courtesy of Nature House, Inc., Griggsville, IL 62340.

Endangered and threatened species

GOALS: Improve the status of endangered and threatened species to the point where they may be taken off the Endangered Species List. Manage nongame species to ensure the diversity necessary to maintain a healthy ecosystem for the well-being of the people of Wisconsin.

1985 objectives: Develop and implement recovery plans for 15 fish and wildlife species now endangered or threatened. Determine the distribution, population and critical habitat for 30 nongame species. Keep track of Endangered and Threatened Species and keep the list up to date. Inform the public about these species and their role in the ecological system.

Endangered species are those whose continued existence is in jeopardy. No matter how insignificant, they strengthen the web of life, the ecosystem we all depend on. They're also important for what they represent. They signal us to slow down, take note, before we end up lonely inhabitants of a barren world.

To be classified endangered, a species must be native to Wisconsin. Its past and present populations must be known. Its numbers must be declining and the existence

of those remaining be jeopardized.

A threatened species is one that appears likely to become endangered in the near future. There is also an informal category called the Watch List. These creatures have suspected, not proven, problems. The idea is to focus attention on them before they become endangered or threatened. The common loon is an example.

A few extinct Wisconsin species were overhunted but most were destroyed by



Timber Wolves by Artist Tim Johnson, 107 E. Monico St., Rhinelander, WI 54501.

Endangered

MAMMALS:

Pine Marten	Once extinct in Wisconsin, now reintroduced.
Canada Lynx	Found only erratically and uncommonly in several northern counties.
Timber Wolf	Returning to the state after a 20-year absence.

BIRDS:

Double-crested Cormorant	Only eight active nesting colonies remain.
Bald Eagle	In 1979, 150 pairs produced 180 young.
Osprey	In 1979, 143 pairs produced 185 young.
Peregrine Falcon	No breeding pairs remain. Some migrants sighted each year.
Piping Plover	Only four nesting sites known. Only one successful nest in 1978 and 1979.
Forster's Tern	Reduced to 12 colonies in southern Wisconsin.
Common Tern	Five colonies left, three on Lake Superior and two on Green Bay.
Barn Owl	No nests reported in 1978 and 1979.

REPTILES:

Wood Turtle	Statewide range disrupted, found at very low density.
Ornate Box Turtle	Decreasing due to habitat loss.
Queen Snake	Very uncommon, threatened by further habitat loss.
Western Ribbon Snake	One of Wisconsin's rarest snakes, only one record since 1971.
Northern Ribbon Snake	Found in only two places since 1971.
Massasauga	Recent records from only six counties.

FISHES:

Gravel Chub	Considered extinct until 1970. A few specimens found near Illinois border.
Striped Shiner	Now found only in Milwaukee River Basin along Lake Michigan.
Slender Madtom	Rare in Wisconsin streams, found in Rock and Pecatonica Rivers.
Starhead Topminnow	Very limited records confined to southern and western Wisconsin.
Crystal Darter	Found in limited numbers in large rivers.
Gilt Darter	Never common, found in northwest and west central Wisconsin.
Bluntnose Darter	Records from only five stations on the Mississippi River.

MOLLUSKS:

Higgin's Eye Pearly Mussel	Populations so low they are not reproducing well.
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Threatened

BIRDS:

Great American Egret
Prairie Chicken
Cooper's Hawk
Red-shouldered Hawk
Loggerhead Shrike

REPTILES:

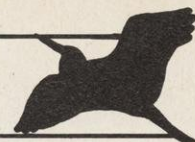
Slender Glass Lizard
Blanding's Turtle

AMPHIBIANS:

Spotted Salamander
Tremblay's Salamander
Burn's Leopard Frog
Pickering Frog

FISHES:

Goldeye
Speckled Chub
Pallid Shiner
Blue Sucker
Black Buffalo
River Redhorse
Longear Sunfish
Mud Darter
Ozark Minnow
Pugnose Shiner



habitat loss. When the virgin forests were cut, the wetlands drained, the prairies plowed, the creatures that inhabited those places moved on or disappeared. Some — eagles, osprey, peregrine falcons — dwindled when their bodies concentrated high levels of man-made contaminants.

The extinction of species still continues, the list still grows. Studies uncover more and more animals and plants in trouble as new threats enter our environment. The reasons why many species are endangered and what can be done to help them are becoming clear. Many DNR projects are in the works and some have begun to pay off. But the work is far from over.

Much is not yet understood. We still don't know some of the basic facts on life history, habitat and distribution of many species. Efforts in the future will concentrate on finding out.

In 1972 Wisconsin's first Endangered Species Law was

enacted. It ordered DNR to draw up an Endangered Species List of animals and to provide safeguards. In 1978 protection was extended to endangered plants and the listing of threatened as well as endangered species was ordered. Lesser-known animals and plants are now being studied. As populations improve or decline, the list will change.

DNR has an Office of Endangered and Nongame Species. It coordinates the work of fish and wildlife managers, wardens, environmental impact personnel and research biologists in dealing with these species. Public education is also an important part of its work. The problem is as complex as the society we live in, rooted in our actions and values.

Saving endangered species will require an effort by all of us. Money is an important part of the need. To date, federal funds have helped, but they are limited and more

Problems

Possible Answers

Inadequate information limits management.

Use independent scientists and DNR personnel to research life histories, distribution, habitat and populations dynamics.

Devise a way for citizens to report sightings.

Survey nongame on state lands, then monitor periodically.

Public doesn't know much about the value of nongame.

Use all available media to increase knowledge and appreciation.

Help schools teach about nongame wildlife.

Increased competition with other states for federal funding.

Develop new funding sources. Seek larger state allocations, as well as private gifts and grants for special projects.

Deteriorating habitat and over-collecting threaten certain reptiles.

Develop rules on collecting and other uses of reptiles.

Help the Scientific Areas Preservation Council protect natural ecosystems or biotic communities and the creatures that inhabit them.

states are now competing with Wisconsin for what's available. DNR has a separate budget for endangered species, but it's a small one. New funding from state and private sources is needed.

Majesty on the Wing—Bald Eagle by Robert Bateman, courtesy of Mill Pond Press, Inc., 208 S. Nassau St., Venice, FL 33595.



Nongame species



Nongame. The word is short, but it takes in most of the fish and wildlife in Wisconsin. It includes songbirds, snakes, crickets, mice and minnows — any animal not harvested for commercial use or sport.

Nongame species are important members of the ecosystem, but until now, they've received little formal attention. Reason is that most tend to be abundant, face no threat of overharvest and, until recently, few people were interested. However, the new ecological awareness has changed that. Responding to public interest, the State Legislature authorized nongame

management and provided seed money to start it. The Office of Endangered and Nongame Species oversees the work.

Many nongame species have been managed indirectly for a long time. A flowage built for ducks also benefits shorebirds and frogs. A marsh purchased for northern pike spawning has plenty of room for nongame fish and wildlife. Anything done to help endangered species benefits other nongame, too.

New projects include everything from telling people how to plant backyards for songbirds to determining where Wisconsin's black-

crowned night herons are and how they're doing, from counting bluebird nests to surveying leopard frogs. We don't know the populations or geographical distribution of hundreds of nongame species. Some might be in trouble and we'd never know it.

Money limits how much nongame work can be done. Funding is small. Traditionally, the bill for management has been paid by hunting and fishing license fees. This makes it hard to justify management for nongame alone. Fish, wildlife, forest and park lands already contribute much by giving these species a home. It's unlikely that

strained license revenues can contribute much more. New funding sources will be needed. State tax money, private and federal grants and special revenues are possibilities.

Any new funding will depend on legislative approval. An interesting approach used in Oregon and Colorado is an income tax check-off. People who have a state income tax refund coming can designate part of their refund for a special account earmarked for nongame wildlife. In Wisconsin, similar funding has been proposed.



Redtail and Redwings by Artist Diane Pierce; Edge of the Wild, King Memorial, Mentor, OH 44060.

LET US HAVE IT

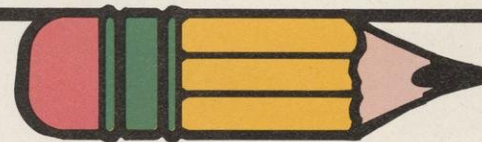
Comprehensive Planning is an organized way to make something happen in the future.

For fish and wildlife it is based on a staggering array of information about various species. But for a government agency like DNR, the essential ingredient comes from the public. Do you share the goals envisioned by DNR planners and managers for deer, ducks, muskies, muskrats, bass and 49 or so other species and groups they deal with? If so, do you like the way the planners propose to achieve these goals? If not, why? What are your ideas? The

purpose of this special supplement is to find out.

After you've read it, answer the questionnaire on the cover and return to DNR no later than July 1. Every answer will receive consideration. Where you approve DNR can proceed with confidence. Where you differ, the plan is flexible and particularly designed to be revised and updated. Your ideas can change it.

Return the questionnaire! It's the best chance you'll ever have to help direct fish and wildlife management in Wisconsin. Don't forget the deadline: July 1.



Return
your questionnaire
by July 1