# Minnesota's Fisheries Budget Dilemma

# Information Portfolio

The Dilemma
Rising costs,
Flat revenue

## Answers to questions about:

- Minnesota's fisheries budget dilemma
- What DNR Fisheries does and how it helps Minnesota fishing and aquatic ecosystems
- Other aspects of Minnesota's world-famous fisheries

**Minnesota Department of Natural Resources**
For more information, call 1-800-766-6000 or (612) 296-3325.

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**FISHERIES MANAGEMENT**



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**FINANCIAL INFORMATION**



**ORGANIZATION**



## Minnesota's Fisheries Budget Dilemma
# FISHING PORTFOLIO

The information in this folder is provided to answer questions about Minnesota's fisheries budget dilemma and other matters related to DNR Fisheries, its budget, and associated programs.

Our intent is to give anglers, resort owners, lake associations, and fishing-related businesses the information necessary for deciding how to solve the dilemma facing the state's fisheries. Anyone who wants more information can call my office in St. Paul at (612) 296-3325.

Yours in working for better fishing and healthier lake and stream environments,

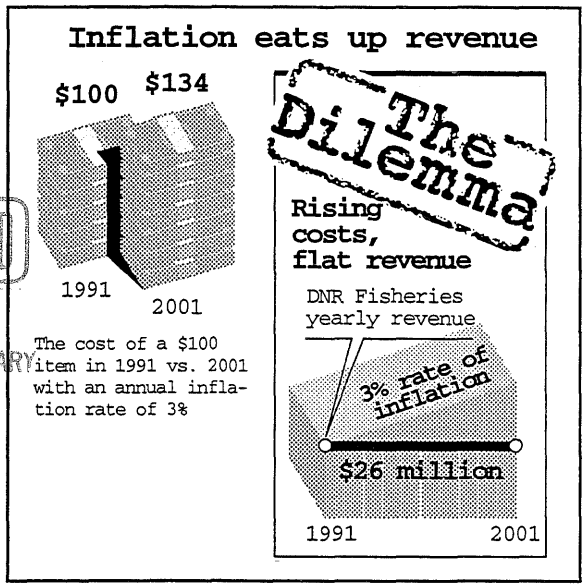
Jack Skrypek

*Jack Skrypek*
Chief, DNR Fisheries

Right pocket materials

# Minnesota's fisheries dilemma






Anglers will face a tough choice in the spring of 1997—one that could determine the future of fishing quality throughout Minnesota. The choice:

- support a fishing license fee increase, or
- accept further reductions in fisheries management throughout Minnesota.

## Why the dilemma?

It's been eight years since the DNR last significantly increased fishing license fees. That was in 1988, when the price went from $9 to $12. In 1991 the cost went up another dollar to where it is today: $13.

Primarily because of inflation, which has averaged about 3% per year, the $13 the DNR gets from each angler buys less and less. Since 1991, the cost of equipment has gone up. So has the price of gasoline for boats, of electricity to run hatchery aerators, and of rent for area offices. If adjusted for inflation, a $13 fishing license bought in 1991 has a purchasing power today of only $11.43.

While real revenues have been shrinking, the demands on Minnesota's fisheries have continued to grow. For example, growing lakeshore development threatens water quality and fish spawning habitat.

As a result, the DNR Fisheries Section is being asked to do more and more with less and less money.

## What has been cut already?

Over the past four years, increasing costs have forced the Section to make drastic reductions. A total of 22 positions have been eliminated since 1993. As a result, 50,000 fewer hours are spent each year managing the state's fisheries and aquatic resources. In addition, three hatcheries have been closed, fishing map and brochure printing has been cut by 75%, and major research projects have been shelved.

Most anglers haven't seen the effects of these cuts—at least not yet. But the reductions DNR Fisheries has been forced to make will definitely chip away at the high quality of fishing in Minnesota and the more than $900 million spent each year on fishing-related recreation.

## Also at risk

Without a fee increase, the Fisheries Section's budget would remain perilously close to the red. And if the budget goes into a deficit, Fisheries would have to cut trout, northern pike, muskie, and catfish stocking, as well as close some local fisheries offices and a hatchery.

Without a fee increase, DNR Fisheries will also lack funds required by local fisheries offices for much-needed projects. Activities such as lake aeration systems, lake reclamations, and habitat improvements throughout Minnesota would not get off the ground.

## The bottom line

Minnesota can't retain the current high quality of fishing recreation and aquatic resource protection without a $3 fishing license fee increase. Costs are rising while revenue

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remains flat. Anglers must decide whether to pay a bit more to maintain quality fishing or to accept further reductions in the state's fisheries management program.

# The fee increase

How much of an increase is needed? And how would DNR Fisheries use the additional revenue from a fishing license fee increase?

A reasonable increase that would keep Minnesota fisheries management financially sound for six years (based on current inflation estimates) would be $3, increasing the cost of a fishing license from $13 to $16. Any amount less than that would require another increase in three or four years.

### Where would the money go?

The highest priority would be to provide more money to field stations so they can use it for important local projects. Examples of projects are lake aeration systems, lake reclamations, and habitat improvements. Many of these would be cooperative projects with local communities and sports groups. And many of the projects would leverage additional funding from public and private sources.

Fisheries would also hire a heavy-equipment operator so that field staff could complete small projects effectively and on time.

The next priority would be to provide staff who work with citizen and local governments on comprehensive lake and watershed management efforts. This would allow DNR Fisheries to work more closely with individuals, citizens groups, businesses, sports groups, and other government entities working within a watershed to make lake and stream ecosystems cleaner and healthier.

Money from the fee increase would also provide more funding for the MinnAqua aquatic education program, as has been requested by the Minnesota Fishing Roundtable participants, the Minnesota Sportfishing Congress, and others.

Another top priority would be to hire a watershed coordinator for the Twin Cities Region and one for the Northwest Region—or to leverage funds for several coordinators in each region. In the Metro Region, a watershed coordinator would work with citizens and local governments to protect water quality and fish habitat in Lake Minnetonka, Lake Phalen, the Mississippi River, trout streams, and other valuable urban fisheries.

In the Northwest, the coordinator would work primarily on the expansive watershed of the Red River of the North.

**The highest priority would be to provide money to field stations for local projects.**

### How about statewide needs?

The DNR Fisheries Section's top priority would be to expand computer systems so that local field workers would have access to essential information stored in a central database and could communicate and exchange information with other local offices, other agencies, and citizens.

This would also make it easier to put lake survey information on the Internet, where it would be easily accessible to anglers.

# What if...?

Minnesota's fisheries management program wouldn't collapse without a $3 license fee increase. But there would be consequences—ones that would erode the quality of fishing for anglers and their children.

The lack of a modest license fee increase would worsen three fundamental problems facing Minnesota's fisheries program:

**◆ 50,000 hours lost each year**

Over the past four years, the combination of rising costs and flat revenue has forced DNR Fisheries to cut fisheries positions and programs. Included in these reductions are:

- eliminating of 22 full-time fisheries management positions (resulting in 50,000 fewer hours spent each year managing the state's fisheries),
- closing three hatcheries,
- reducing brochure and map printing 75%,
- eliminating five research projects,
- reducing lake and stream surveys,
- reducing environmental and aquatic plant management permit reviews.

Without a fee increase, DNR Fisheries could not make up the 50,000 hours of fisheries management no longer being done. In fact, it would have to make additional reductions, further weakening its ability to protect and improve Minnesota's fishing waters.

**◆ Budget remains at the edge**

No fee increase would also keep the Fisheries Section's budget perilously close to the red. And if the budget does go into a deficit, Fisheries might have to cut trout, northern pike, muskie, and catfish stocking, as well as close some local fisheries offices and a hatchery.

Fisheries funding comes from the state Game and Fish Fund, which is mostly made up of hunting and fishing license fees and federal grants. Every two years, money from the fund is appropriated by the state legislature to DNR Fisheries to run its management program.

By law, the Game and Fish Fund cannot operate in the red. But because of rising costs primarily due to inflation, the DNR Division of Fish and Wildlife must operate dangerously close to this line, with no safety net.

Unforeseen factors such as fluctuating federal revenue or a decrease in license sales from bad weather can cause a budget deficit. To prevent this, Fisheries must cut positions or programs. For example, when the cold summer of 1993 decreased fishing license sales and federal revenue unexpectedly dropped, DNR Fisheries had to eliminate 9 management positions.

Without a fee increase, Fisheries will remain financially vulnerable and thus unable to adequately manage the state's fisheries. As one member of the Minnesota Sportfishing Congress put it, "It just doesn't make sense for Fisheries to keep operating on the edge."

**This results in 50,000 fewer hours spent each year managing the state's fisheries.**

**◆ Loss of local projects**

Without a fee increase, DNR Fisheries will lack funds required by local fisheries offices for projects such as lake aeration systems, lake reclamations, and habitat improvements throughout Minnesota.

Many of these would be cooperative projects with local communities and fishing groups. And many of the projects would leverage additional funding from public and private sources for fisheries management.

# Threat to tourism

Each year anglers spend more than $900 million on fishing-related recreation in Minnesota. That's according to the U.S. Fish and Wildlife Service and the U.S. Bureau of Census, which conduct comprehensive surveys of fishing in all states every five years.

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## What expenditures?

The big money spent on fishing goes to boats, travel expenses, and fishing equipment. But little items add up, too. For example, anglers spend $4.7 million each year just on ice. Some other expenditures

- bait: $34 million,
- boats and canoes: $117 million,
- rods and reels: $25 million.

Fishing is the foundation of Minnesota's tourism industry. Each summer, hundreds of thousands of anglers from throughout the U.S. are lured to Minnesota by the state's reputation for clean water, wild surroundings, and superb fishing. Resort owners—from mom-and-pop operations to luxury resorts such as Izaty's and Cragun's—rely in part on the state's high quality of fishing for their livelihood.

Perhaps most important of all, fishing is an activity enjoyed by families—whether they live in downtown Minneapolis, the suburbs of St. Cloud, or rural Clearwater County. Fishing provides quiet time for talking, and thus can bring kids and adults closer together.

# DNR Fisheries

Keeping a close watch over these valuable fishing resources is the DNR Fisheries Section. This team of statewide biologists acts as a steward for the state's lakes and streams. The Section's goal is to allow as much fishing recreation as the resources can provide while protecting these resources for future generations.

DNR Fisheries is made up as follows:

- **317 employees**
- **6 regional offices**
- **28 local offices**
- **17 hatcheries** (trout, salmon, walleyes, muskies, and northern pike)
- **Annual budget: $16.7 million**

DNR Fisheries oversees the state's 5,400 fishing lakes and 15,000 miles of fishable streams and rivers (including 2,600 miles of trout streams).

When anglers buy their $13 fishing license, they are paying to ensure that these waters continue to provide the type of diverse, high-quality fishing that has earned Minnesota an international reputation. To provide fishing recreation to more than 2 million anglers and protect the state's precious aquatic natural resources, DNR Fisheries each year carries out activities that include:

Want more information about Minnesota's fisheries budget dilemma or the DNR Fisheries Section? Call (612) 296-3325.

- **600 lake surveys**
- **125 stream surveys**
- **30 creel surveys**
- **450 management plans**
- **100 lakes surveyed for contaminants**
- **38,000 lake survey printouts**
- **Lakes stocked with:**
  - **walleyes (475*)**
  - **northern pike (65*)**
  - **muskies (40*)**
  - **trout (160*)**
- **Streams stocked with trout (90*)**
- **1 to 5 new lakes aerated**
- **12 miles of stream habitat improved**
- **22,000 participants in aquatic education programs.**

* These figures are the number stocked in a given year. The total number of individual waters stocked over a period of years:
walleyes: 979
northern pike: 126
muskies: 43
trout lakes: 185
trout streams: 125

# Minnesota's fisheries dilemma


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While real revenues have been shrinking, the demands on Minnesota's fisheries have continued to grow. Exotic species continue to spread, putting native ecosystems at risk. Growing lakeshore development threatens water quality and fish spawning habitat. Leaps in fishing technology make anglers ever more effective in finding and catching fish.

As a result, the DNR Fisheries Section is being asked to do more and more with less and less money.

## What has been cut already?

Over the past four years, increasing costs have forced the Section to make drastic reductions. A total of 22 positions have been eliminated since 1993. As a result, 50,000 fewer hours are spent each year managing the state's fisheries and aquatic resources. In addition, three hatcheries have been closed, fishing map and brochure printing has been cut by 75%, and major research projects have been shelved.

Most anglers haven't seen the effects of these cuts—at least not yet. But the reductions DNR Fisheries has been forced to make will definitely chip away at the high quality of fishing in Minnesota and the more than $900 million spent each year on fishing-related recreation.

## Also at risk

**Most anglers haven't seen the effects of these cuts—at least not yet.**

Without a fee increase, the Fisheries Section's budget would remain perilously close to the red. And if the budget goes into a deficit, Fisheries might have to cut trout, northern pike, muskie, and catfish stocking, as well as close some local fisheries offices and another hatchery.

Without a fee increase, DNR Fisheries will also lack funds required by local fisheries offices for much-needed projects such as lake aeration systems, lake reclamations, and habitat improvements.

## The bottom line

Minnesota can't retain the current high quality of fishing recreation and aquatic resource protection without a $3 fishing license fee increase. Costs are rising while revenue remains flat. Anglers must decide whether to pay a bit more to maintain quality fishing or to accept further reductions in the state's fisheries management program.

# What if license fees don't increase?


Minnesota's fisheries management program wouldn't collapse without a $3 license fee increase. But there would be consequences—ones that would erode the quality of fishing for anglers and their children.

The lack of a modest license fee increase would worsen three fundamental problems facing Minnesota's fisheries program:

### ◆ 50,000 hours lost each year

Over the past four years, the combination of rising costs and flat revenue has forced DNR Fisheries to cut positions and many programs. Included in these reductions are:

- eliminating 22 full-time fisheries management positions (resulting in 50,000 fewer hours spent each year managing the state's fisheries),
- closing three hatcheries,
- reducing brochure and map printing 75%,
- eliminating five research projects,
- reducing lake and stream surveys,
- reducing environmental and aquatic plant management permit reviews.

Without a fee increase, the DNR Fisheries Section could not make up the 50,000 hours of fisheries management no longer being done. In fact, it would have to make additional reductions, further weakening its ability to protect and improve Minnesota's fishing waters.

### ◆ Budget remains at the edge

No fee increase would also keep the Fisheries Section's budget perilously close to the red. And if the budget does go into a deficit, Fisheries would have to cut trout, northern pike, muskie, and catfish stocking, as well as close some local fisheries offices and another fish hatchery.

Fisheries funding comes from the state Game and Fish Fund, which is mostly made up of hunting and fishing license fees and federal grants. Every two years, money from the fund is appropriated by the state legislature to DNR Fisheries to run its management program.

By law, the Game and Fish Fund cannot operate in the red. But because of rising costs primarily due to inflation, the DNR Division of Fish and Wildlife has been forced to operate dangerously close to this line with no safety net.

Unforeseen factors such as fluctuating federal revenue or a decrease in license sales from bad weather can threaten a budget deficit. When this happens, Fisheries must cut positions or programs. For example, when the cold summer of 1993 decreased fishing license sales and federal revenue unexpectedly dropped, DNR Fisheries had to eliminate 9 management positions.

See back for a list of cuts already made

Without a fee increase, Fisheries will remain financially vulnerable and thus unable to adequately manage the state's fisheries. As one member of the Minnesota Sportfishing Congress put it, "It just doesn't make sense for Fisheries to keep operating on the edge."

### ◆ Loss of local projects

Without a fee increase, DNR Fisheries will lack funds required by local fisheries offices for projects such as lake aeration systems, lake reclamations, and habitat improvements. Many of these would be cooperative projects in partnership with local communities and fishing groups. And many of the projects would leverage additional funding from public and private sources for fisheries management.

# Recent cuts and reductions

Over the past several years, DNR Fisheries has made deep cuts into its programs to forestall having to ask for a fee increase. In addition, the legislature has helped by rescinding the senior's fishing license rebate and transferring costs previously taken from the Game and Fish Fund to the state General Fund.

Still, this has not been enough to keep the Fisheries Section from reducing programs and staff. And while the Section has tried to cut only the lowest-priority positions and programs, the sheer volume of cuts necessary has meant a reduction in its ability to provide fishing recreation opportunities and to protect Minnesota's aquatic environments.

The cuts so far:

**Eliminated 22 full-time fisheries management positions:** Laying off workers and leaving vacancies from transfers or retirements unfilled has meant that 50,000 fewer hours are spent each year managing the state's fisheries and aquatic resources.

**Closed the St. Paul, Hinckley, and Devil's Track hatcheries:** While most of the fish production was shifted to other hatcheries, these closures reduced DNR Fisheries's ability to raise certain fish species and strains.

**Reduced printing fishing brochures and maps by 75%:** Maps of North Shore streams and southeastern trout rivers are now in short supply, as are basic brochures of DNR Fisheries programs. "We can't even send brochures to schools asking about fisheries management," says Jack Skrypek, Fisheries chief.

**Eliminated five research projects:** Staff reductions have meant fewer workers to do research on increasing bluegill size, brook trout habitat needs, lake trout populations, and other puzzles of Minnesota's fisheries management.

**Ended contract and cooperative projects with the University of Minnesota and other academic institutions:** This has meant losing their expertise and essential theoretical research into fish genetics and other important topics.

**Put a lake maps database information system on hold:** This program could be providing anglers with valuable fishing and management information over the Internet.

**Over the past several years, DNR Fisheries has made deep cuts into its programs.**

**Temporarily reduced stocking of tiger muskies in the Twin Cities Metro Region:** This reduced a program that can provide easy-to-reach trophy fishing opportunities to half the state's anglers.

**Reduced purchases of specialized equipment:** DNR Fisheries has been unable to buy electrofishing boats and other equipment that are necessary for fisheries management work.

**Reduced lake and stream surveys:** Without the important data from these surveys, popular fishing lakes can't be managed as effectively.

**Reviewed fewer environmental and aquatic plant management permits:** This means a likely increase in harm by development to aquatic resources.

# Inflation

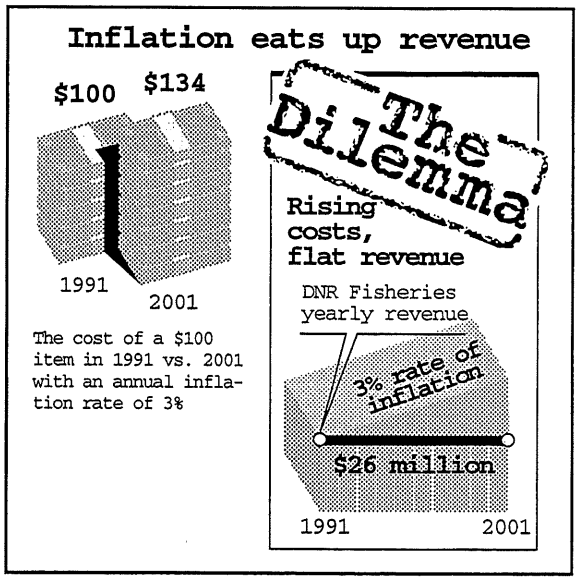
See back for graphs on declining purchasing power of licenses

The primary cause of the Minnesota fisheries budget dilemma is inflation. Inflation has slowly eroded the purchasing power of the DNR Fisheries Section's revenues, which have remained flat for several years. The result? DNR Fisheries can do less and less fisheries management work each year.

## How does inflation work?

Inflation is an economics term meaning the steady increase in the general prices of goods and services, such as gas, housing, fishing lures, and other staples of life. For example, a crankbait that cost $3 six years ago but $3.60 today likely rose in price because of inflation.

During the 1990s, inflation has been relatively low—averaging around 3% per year. But 's still chipping away at your buying power. For example, an average rate of 3% inflation, when compounded, means that something that cost $100 in 1991 costs almost $116 today and will cost $134 by 2001.




## Costs up, revenue steady

Some people don't feel the effects of inflation because, as prices rise, their hourly wage or annual salary rises roughly at the same rate. But if you don't get a little raise every few years, you start to feel the pinch.

That's the situation facing Minnesota's fisheries management. Since 1991, the year of the last fee increase (up $1), the DNR Fisheries Section's yearly revenue has stayed about the same. But during that time, the 3% inflation rate has increased the price of boats, nets, rent, electricity, labor, and the other costs of doing fisheries management on lakes and streams.

In other words, the $13 DNR Fisheries gets from each license can't buy nearly as much as it could six years ago. And that's bad news for Minnesota's fisheries.

Though the Minnesota legislature has increased the Section's funding in some years to offset some inflationary cost increases, that hasn't been nearly enough to make up for the overall effects of inflation on the Section's budget since 1991.

With less and less money to pay for management, the Fisheries Section has been forced to eliminate fisheries positions and find cheaper ways of doing business. Now the Section is at a point where there's nothing left to cut without harming basic fisheries programs that provide recreation and protect Minnesota's aquatic environments.

## What's the solution?

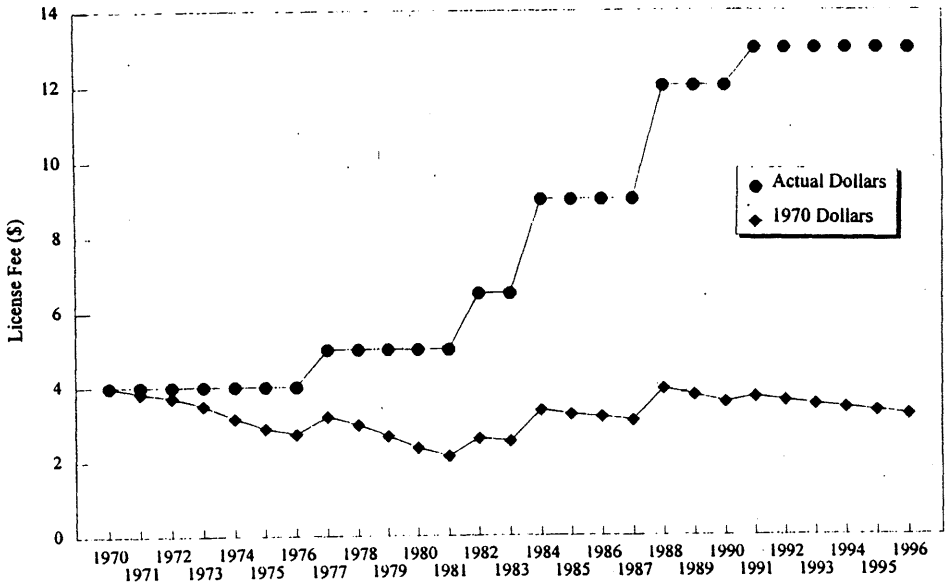
Historically, fishing license fees have increased every five or six years to account for inflation. That time has arrived again.

If anglers want to maintain the high-quality of fishing still available in much of Minnesota, then fishing license fees have to at least keep pace with inflation. That would mean increasing fishing licenses $3, from $13 to $16.

The only other option is for DNR Fisheries to continue reducing fisheries management throughout Minnesota.

**As inflation slowly erodes purchasing power, DNR Fisheries can do less and less fisheries management each year.**

# Fishing license fees: actual vs. 1970 dollars




The graph at left compares the cost of a fishing license with the cost when adjusted for inflation since 1970 (using the Consumer Price Index).

It shows that a fishing license actually costs less today than it did in 1970.

# Fisheries's budget

The Dilemma
Rising costs, Flat revenue

DNR Fisheries has a yearly budget of about $17 million. Most of this money comes from the Game and Fish Fund, which is made up of revenue primarily from license dollars and stamps and from federal excise taxes on hunting and fishing gear.

The state legislature appropriates money from the Game and Fish Fund to various DNR units, primarily the Division of Fish and Wildlife. However, because DNR fisheries-related activities such as enforcement and engineering aren't done by the DNR Fisheries Section, 39% of the money generated by fishing licenses goes to these other areas.

## How is it spent?

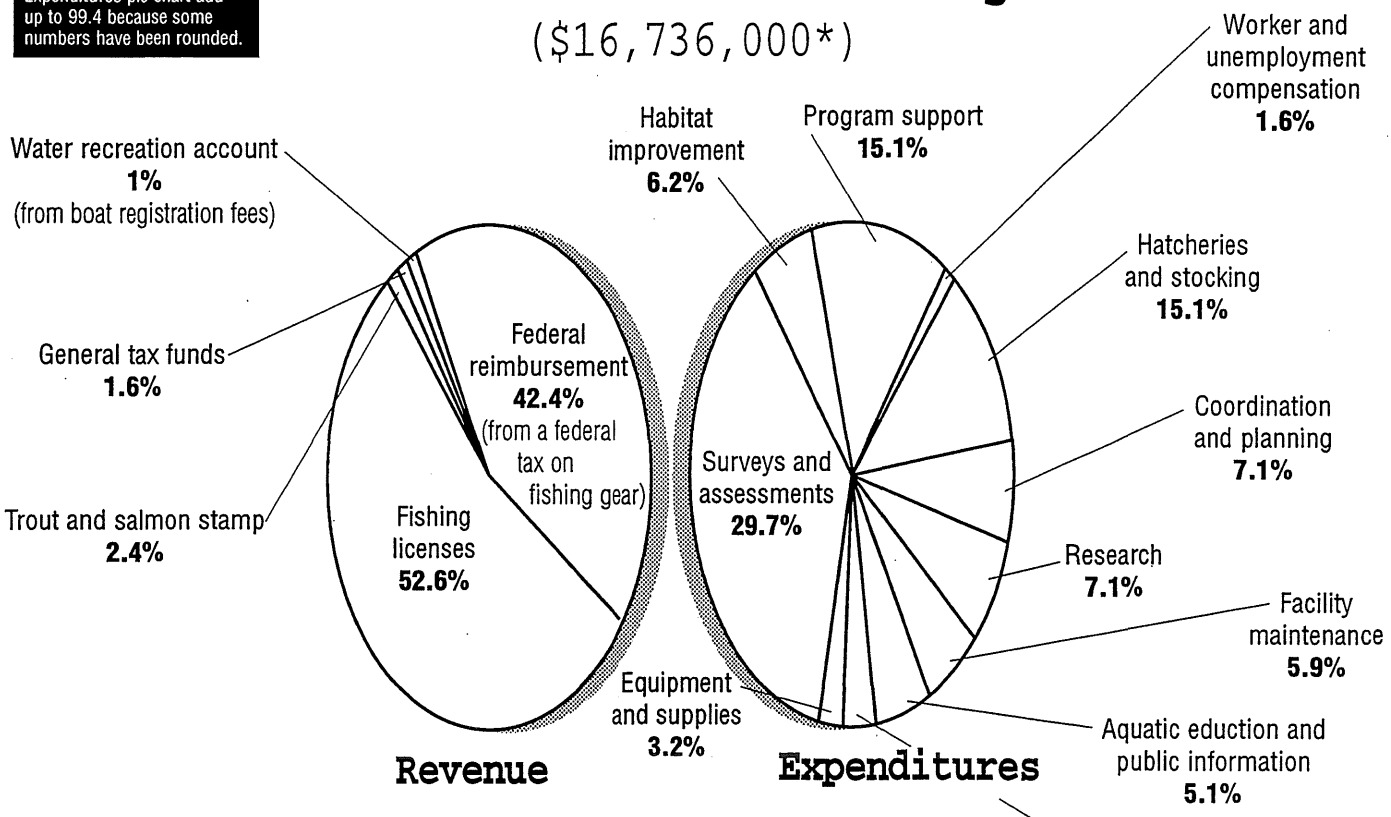
The pie charts below show that the biggest slice of the budget pays for lake and stream surveys and assessments. This work is the foundation of all fisheries activities and includes creel surveys, fish population assessments, and inventories of all other physical, chemical, and biological information. Without surveys, DNR fisheries would lack crucial information required to manage lakes and streams.

Other big expenditures include raising and stocking fish, improving habitat, and providing program support (the latter combines federal aid coordination, personnel management, and other general business activities.

Note: Percentages on the Expenditures pie chart add up to 99.4 because some numbers have been rounded.

## DNR Fisheries's 1996 Budget

($16,736,000*)




* DNR Fisheries actually takes in more than this amount, but that money goes to other areas of the DNR that do work benefiting fisheries. (See "Those 'other' expenditures" fact sheet)

** This is the development of plans to provide quality fishing by managing habitat, setting regulations, and stocking.

# Using the fee increase


How much of an increase is needed? And how would DNR Fisheries use the additional revenue from a fishing license fee increase?

A reasonable increase that would keep Minnesota fisheries management fiscally sound for six years (based on current inflation estimates) would be $3. That would raise the cost of a fishing license from $13 to $16. Any increase less than that would require another increase in three or four years to maintain fisheries programs.

## Where would the money go?

The highest priority would be to provide more money to field stations so they can use it for important local projects such as lake aeration systems, lake reclamations, and habitat improvements. Many of these would be cooperative projects with local communities and sports groups. And many of the projects would leverage additional funding from public and private sources.

Another way a fee increase would help area fisheries offices would be to fund a heavy-equipment operator who could help field staff complete small projects.

The next priority would be to provide staff who would work with citizen and local governments on comprehensive lake and watershed management. This would allow DNR Fisheries to work more closely with individuals, citizens groups, businesses, sports groups, and other government entities working within a watershed to make lake and stream ecosystems cleaner and healthier.

Money from the fee increase would also provide more funding for the MinnAqua aquatic education program, as has been requested by the Minnesota Fishing Roundtable participants, the Minnesota Sportfishing Congress, and others interested in increasing the number of citizens who understand the importance of preserving the state's aquatic ecosystems.

Another top priority would be to hire a Twin Cities Region watershed coordinator—or to leverage funds for several coordinators. A watershed coordinator would work with citizens and local governments to protect water quality and fish habitat in Lake Minnetonka, Lake Phalen, the Mississippi River, trout streams, and other valuable urban fisheries.

**The highest priority would be to provide money to field stations to use for important local projects.**

## How about statewide needs?

DNR Fisheries's top priority would be to expand computer systems so that local field workers would have access to essential information stored in a central database so they could communicate and exchange information with other local offices, other agencies, and citizens.

## Anything DNR Fisheries still couldn't do?

Yes. There would still be huge needs for expanded fishing education programs, publicizing angling ethics and aquatic ecosystem protection, improving office facilities, fixing old equipment, and more.

And even with the $3 increase, DNR Fisheries still wouldn't be able to restore all the cuts made over the past several years (see fact sheet "What if license fees don't increase?").

# Other Fisheries revenue sources


Anglers contend correctly that people who don't fish also benefit from fisheries management that protects the environment and fuels the state's fishing-based tourism economy. A question anglers often ask DNR Fisheries workers is, "Why can't you look for other revenue sources instead of raising license fees?"

Good question. And the answer is that part of the Fisheries Section budget already comes from sources other than license fees. DNR Fisheries's $17 million annual budget comes from anglers in the form of fishing licenses (52.6%), a federal excise tax on fishing equipment (42.4%), and trout and salmon stamps ?.4%). The remaining 2.6% comes from a wide variety of sources, thus ensuring that other citizens shoulder some fisheries management costs. These sources include:

### ♦ Environmental Trust Fund and Future Resources Fund

Money in the Environmental Trust Fund (ETF) comes from the state lottery. Future Resources Fund money is generated from a state tax on cigarettes. These funds are portioned out by the state legislature.

Many anglers think DNR Fisheries gets a large amount of money from the lottery. That's not true. ETF funds are sought after by dozens of agencies and organizations in a highly competitive process. Since 1989, the Section has received a total of $3.8 million from both the ETF and cigarette tax—averaging less than $500,000 per year.

### ♦ Capital bonding

When DNR Fisheries needs to buy land or fix up buildings, it can ask for funds from state-issued bonds. Since 1990, DNR Fisheries has received roughly $400,000 per year in capital bonding. The money is usually used for buying stream easements, repairing aging hatcheries, or improving fish habitat. However, bonding dollars can't be used to pay salaries for state employees working on these projects.

### ♦ RIM Critical Habitat Match

The Reinvest in Minnesota (RIM) Program began in 1986 as a way for the state to ensure that its fish and wildlife resources would stay healthy and abundant. The Critical Habitat Match provision of RIM matches state dollars with equal contributions from private sources to buy or improve important habitats. Critical Habitat Match funds come from a combination of ETF and bonding revenues.

DNR Fisheries uses RIM primarily to buy aquatic management areas, which are lakeshore lands that provide fish habitat. Since 1991, DNR Fisheries has received $1.2 million to buy 12 of these areas. RIM funds totaling about $180,000 have also gone to improve fish habitat on 10 projects.

**Many anglers think DNR Fisheries gets a large amount of money from the state lottery. That's not true.**

### ♦ The rest

Fisheries also gets small amounts of funding from several other sources:

- $286,000 each year from the RIM general fund for the MinnAqua aquatic education program and other projects,
- $30,000 each year from donations and sales of publications,
- $70,000 each year in donated volunteer work and private sector services.

# Those "other" expenditures


Many anglers wonder why some of their fishing license dollars go toward work that is done by DNR units other than the Fisheries Section.

The answer is that managing Minnesota's fisheries requires huge amounts of diverse work—from issuing press releases and enforcing fishing regulations to designing new hatchery facilities and installing boat ramps. These are crucial components of fisheries management, and yet they are done by bureaus or divisions other than DNR Fisheries. Here's why:

## Contracting with specialists

It would be inefficient for DNR Fisheries to have its own architects, engineers, and environmental review specialists. There just isn't enough work for them in Fisheries alone to justify such expenses. And yet, Fisheries often needs these services.

One option would be for Fisheries to contract out the work to private companies. But that would be expensive and time-consuming. Far more reasonable and cost-effective is to make use of other DNR workers who are trained in these fields. And this is why roughly 39% of your fishing license dollar goes to areas of the DNR other than the Fisheries Section.

## Like where?

- 14.5% goes to DNR operational support services such as engineering (e.g., designing a roughfish barrier), information and education (e.g., *Minnesota Volunteer* magazine and press releases), facility and equipment support (e.g., keeping trucks and buildings in order), legal assistance (e.g., on treaty issues), acquisition support (e.g., to help buy trout stream easements), human resources (e.g., resolving personnel issues), information management (e.g., keeping computers up and running), and financial management (e.g., coordinating budgets).
- 20% goes to the Division of Enforcement, which enforces fishing regulations to make sure that fishing is done safely, fairly, and sustainably.
- 2% goes to the Division of Trails and Waterways which uses the money to build and maintain boat ramps.
- 2.5% goes to the Section of Ecological Services, which does fisheries-related work such as lake mapping, environmental review, aquatic plant management, and exotic species control.

**Crucial componenets of fisheries management are done by DNR bureaus and sections other than the Fisheries Section.**

## Does DNR Fisheries get back what it pays into these services?

Yes. DNR Fisheries has a tight budget, and it demands from other bureaus and services as much value in services as it contributes to their budgets. Both the citizens oversight committees and the Minnesota Sportfishing Congress have asked the DNR to use the same precise cost-accounting system used by DNR Fisheries to track expenses in its other bureaus and divisions. The agency is moving in that direction and hopes to have such a procedure in place by 1998.

# The economic value of fishing


Each year anglers spend more than $900 million in Minnesota on fishing-related recreation. That's according to the U.S. Fish and Wildlife Service and the U.S. Bureau of Census, which conduct comprehensive surveys of fishing in all states every five years.

## What kinds of expenditures?

The big money spent on fishing goes to boats, travel expenses, and fishing equipment. But little items add up, too. For example, anglers spend $4.7 million each year just on ice. Some other expenditures:

- bait: $34 million,
- boats and canoes: $117 million,
- rods and reels: $25 million.

Fishing is the foundation of Minnesota's tourism industry. Each summer, hundreds of thousands of anglers from throughout the U.S. are lured to Minnesota by the state's reputation for clean water, wild surroundings, and superb fishing. Resort owners—ranging from mom-and-pop operations to luxury resorts such as Izaty's and Cragun's—rely in part on the state's high quality of fishing for their livelihood.

Rural gas stations, cafes, and motels obviously benefit from the 1.5 million adult resident and nonresident anglers. For example, Phil Koep, of Clitherall, and his family have been selling bait for 48 years. One of 440 wholesale bait dealers in Minnesota, Koep employs nine people during the summer and two year-round. He also leases ponds from local farmers for rearing bait and buys leeches from neighboring trappers. Such is the way that fishing dollars travel through a local economy.

Another example: Tourism and travel add nearly $50 million to the Lake of the Woods County economy each year. Much of that, says Carol Altpeter, formerly executive director of the county's tourism bureau, comes from fishing-related expenditures.

## Catch a bite downtown

Not so well known is the value of fishing to urban economies. Fishing supports sporting goods stores and boat dealers in the Twin Cities, Duluth, and Rochester.

"Fishing is on the itinerary of many well-to-do people who visit the Twin Cities," says Twin Cities fishing guide Steve Carney.

In addition to the thousands of modest operations such as Carney's guide service are the many national and even international fishing-related industries that thrive in Minnesota, such as Alumacraft, In-Fisherman, Johnson Fishing, Inc., Lund, 3M's Scientific Angler Division, Normark Corp., Stearns Manufacturing, Inc., and Water Gremlin.

**Each year anglers spend more than $900 million on fishing-related recreation in Minnesota.**

## Reinvest in fishing

A 1984 report by a governor-appointed citizens commission concluded that each year Minnesota should reinvest the equivalent of the sales tax generated from fishing expenditures back into the aquatic resource base. Nowadays that would be roughly $50 million each year. Yet since then, Minnesota has invested just a fraction of that recommended amount into protecting its aquatic resources. Fishing licenses and fees hardly make up the balance, for they account for only 2% ($17.8 million) of the total spent on angling each year.

# Oversight committees


In 1995, the Minnesota Sportfishing Congress asked visitors to the Northwest Sport Show if they thought fishing license fees should go up if it meant more money going into fisheries management. More than 70% said yes, if the money went to fisheries management.

While that survey may not be scientifically accurate, it does indicate general public support for a fee increase. Anglers appear to realize that their license fees need to go up every few years if the state's top-notch fishing is to be protected.

At the same time, however, many anglers wonder about the DNR Fisheries Section's budget and the use of their angling license dollars. Is the money being spent wisely? Are measures being taken to reduce waste and eliminate all but essential activities? And wouldn't it make sense to let citizens go through the Section's books and see if anglers themselves can find ways to reduce costs or save money?

The answer to all these questions is yes. Since 1994, three different citizen committees have been scrutinizing the Fisheries Section's budget and the Game and Fish Fund. Their conclusion: that periodic fee increases are crucial to maintain Minnesota's high quality of fishing.

## Why the committees?

The committees were formed in 1994 by the Minnesota legislature to review DNR reports on how the agency spent money from a wide range of special surcharge and stamp accounts, including the Game and Fish Fund.

Anglers and legislators wanted to know where the money from various accounts was going, to ensure that it was being used as intended by the legislation that established the accounts. The DNR commissioner appointed citizen leaders to review:

- the Game and Fish Fund,
- the overall DNR Fisheries budget,
- the Trout and Salmon Stamp Fund.

The committees were charged with reviewing various reports and making recommendations to the legislature. The committees convened in January 1995 and have met many times since.

## What did they find?

In its first annual report, the committee looking at the Game and Fish Fund concluded that periodic fee increases are of "vital importance" to offset inflation and to enhance programs. The other two committees arrived at the same conclusion, even complimenting DNR Fisheries on its thorough cost-accounting procedures and recommending a fishing license fee increase.

**The committees concluded that periodic fee increases are crucial to maintain Minnesota's high quality of fishing.**

The Trout and Salmon Stamp Fund Committee wrote in its recommendation: "Additional revenues for both cold- and warmwater fisheries should be generated by increasing the fee for a Minnesota fishing license."

# Commonly asked questions


**Q: Why is the DNR suggesting a fishing license fee increase?**

A: Because a fee increase is the only realistic way to adequately maintain Minnesota's fisheries management program. Over the past 10 years, prices have risen due to an average inflation rate of 3% each year. Meanwhile, the DNR Fisheries Section's revenues have remained flat. The result? Each year the Section has less and less money to provide basic fish management services such as lake and stream surveys, habitat improvements, and stocking. Without a fee increase, these programs will continue to be reduced.

This is a dilemma faced by both DNR Fisheries and Minnesota anglers. And DNR Fisheries believes that the fairest and most reasonable solution is to increase license fees. This would continue the successful "user pays, user benefits" concept, which has supported fisheries management for years.

**Q: Will DNR Fisheries use the fee increase to do more projects that are visible to anglers?**

A: Yes. Fisheries currently spends $500,000 each year on these projects—which include lake aeration, lake reclamation, habitat improvement, aquatic plant restoration, and creel surveys (crucial for monitoring fishing success). Fisheries has maintained this amount to make sure that some projects are done every year, even during times of budget cuts and staff reductions.

With a fee increase, fisheries would increase the annual amount for these projects by $800,000 to $1,300,000. An dditional amount (currently estimated at $700,000) would go to field stations to improve local public services such as cooperative projects, information gathering and exchange, and buying equipment necessary for field operations throughout the state.

**Q: If the Fisheries Section gets a fee increase, will more fish be stocked?**

A: A fee increase will help maintain current levels of stocking and will allow the Fisheries Section the flexibility to stock new waters when opportunities arise.

**Q: What if there is no fee incease?**

A: The lack of a fee increase would worsen three problems facing Minnesota's fisheries management:

- DNR Fisheries could not make up for the 50,000 hours of fisheries management lost each year due to the elimination of 22 fisheries positions since 1993.
- The DNR Fisheries Section's budget would remain dangerously close to the red. This makes Minnesota's fisheries management program financially vulnerable to unforeseen factors such as changes in weather, the economy, or federal funding.
- Field stations would continue to lack funding for much-needed projects such as lake aeration, lake rehabilitations, and habitat restoration.

**Q: How does Minnesota's resident fishing license fee compare to that charged by other states?**

A: Even though Minnesota offers some of the best fishing in the country, it charges below the national average ($13.81) for its resident fishing license. Nationally, the cost of an individual resident fishing license in 1996 ranged from $3.75 (Hawaii) to $27.50 (Massachusetts). Several other states are also requesting fishing license fee increases in 1997.

*Continued on back.*

**Q: How much would my fishing license increase under the DNR's proposal? Who sets these fees? And when would they have to be raised again?**

A: An individual resident fishing license would go up $3, from $13 to $16—an increase of 28%. Overall, fishing license fees (resident, nonresident, shelters, etc.) would increase an average of 28%. Individual nonresident angling license fees would increase by 27% ($27.50 to $35). Fee increases are proposed by the DNR, but the legislature has to approve them before they go into effect. Historically, fee increases have been raised every 5 to 6 years to keep up with inflation. The last fishing license fee increase ($1) was in 1991.

**Q: Where does the funding for fish management come from?**

A: The Fisheries Section's budget pie is made up of the following pieces:

By far the biggest slices come directly from anglers in the form of fishing licenses (52.6%) and federal aid, derived from a tax on fishing equipment (42.4%).

The next largest slice (2.4%) comes from the Trout and Salmon Stamp. General Tax Funds (from lottery, bonds, and the general fund) make up 1.6%, and the Water Recreation Account (from boat registration fees) contributes 1%.

**Q: Doesn't the DNR Fisheries Section receive lots of money from the Environmental Trust Fund (the state lottery) and the Future Resources Fund (a cigarette tax)?**

A: Some, but not nearly as much as many anglers believe. Since 1989, DNR Fisheries has received a total of $3.8 million from both lottery and cigarette tax revenues allocated by the Legislative Commission on Minnesota Resources. This averages to about $500,000 per year—certainly not chicken feed, but only about 5% of the DNR Fisheries's budget.

Money from the state lottery is deposited into the Environmental Trust Fund, which is administered by the Legislative Commission on Minnesota Resources. DNR Fisheries has to compete with dozens of other organizations for state lottery proceeds. Fisheries also competes for capital bonding money (on average about $400,000 per year since 1990) and Reinvest in Minnesota (RIM) Critical Habitat Match money (a total of $1.4 million since 1991).

**Q: Won't a fee increase simply go to increase a large St. Paul staff?**

A: No, it won't. Nearly all of the fee increase allocated directly to DNR Fisheries would go to maintain and enhance fisheries work at the local level.

The DNR Fisheries Central Office staff is relatively small. Out of 317 employees statewide (277 full-time and 40 part-time), only 17 (5.4%) work in the St. Paul headquarters. Of this 17, four are clerical employees, two are computer specialists, and one is a statistician who mainly serves field staff.

The six regional offices have a total of 18 (5.7%) employees. The vast majority of DNR Fisheries workers (88.9%) are stationed at 28 area offices and 17 hatcheries throughout the state.

**Q: Have any of the 22 DNR Fisheries positions already eliminated over the past few years been in St. Paul, or were they all in greater Minnesota?**

A: DNR Fisheries has eliminated positions proportionately across the state. Of the 22 positions eliminated or held vacant, 15 have been at area (local) offices, 3 at cold-water hatcheries, 2 from research staff, and 1 from the St. Paul central office.

**Q: Why does the fishing regulations booklet get thicker and more complicated each year?**

A:One reason is advertising, which the DNR now sells to keep pace with rising costs. The other reason is that anglers have told the DNR they want to catch bigger fish. As a result, the DNR has begun an experiment that restricts the harvest of fish on certain lakes and streams. And this has meant adding regulations for those specific lakes and streams to the regulations booklet.

Reducing harvest is usually the most effective way to achieve the goal of producing larger fish. In other words, the regulations use "catch and release" as the main tool for increasing fish size.

The new statewide regulations experiment will see how certain regulations affect fishing quality on different lake types. This type of individual waters management has been requested by the Fishing Roundtable (an annual meeting of fishing groups, outdoors writers, legislators, and fisheries workers), which wants individual lakes and streams managed for their biological and recreational potential.

# Why the DNR Fisheries Section exists


To understand the current Fisheries funding dilemma faced by Minnesotans, it helps to understand where the DNR Fisheries Section came from in the first place.

DNR Fisheries did not just drop in out of the blue. It was created—and has been expanded—by Minnesota citizens. Over the decades, they have asked the DNR to be stewards of the fish communities and aquatic resources that support the state's tourism industry and Minnesota's strong sport fishing heritage.

In 1874, citizens eager to increase fish numbers in the new state through stocking created Minnesota's first fisheries commission. For the next 60 years, fisheries management consisted mostly of rearing and stocking fish. But in the early 1930s, the Fisheries Section began hiring young university graduates such as Samuel Eddy, Lloyd Smith, and John Moyle. These scientists were among the first in the country to recognize that native fish populations suffer without adequate habitat, clean water, and regulated sport and commercial fishing harvest.

It was a significant change in thinking about fisheries management.

## Information gathering

At the time, no one knew exactly what fisheries and aquatic resources needed to stay healthy. Information about those resources just didn't exist. But by World War II, the Fisheries Section had begun collecting information about the state's lakes, streams, and fish populations. If they gathered enough information, reasoned the scientists, fisheries managers could begin to intelligently decide how best to manage the state's fisheries.

At first, many anglers and lawmakers questioned expanding the scope of fisheries management to include research. But it didn't take long for critics to see that without scientific study, fisheries management was a crap-shoot.

**DNR Fisheries did not just drop in out of the blue. It was created by Minnesotans who wanted stewardship for the state's diverse fisheries.**

For example, no one knew how many fish should be stocked in a lake. Not until research showed how young fish survive in various types of lakes could fisheries managers make prudent stocking decisions. Research and surveys, it turned out, are essential to fisheries management.

So is an understanding of lake ecosystems. Which is why, over the years, Minnesotans have encouraged the Fisheries Section to expand its scope. Most citizens know that lakes and streams are fragile resources that can be ruined by overuse, pollution, and habitat destruction. And they understand that the state's fisheries resources are public resources that should be passed on to future generations at least as healthy as we inherited them.

# What do fisheries managers do?


It's not all that apparent what fisheries managers do. Stock fish? Well, sure, they do stock—and take part in the egg stripping and rearing that go along with it. But managers do far more.

The job of a fisheries manager is to keep watch over—and where possible to protect or improve—the diverse fisheries in one of 28 different areas of Minnesota.

The work entails both hard physical labor—lifting nets, handling fish, carrying outboards—and tough mental decision-making, such as figuring out how to spread a tiny budget over dozens of lakes.

Though it attracts many quiet types, the job of a fisheries manager requires a great deal of talking—to angling groups, resorters, contractors, legislators, lake associations, and local units of government.

Paul Glander, area supervisor at Detroit Lakes, might be considered a typical area fisheries manager. His six-county area in northwestern Minnesota includes 151 lakes, 14 rivers, and dozens of streams amidst pine forest, hardwood forest, and prairie landscapes. A glimpse of what fisheries managers actually do can be found in the following composite of several different days in his working life:

### 7:15 a.m.

Glander starts off the day by heading out the door with Gary Huberty, assistant area fisheries supervisor, to a small leased pond 15 miles west of Detroit Lakes. Over the course of an hour, they collect from six trap nets approximately 100 pounds of fathead minnows that will be fed to young muskies in a nearby DNR rearing pond.

### 8:55 a.m.

Back at the office, Glander peels off his waders just in time to take a call from the DNR regional fisheries office in Bemidji. Glander's boss, Bob Strand, asks him to fax a signed permit application from the U.S. Fish and Wildlife Service submitted on behalf of the White Earth Indian Reservation. The application will allow the band to stock Nebraska-raised fingerling tiger muskies in the reservation's Little Elbow Lake. Glander, who is coordinating the application process, quickly calls a U.S. Fish and Wildlife Service office in Wisconsin to verify that the application has been signed and mailed to his office.

**"*Plants!*" shouts Glander in mock exasperation. "*Plants!*"**

### 9:00 a.m.

Pulling a 16-foot boat and trailer behind a DNR truck, Glander heads to northern Becker County. An hour later, he reaches Round Lake and motors out to a small stand of bulrushes guarded by two signs cautioning lake users that the plants are part of a fisheries management project.

Eight weeks earlier, at the request of lakeshore owners Ruth and Leonard Bergquist, Glander worked with volunteers and a DNR aquatic plant specialist to transplant bulrushes to the 4- by 40-foot area near the lakeshore. Now he's checking to see if the bulrushes, which help clear water and anchor soil, have taken hold. The Bergquists are among the growing number of lakeshore owners learning that bulrushes and other native aquatic vegetation are valuable plants, not nuisance weeds.

*Continued on back.*

As Glander departs, Leonard Bergquist calls, "Thanks for your help on this, Paul." A mischievous look appears on Bergquist's face. "We appreciate the weeds."

"*Plants!*" Glander shouts back in mock exasperation. "*Plants!*"

### 11:20 a.m.

Glander stops by Tullibee Lake, where he motors out to a boat in which DNR fisheries crew members Marc Olson and Joel Jokela slowly pull in a 250-foot-long gill net. It's the second day of a fish survey on Tullibee, which DNR crews assess every five years.

Olson and Jokela remove northern pike, walleye, suckers, tulibees, and a few rock bass from the net and put them in large tubs. As Glander pulls away, the two men begin recording the weight, length, sex, and other information about each fish caught. It's from surveys like these, says Glander, that the DNR knows what's in lakes and how various fish populations are faring from year to year.

### 12:10 p.m.

Glander decides he has time to make a surprise visit to the Jolly Fisherman Resort at Elbow Lake. There, DNR summer intern Nickie Kinzler is teaching a group of kids how to tie clinch knots. Kinzler is working with the DNR's MinnAqua Program, which teaches young anglers about fish biology, lake ecology, and fishing ethics. Glander chats with the intern while the kids crowd around them, eager to tell what they've learned so far. "We learned not to throw fish up in the air if we don't want 'em," says Kristen Simon, age 8. Nate Buelow, also 8, adds "They can bruise more than an apple."

### 12:25 p.m.

Driving east on winding Minnesota Highway 113, with glimpses of the vast Red River Valley appearing in the distance, Glander eats his lunch while going over the busy afternoon schedule in his mind.

### 1:10 p.m.

Glander walks out to a site near Fosston where a landowner wants to install culverts on a drainage tributary to the Sand Hill River. Glander has been asked by the DNR Division of Waters—which provides permits for such projects—to review the site and see if culverts will harm fish habitat. Seeing no potential for problems, Glander heads back to Detroit Lakes.

### 2:30 p.m

At a machine shop owned by the Pelican River Watershed District, Glander inspects a large aquatic plant harvester. One of his responsibilities is to check the machine each time it is moved from one lake to another to make sure it's not transporting harmful exotic species such as Eurasian water milfoil.

### 2:55 p.m.

Back at the office, Glander sits down and writes a memo notifying members of the DNR's Prairie Landscape Team about a mid-August meeting. Glander chairs the team, which recommends ecosystem-wide approaches to land and water management in western Minnesota.

### 3:10 p.m.

Glander begins working on a performance review for one of his crew members when the phone rings. It's the head of the Cormorant Lakes Sportsman's Club, who's calling to discuss a cooperative project between the club and the DNR to install an aeration system on a local water called Lake Fifteen.

### 4:05 p.m.

Glander hangs up, finishes the review, and turns to his computer to wrap up a management plan for Upper Cormorant Lake. The phone rings. It's Jim Hest, an engineer working with the West Polk County Soil and Water Conservation District. The banks of the Sand Hill River are eroding and eating up part of a golf course. Hest asks Glander to meet with him, several other agency representatives, and the golf course manager the following week to discuss using natural plantings to stop the erosion.

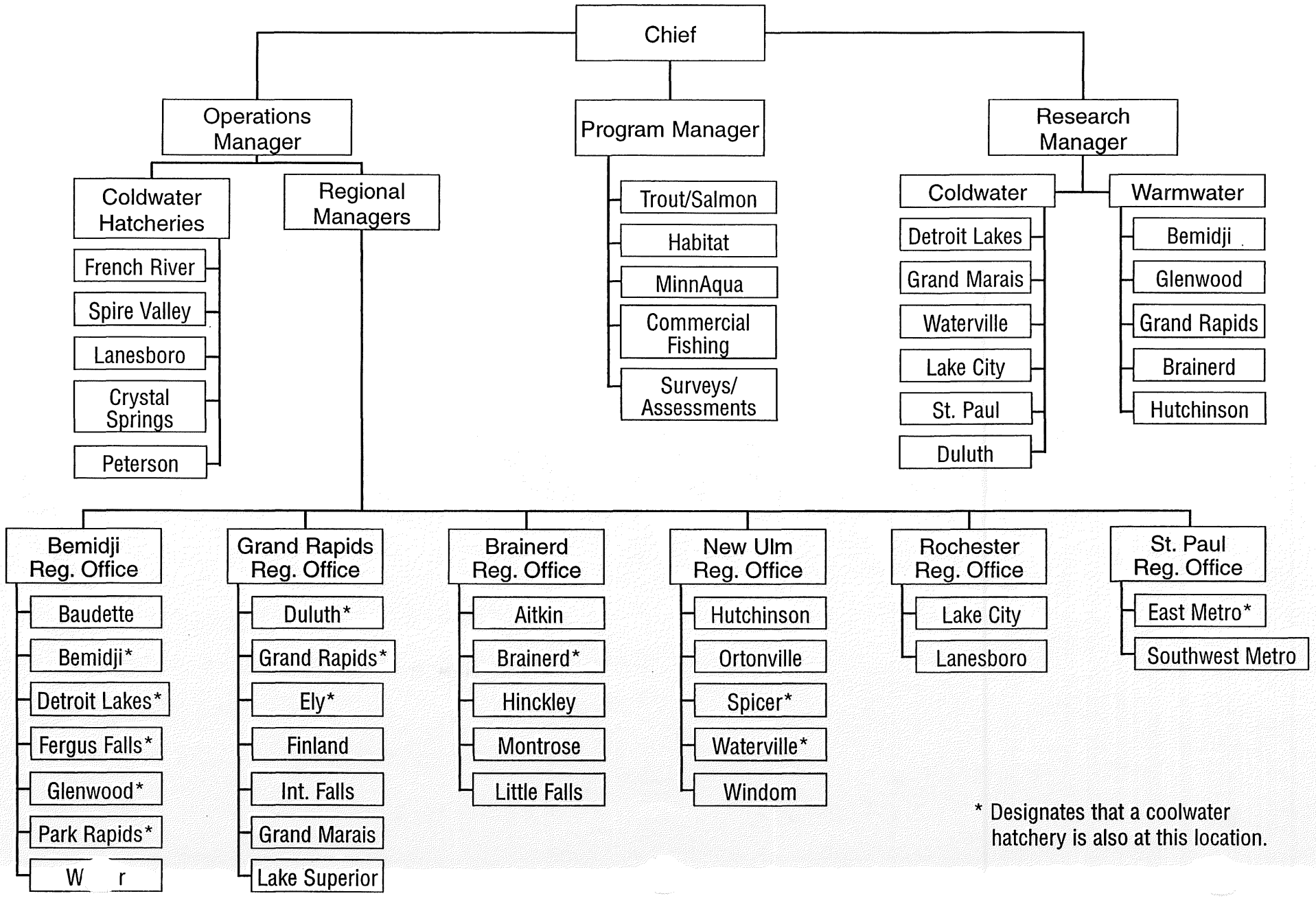
### 5:00 p.m.

About 25 people, including Glander, gather at the home of a Fox Lake resident for a meeting of the Fox Lake Lake Association, one of 88 lake associations in his area. Glander gives a short presentation on the environmental and fishing recreation benefits of reestablishing bulrushes on lakes. He answers questions and agrees to speak again at a future meeting.

### 6:05 p.m.

Glander heads home, stopping by a bait shop in Detroit Lakes to pick up a dozen night crawlers. It's Friday, and tomorrow he's going fishing.

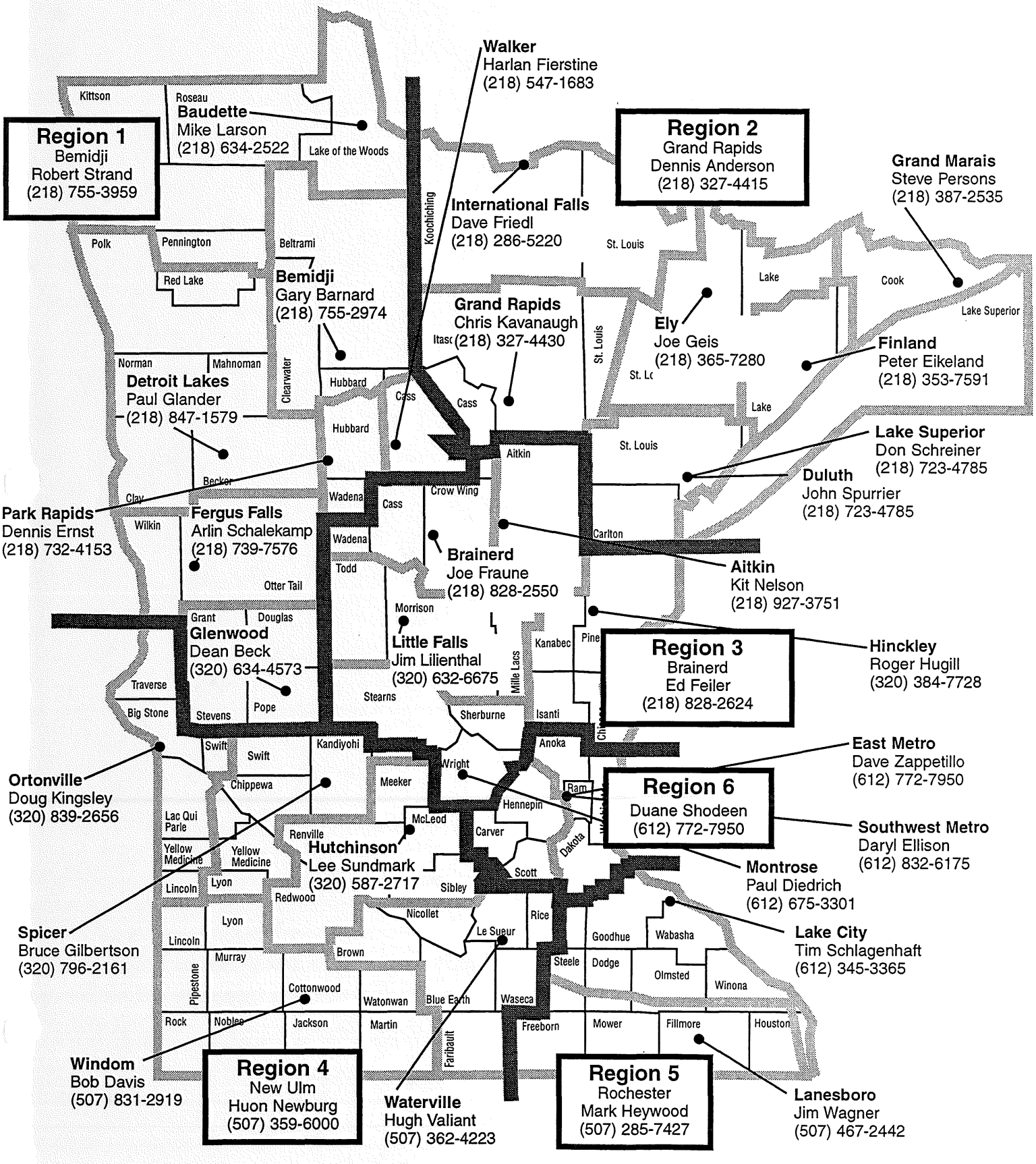
# DNR Fisheries Section
## Organization Chart




* Designates that a coolwater hatchery is also at this location.

# Fisheries regional and area offices

The Dilemma
Rising costs, Flat revenue



Top coat materials

# Fisheries programs


The DNR Fisheries Section manages 5,400 game fish lakes and 15,000 miles of fishable streams and rivers. To do this work, the section requires a staff of 317 workers who organize their activities into various programs:

**Habitat protection**

Without fish habitat, there are no fish. DNR Fisheries protects spawning reefs, nursery areas, and other habitats by giving advice to clubs, local governments, and landowners on how to avoid destroying these aquatic resources. Fisheries also buys areas of shoreline and stream bank to protect critical fish habitats.

**Habitat improvement**

DNR Fisheries improves fish habitat by installing lake aeration systems, improving spawning areas, restoring aquatic plants, putting fish shelters in streams, removing dams, reclaiming lakes, and restoring natural stream channels.

**Lake and stream surveys**

Each year, DNR Fisheries surveys roughly 600 lakes and 125 streams using nets and electrofishing. The information from these surveys is essential in helping fisheries workers decide how to best maintain or improve fishing in a lake or stream. It is also used by anglers, lakeshore owners, and real estate agents. Each year, DNR Fisheries provides 38,000 lake survey printouts for these and other citizens.

**Research**

Each year, an average of 10 research projects provide essential information that helps fisheries managers make prudent and cost-effective decisions about how to manage Minnesota's fisheries.

**Education**

Created in 1990, the MinnAqua Program has taught more than 50,000 kids—mostly urban, minority youth—how to fish and to value the state's aquatic environments.

**Large lake monitoring**

DNR Fisheries pays special attention to the state's 11 largest lakes, which account for more than 40% of all walleyes caught in Minnesota. By carefully monitoring the fish populations in these huge waters—which include Leech, Lake of the Woods, Winnibigoshish, Mille Lacs, and Superior—fisheries workers can spot population trends that will affect fishing success down the road. They can also take steps to correct any problems revealed by the monitoring information.

**Hatcheries**

The DNR stocks hundreds of millions of fish each year in lakes and streams throughout the state. These fish are hatched and reared in 12 cool-water and 5 cold-water hatcheries.

**DNR Fisheries manages 5,400 game fish lakes and 15,000 miles of fishable streams and rivers.**

**Commercial fisheries**

Minnesota's commercial fisheries operations include netting roughfish on large lakes and rivers; collecting and selling turtles, frogs, and mussels; and raising food and game fish (aquaculture). DNR Fisheries monitors these operations to make sure they are done legally and without harming fish populations or aquatic environments.

**Administration**

This is the nuts and bolts of running any large organization. The work includes supervising staff, developing budgets, working on legislation, and administering federal aid.

**Coordination and planning**

This program carries out statewide management in a directed, efficient manner. Among its purposes is to make sure DNR Fisheries doesn't duplicate services or miss opportunies to work with citizens, organizations, and other governmental units.

# Habitat protection

See back for a habitat protection SUCCESS STORY

The Dilemma
Rising costs, Flat revenue

Fish habitat is a lake or a stream that has all the physical, chemical, and biological conditions needed by fish for spawning, feeding, and resting. In other words, it's the natural environment where a fish lives. Without decent habitat, fish populations dwindle and can even die out.

If kept relatively healthy, a lake or a stream can produce far more fish than a hatchery could supply. By protecting fish habitat such as water quality, bankside vegetation, and bottom substrates, fisheries workers help nature do its job of sustaining fish species.

Fisheries workers protect habitat primarily in two ways: by providing advice and by buying the habitat outright.

## Talking to protect habitat

The advice approach is often the most effective, because so much can be accomplished. Clubs, local governments, and landowners planning to do work that might affect a lake or a stream must first get permits from the DNR. Fisheries workers review these permit applications and make sure the proposed development won't damage fish habitat. For instance, a proposal requiring heavy equipment to cross a trout stream would be approved only if the developer uses erosion control methods that prevent fish spawning areas downstream from getting covered with silt. Reviewing a permit application may involve inspecting a site, meeting with contractors, consulting with other DNR staff, and monitoring completed projects to make sure conditions of the permit have been met.

Fisheries workers also advise local groups and units of government on how to do long-range planning to protect fish habitat and improve the overall health of lakes and streams. A fisheries worker may serve on an advisory committee that coordinates local watershed management, lake improvement, or county water planning. This "ounce of prevention" approach works wonders by stopping environmental problems before they get off the drawing board.

**By protecting fish habitat, fisheries workers help nature do its job of sustaining fish species.**

Many anglers aren't interested in this "boring planning stuff." But this is where cities and developers decide how to use—or abuse—land and water. By sitting in on these meetings and pointing out how proposals can either help or hurt fish habitat, fisheries workers can guide local decisions so that fisheries are not damaged.

## Buying the habitat outright

The Fisheries Section actively protects fish habitat by acquiring shorelines and stream banks. This protects critical habitats and provides access for fishing and habitat work.

Acquired lands fall into several categories: critical lakeshore habitats, northern pike spawning areas, trout stream easements, fish barrier sites, and fish rearing ponds. Fishing is protected by ensuring that spawning areas are not degraded, that important shorelines do not erode and pollute lakes and streams, and that fish rearing ponds are adequate to meet stocking needs. The Fisheries Section has acquired more than 150 northern pike spawning areas and 210 miles of trout stream easements.

# Habitat protection success story: Mill Creek

One of the most successful ways the Fisheries Section protects fish habitat is with trout stream easements. More than one-third of Minnesota's trout stream miles flow through privately owned land. To provide anglers some access to those private waters and to protect the critical habitat along the streams, the DNR began a program in 1975 to buy perpetual (lasting forever) easements on private land. With an easement, the landowner still owns the property and gets a one-time payment from the DNR. In exchange, the landowner allows angler access and works with the DNR to protect the natural vegetation along the stream.

"When we purchase an easement, it's the first step in a long-term relationship between the DNR and the landowner," says Steve Klotz, a DNR trout stream specialist at Lanesboro. "Over the years, we have made this partnership do wonders for trout streams."

Over the past two decades, the DNR has purchased more than 210 miles of trout stream easements, building dozens of partnerships with private landowners in the process.

Besides providing access, easements protect the stream environment by maintaining permanent vegetation on the banks. Trees and brush that a landowner might otherwise remove are retained to prevent stream banks from eroding. Grass that might be grazed down by cattle is fenced off to grow tall and thus provide shade that cools the water and creates trout hiding areas. Trees that fall into the stream are left alone to provide cover for adult trout. Livestock, which can trample banks, are kept away from the stream.

Easements also keep land on the tax rolls and still provide for many uses of the land by the landowner.

An example of how easements come about is the recently completed project on Mill Creek in Chatfield. Bob Pederson, a member of the local rod and gun club, saw the potential for the DNR to purchase easements from the City of Chatfield and another landowner through whose land the creek flowed. Pederson called the local DNR Fisheries office, and within two years the DNR had the easements signed and paid for. That's when the real work began. Fisheries staff began working with the landowners to stablize the eroding stream banks, fence cattle out, and do other work to keep the water clear.

**The DNR has purchased more than 210 miles of trout stream easements.**

"These streams are public waters owned by all Minnesota citizens," says Pederson. "What we're doing through this easement program is making sure that public waters stay clean."

# Habitat improvement

See back for a habitat improvement SUCCESS STORY

The Dilemma
Rising costs, Flat revenue

Like all animals, fish need healthy places to live. These natural living conditions, called habitat, include water quality, spawning areas, water temperature, feeding and hiding areas, aquatic plants, and other factors that make lakes or streams decent places for fish to live and reproduce.

The cornerstone of maintaining healthy fish communities is *protecting* the quality and quantity of fish habitat in Minnesota. But it makes sense to *improve* habitat, too. Habitat improvements can range from reestablishing a small bulrush stand (which provides hiding aces for young fish) to manipulating the water levels of a large reservoir so that thousands of acres of walleye spawning habitat can be improved.

Throughout the state, fisheries workers routinely check the status of fish and fish communities and the conditions of fish habitats. Using this information, the biologists write management plans that include recommendations on how habitat in certain lakes and streams can be improved.

## Habitat improvement types:

**Lake aeration:** Shallow lakes or those saturated with nutrients may periodically winter-kill. That means the oxygen level gets too low in winter for fish to survive. Aeration systems on these lakes circulate water and keep it from icing over. The open water helps transfer oxygen to the lake, allowing fish to survive until spring.

**Spawning area development:** Many lakes and streams don't have enough spawning habitat. Altering water levels in marshy areas improves northern pike spawning conditions. Installing rocky reefs makes more places for walleyes to lay eggs.

**Aquatic plant restoration:** Aquatic plants protect shorelines from eroding, produce the underwater insects fish eat, provide feeding and spawning sites for fish, and filter water. Fisheries managers work with lake associations and others to reestablish healthy plant communities where stands of aquatic plants such as bulrushes have been destroyed.

**Improving degraded fish habitat is essential for keeping populations healthy.**

**Instream cover objects:** Trout managers install rocks, root wads, and artificial overhead cover, called lunker structures, in streams to provide more living areas for big trout.

**Lake reclamations:** Fisheries managers chemically remove fish communities in lakes dominated by carp or black bullheads. Then they restock species that make up a healthier aquatic community. Sleepy Eye Lake and Lake Hanska in southwestern Minnesota are examples of reclamation successes.

**Dam removal:** Dams block the passage of fish to spawning and other habitats, disrupt normal sediment and nutrient processing in a stream, and cause water temperatures to warm. By removing dams, the DNR improves the overall health of streams and rivers.

**Channel restoration:** Ditching and straightening channels reduces fish habitat by up to 50%. Fisheries workers restore channels' natural curves to provide a diversity of habitats that benefit the health of fish communities.

# Habitat improvement success story: lake aeration

One of the greatest habitat improvement success stories has been the use of aeration systems to keep southwestern Minnesota lakes from winter-killing.

Since the mid-1970s, the DNR has overseen the installation of aeration systems on Minnesota lakes. From 1994 to 1995 alone, the DNR issued permits for 136 lakes to prevent winterkill, covering more than 75,000 acres of water.

Before the aerators were put in, these shallow, fertile lakes often winter-killed every four or five years. All the fish died, except in some cases species such as carp and bullheads that can live with little oxygen. As a result, the lakes were often overrun with carp and bullheads. If walleyes, northern pike, and other game fish did come back, it took several years for them to reach catchable size. And just when the game fish were catchable, a lake would winter-kill again. For local anglers, it was a frustrating cycle.

A hundred years ago, shallow lakes were less apt to winter-kill because they had fewer nutrients than lakes have today. After decades of fertilizer and silt washing in from surrounding farm fields, lakes have become shallower and more nutrient-rich than in the past. This habitat degradation makes them more prone to winterkill.

Fisheries workers and others in the DNR are striving to correct the environmental problems leading to lake degradation. In the meantime, aeration systems are offsetting some of the habitat damage to shallow lakes. The aerators help circulate the warmer water from the lake bottom, thus keeping the surface free of ice. The surface water, richer in oxygen from contact with the air, mixes with the bottom water and adds oxygen to the lake. Some aeration systems pump water over staircase-like structures to increase oxygenation further.

By preventing bullheads and carp (which cloud water by stirring up bottom sediment while feeding) from taking over a lake, aeration systems actually improve water quality and help boost the production of aquatic plants used by fish and other animals such as waterfowl.

**Aeration systems can offset some of the fish habitat damage in shallow lakes.**

An example of where aeration has done a great job is at Round Lake in the City of Eden Prairie, just south of Minneapolis. According to Doug Ernst, park construction supervisor, the 33-acre lake had a history of severe winterkills, rendering it unfit for fishing during most years. But after the city and the DNR installed a state-of-the-art aeration system, the lake has yet to winterkill. "The bass fishing especially has stayed good" says Ernst.

# Lake and stream surveys

See back for a surveys SUCCESS STORY


How do fisheries workers know what fish are in Minnesota's lakes, rivers, and streams? By using nets and electrofishing gear to conduct ongoing surveys.

Surveys are windows into the world beneath the water surface. Their primary purpose is to show whether populations of certain species are increasing or declining. By plotting this information over several years, or even decades, fisheries workers can spot trends or problems that need solving.

In addition to information about fish biology, surveys also provide data on fish habitat, water quality, angler use, and pollution sources.

Almost everything DNR Fisheries does is based on the foundation of fish population data gathered by surveys over the past 70 years. The DNR's lakes database—one of the largest in the U.S.—contains information from nearly 10,000 individual surveys for approximately 4,000 different lakes.

Each year, DNR Fisheries surveys roughly 600 lakes and 125 streams. On the average, important lakes are surveyed every 3 to 8 years. The state's largest 11 lakes are surveyed every year, because they produce so many fish.

## How does it work?

Survey techniques vary depending on the species and water type. Walleyes, northern pike, and perch are captured using 250-foot-long gill nets. Live fish are released after workers take measurements and scale samples (analyzed later to determine fish age). Dead fish are further analyzed for age, sex, stomach contents, parasites, and contaminants.

Species such as bluegills that are difficult to capture in gill nets are caught using trap nets. Young fish are captured in seines or trawls. Workers survey catfish in rivers with trotlines.

In streams, surveys are done with electrofishing gear. Electrofishing also works to survey largemouth bass, black crappies, and young walleyes in lakes.

## Many uses

Anglers use survey information to help decide where to fish. This data is provided on the 38,000 lake survey printouts given to anglers each year at the State Fair and DNR offices.

Fisheries workers use survey information to prepare plans for how a lake or stream should be managed.

"Before you can decide how to manage a fishery you need to know the makeup of the fish community," says Henry Drewes, program coordinator.

**Surveys are windows into the world beneath the water surface.**

Without solid biological information, adds Drewes, fisheries management would simply be a guessing game.

Survey information also helps fisheries workers figure out if stocking, aeration, and other management techniques are working to sustain healthy fish communities. It also helps them monitor changes in fish habitat.

Survey information will be crucial for judging the effectiveness of the large experimental regulations study now going on. Survey information was used to develop the lake classification system that is the basis for the experiment and to select candidate lakes. It will also be used to determine whether the various regulations work.

# Surveys success story: lake printouts

One of the most important uses of lake and stream surveys is to provide information to anglers and other citizens interested in the fish populations in lakes.

The warehouse of information in the DNR's lake survey database is readily available to the public. Individuals can request a computer printout that details a lake's fish population assessments, past stockings, and other pertinent biological information.

Among the people asking for the information are:

- anglers looking for the best fishing opportunities in their area,
- prospective lakeshore buyers who want information on what's in a lake,
- realtors who use the information to market real estate,
- teachers and students who use the information for class projects and career exploration,
- government workers who use the information for planning.

An example of an angler using the lake survey printouts is Allen Sollenburger of St. Paul. A recent arrival from Kansas, Sollenburger is an avid angler who was overwhelmed by the abundant fishing opportunities in the Twin Cities Metro Region.

"These DNR survey printouts help me narrow down the lakes to the ones my son and I really want to fish most," says Sollenburger.

Each year the DNR central office in St. Paul distributes roughly 25,000 lake printouts. Another 13,000 or so are printed out at the State Fair.

"It's one of the most popular features at the State Fair," says Henry Drewes, who coordinates the DNR surveys program. "Some days we've got people three or four rows deep standing waiting for us to print out a lake."

**"I'd estimate we put lake survey data into the hands of 100,000 Minnesotans every year."**

—Henry Drewes
Survey Program
Coordinator

Additional lake survey information is passed on by fisheries managers to callers and visitors at field offices and at presentations given to lake associations, conservation clubs, and other groups.

"When you consider how these printouts get shared among people, I'd estimate we put lake survey data into the hands of 100,000 Minnesotans every year," says Drewes.

He adds that the lake surveys will soon be available on the Internet as part of the DNR's new Web Site.

# Research

See back for a research SUCCESS STORY


Managing fisheries without research would be like jogging with your eyes closed. Eventually you might get to where you want to go, but not without a lot of bumps and bruises along the way.

Fisheries researchers spend their time figuring out how fisheries management can be done more effectively and more efficiently. They're the guides who lead managers through the obstacles of scientific unknowns. Researchers go into the field and conduct experiments to answer specific questions that managers and anglers ask, such as:

- Why aren't there more big bluegills in Minnesota lakes?
- Where do muskies spawn?
- Can changes in regulations improve fishing?
- How does shoreline development affect fish populations?

## Coming up with the good stuff

Businesses rely almost entirely on research to tell them what their customers need and to create the most effective products for the lowest possible cost. All the fishing equipment you use, for example, is the result of studies and experiments designed to create better products or services. Thank product researchers for graphite rods, trolling motors, depth finders, and crankbaits.

Researchers provide an equally valuable service to fisheries management. Thanks to research over the past 20 years, the DNR now knows that:

- The best muskies to stock are the Leech Lake strain.
- A unique genetic strain of steelhead exists on the North Shore.
- To grow big trout in streams, you need deeper water, overhead cover, and harvest restrictions.
- Stocking walleyes in lakes that already have natural reproduction can be a waste of money.

What's more, it is through scientific research that anglers can learn if something they observe has an explanation with an identifiable cause or is simply a strange natural occurrence. For example, when anglers catch lots of small fish, they want to know why. Research can find out if it's because of large numbers of small fish produced during an excellent hatch a few years before, or it it's the results of over-fishing, lack of forage, or some other reason.

## Bottom line: better fisheries management

One of the most effective results of research over the past two decades has been the evaluation of more than 4,000 walleye stockings to see which worked best and why.

The results of this study showed that whether stocking is successful or unsuccessful often depends most on a lake's specific size, shape, depth, and other ecological characteristics.

**Researchers spend their time figuring out how fisheries management can be done more effectively and efficiently.**

Research on hooking mortality in walleye tournaments helped establish guidelines now used by tournament organizers throughout Minnesota to ensure that fewer fish die.

Another well-known research project, going on now, is looking at the effectiveness of various fishing regulations. This statewide evaluation of regulations on different lake types will test whether new regulations can improve fishing for different species.

# Research success story: ecological lake classification system

Managing the fish in a lake is a little like working on cars: You can't use the same management technique for every lake any more than you can use the same repair manual for every vehicle.

Each of Minnesota's 5,400 game fish lakes is different. As a result, a management technique that works on one lake might not work on another. Or vice versa. For example, if a certain regulation works to improve fishing on Lake X, how do fisheries workers know if it will also work on Lake Y, which is a completely different type of lake?

For decades, managing lakes was like repairing Volvos, Chevies, and Jeeps using just one repair manual. But over the past several years, DNR fisheries workers have been able to group lakes into 44 different categories. A fisheries biologist who knows what category a lake is in now has a fairly good idea of what can be expected of that lake, based on what's happened on similar lakes.

This new framework is called the ecological lake classification system. Developed by Dennis Schupp, senior fisheries scientist at Brainerd, it gives fisheries workers a better picture of normal conditions for the fish communities of a particular lake.

The system is so effective, says DNR Fisheries chief Jack Skrypek, that it now forms the foundation for fisheries management throughout Minnesota and has even been used in other states.

Under the old lake classification system, says Schupp, all lakes were considered similar and were therefore ranked on a statewide average.

"That old system always bugged me, because the median [average] too often didn't relate to real lakes, which are often far different from each other," says Schupp.

During the mid-1980s, Schupp began dissecting thousands of lake surveys compiled from studies throughout the state. He classified the lakes by their physical and chemical characteristics and came up with 44 different categories.

"It's not realistic for us to manage every single game fish lake individually," says Schupp. "But with this system, you can at least narrow down lakes into categories that give you a pretty good idea of what type of fish community would do best there."

The system is helping managers concentrate their limited time on lakes that can benefit most from management. For example, the reason a lake doesn't produce many walleyes might be because it's a type of lake lacking the ecological characteristics that would make it a good walleye lake. And Schupp says you can't force a lake to be something it will never be.

"Let's face it," says Schupp, "DNR Fisheries just can't afford to throw away its limited dollars doing management where it just won't work. This new system is helping us zero in on those situations where we can have the best chance of succeeding."

# Large lake monitoring

See back for a large lake monitoring SUCCESS STORY


Fisheries workers consider every Minnesota lake important. But some of the state's largest lakes are so productive and popular that they deserve additional attention. The DNR has developed a special program to monitor these large lakes and keep close tabs on their fisheries and on fishing pressure.

## Which lakes?

DNR Fisheries began its Large Lake Monitoring Program in 1983. The 11 lakes in the program are:

- Lake of the Woods
- Winnibigoshish
- Cass
- Upper Red
- Mille Lacs
- Leech
- Vermilion
- Superior
- Rainy
- Kabetogama
- Pepin

These massive waters account for more than 40% of all walleyes taken in Minnesota and make up 45% of the 2 million acres of walleye lakes in Minnesota.

## Why is this program needed?

For decades, anglers and fisheries workers had only a vague idea of what the fish population structure was like in the state's largest lakes. As a result, fisheries managers did not always know why fishing was good some years and poor in others. Were the poor years due to poor spawning success in previous years, overfishing, or the gradual degradation of spawning habitat? No one knew for sure.

Anglers were especially frustrated. Dennis Schupp, DNR senior fisheries researcher, remembers when, in 1981, the abundant 1979 year-class at Lake Mille Lacs began showing up as 9- to 10-inchers. Angry anglers, who'd begun calling the lake "McDonald's, Home of the Quarter-Pounder," actually booed when Schupp and his colleagues walked into a public meeting that year.

"Mainly they were angry because they didn't know why the fish were so small, and they didn't believe us when we told them it was an incredible year-class that in a few years would make the fishing fantastic," Schupp recalls.

As Schupp had predicted, those same fish soon grew to catchable 16- to 19-inchers. Then anglers were all smiles—over the fishing and over the DNR's ability to explain how year-class strength related to fishing success.

**These 11 lakes account for more than 40% of the walleyes caught each year.**

## Other uses

The DNR monitors the 11 large lakes using nets, electrofishing gear, water chemistry testing, and angler surveys. This provides such information as:

- year-class strength,
- the size and age of fish,
- angling pressure and harvest,
- the appearance of new exotic species.

This information is used by fisheries workers to decide how to protect the valuable fisheries and fish habitat in the large lakes. For example, biologists can figure out whether special regulations are working or not based on careful study of changes in fish populations and angling success from year to year.

Through monitoring, fisheries workers have documented the recovery of the lake sturgeon on the Rainy River watershed and Lake of the Woods, have launched the trophy northern pike management regulation on Lake of the Woods, and have documented critical muskie and northern pike spawning habitats on Mille Lacs Lake and Leech Lake.

# Large lake monitoring success story: Rainy Lake

Fisheries workers know that Rainy Lake, a 200,000-acre reservoir on the border Minnesota shares with Ontario, could be a far better fishery than it is today. And that's saying a lot, since Rainy is one of the state's top walleye waters.

But fisheries workers on both sides of the border say the multi-bay lake has been hurt by overfishing and unnaturally fluctuating water levels.

How can scientists say with certainty what is or isn't wrong with Rainy Lake? Because they know what's down there by doing ongoing surveys and assessments as part of the DNR's Large Lake Monitoring Program.

Beginning in 1994, Minnesota set a regulation on Rainy that requires anglers to release all walleyes from 17 to 25 inches and allows them to keep only one fish longer than 25 inches. The regulation has been embraced by most local and visiting anglers, who understand that excessive harvest was hurting the fishery by cropping off medium-sized fish.

Anglers know that over the past two decades, fisheries surveys have shown that the lake's walleye population has not grown. The surveys have also shown that the stagnant walleye population has been caused by overharvest and a lack of spawning habitat. The latter is caused by fluctuating water levels from releases at the dam in International Falls. (To protect the lake's ecosystem, the DNR is advocating that the International Joint Commission, which regulates the dam, alter water level fluctuations to create more natural conditions.)

Using information gathered from yearly gillnetting, seining, electrofishing, and angler creel surveying, fisheries workers estimated the size of Rainy Lake's fish populations. Then they came up with possible ways to create a healthy walleye population.

First they tried stocking, but that didn't work. The lake is so big that stocking fish was insignificant compared to natural reproduction.

Fisheries workers finally decided that the only way to improve the fishing was to protect the fish populations with stricter fishing regulations.

**Rainy Lake could finally become a world-class walleye water.**

"It was simple: Too many walleyes in Rainy were being killed," says Dave Friedl, DNR area fisheries supervisor at International Falls.

Anglers on Rainy understood that they had to let 20-inchers go to build the population up so that they could catch 24-inchers in the future.

"It's been hard on anglers in the short term, but most of them understand what we're trying to do," says Friedl.

If the experiment works, anglers can expect to see increasingly larger fish, and more of them, on the end of their line.

And that, says Friedl, will be when the big lake begins to reach its potential as a world-class walleye water.

# Hatcheries

See back for a hatcheries SUCCESS STORY

Ask anglers what the DNR does to improve fishing and most likely they will answer, "Stock fish."

Stocking, and the associated rearing of fish in hatcheries, is the most visible activity of DNR Fisheries, and it is still one of the mainstays of fisheries management in Minnesota.

## What's involved?

Minnesota has 12 coolwater (walleyes, catfish, muskellunge), and 5 coldwater (stream trout, lake trout, salmon) hatcheries. Stocking the hundreds of millions of fish reared here each year requires the help of almost everyone working in DNR Fisheries.

The main coolwater hatchery activity begins in April when DNR workers net spawning walleyes and strip the eggs and milt, which are mixed together. The fertilized eggs are then taken to the hatcheries, incubated, and hatched. Though some of the tiny fry are stocked a few weeks later, the largest stocking operation comes in the fall. This is when the remaining fish have grown to fingerling size in hundreds of rearing ponds throughout the state and are gathered up and taken to lakes for stocking.

Most coldwater hatchery activity takes place in the fall, when spawn is taken from brown trout. The eggs are incubated through the winter and then the young fish are stocked in the spring or the following fall.

Included in the hatchery program are studies on various strains of stocked fish, pathology work to keep hatchery fish disease free, and research that looks at the effects of stocking on fish populations and on the genetic makeup of naturally reproducing fish.

## Which lakes are stocked?

Years ago, about all it took to get a lake stocked was a phone call to the DNR. Today, fisheries workers stock far more prudently. Before calling in the hatchery trucks, they must first consider the effectiveness of stocking a lake and the effects of stocking on the various fish populations.


Evaluating which lakes merit stocking and which don't is a big job. Each year, fisheries workers conduct ongoing surveys on hundreds of lakes to see how the fish populations are changing and whether stocking is working.

In many lakes—usually the large, wind-swept lakes of northern Minnesota— stocking doesn't appear to do much good. These waters have plenty of natural spawning habitat, and walleyes do just fine on their own.

**Stocking is still one of the mainstays of fisheries management in Minnesota.**

But in other waters—especially southern Minnesota lakes—spawning habitat has been ruined, so stocking can often increase walleye populations there.

## Accomplishments of the hatchery program

As it has for decades, Minnesota continues to lead the nation in the number of walleyes stocked. Among other recent highlights of the state's hatchery program:

- developing the Leech Lake strain of muskies for stocking,
- restoring the lake trout population on Lake Superior through stocking,
- creating new trout fishing opportunities on Arrowhead lakes,
- transfering the New London hatchery, which is used to raise muskies and catfish, from federal to state ownership.

# Hatcheries success story: S.W. Minnesota

"Without stocking, there'd hardly be any walleye fishing in Minnesota south of Interstate 94," says Jack Skrypek, DNR Fisheries chief. According to Skrypek, most lakes in the state's central and southwestern regions lack the spawning habitat needed to naturally produce walleyes.

The conversion of prairies to farmland over the past century in these regions has filled lakes with sediment and nutrients, clogging spawning gravel with silt and causing massive algae blooms that rob water of oxygen.

Most of state's walleye production is aimed at these central and southwestern waters. The clean, large, windswept lakes of the north don't need stocking because they contain so much spawning habitat that walleyes produce plenty of young on their own. But in the south, DNR Fisheries has had to step in as a sort of walleye foster parent, hatching and raising the tiny fish and then placing them in waters no longer suitable for natural reproduction.

In the Ortonville area, for example, area fisheries supervisor Doug Kingsley estimates that stocking accounts for between 75% and 80% of the yearly walleye catch.

"And that's including Big Stone, Traverse, and Lac Qui Parle lakes," he says of the three large South Dakota border waters, which have some natural reproduction.

"If it weren't for those waters, we'd be relying on the hatcheries for pretty much 100% of our walleye catch out here," says Kingsley.

Besides providing fishing that otherwise wouldn't exist, stocking has also helped in the rehabilitation of southwestern lakes.

For example, when local citizens of Sleepy Eye worked with area fisheries supervisor Hugh Valiant to reinvigorate the town's lake, stocking was a major tool.

In the 1980s, the lake was a murky mess, so thick with algae you could stick an arm into the water and lose sight of your fingers. The water stank. People stayed away.

Eager to see the lake restored, the Sleepy Eye Lake Improvement Committee and DNR Fisheries applied for and received Reinvest in Minnesota funds to chemically remove the carp and bullheads. The roughfish had stirred up bottom muck in the shallow lake as they rooted for food. That caused suspended sediment to block sunlight from reaching aquatic plants, which provide oxygen and stablize the bottom from wave action.

With the carp and bullheads gone, Valiant had panfish, perch, catfish, northern pike, and largemouth bass stocked in the lake. The game fish began providing fishing recreation to the town's excited citizens. They also ate up young carp or bullheads that had escaped the fish kill.

Today, says Valiant, Sleepy Eye Lake is producing 24-inch northerns and 3-pound bass.

"Stocking wouldn't have worked if we hadn't first looked at the big picture of the lake ecosystem," he says. "But without stocking, we'd still just have carp and bullheads in the lake."

# Aquatic education

See back for a MinnAqua SUCCESS STORY

The Dilemma: Rising costs, Flat revenue

According to the 1990 U.S. Census, almost every rural county in Minnesota is losing population, while every urban county is gaining.

One result of this urbanization of Minnesota is that fewer kids are growing up near lakes and streams. That could mean fewer kids fishing in the future and fewer citizens working to conserve the state's aquatic resources.

## Help arrives

In 1990, DNR Fisheries created the MinnAqua Program to increase public knowledge about the state's lakes, streams, and fisheries. This nationally recognized fishing education program does more than teach kids and adults to fish. MinnAqua also provides instruction in lake and stream ecology, fisheries conservation, and angling ethics.

One main goal of MinnAqua is to teach Minnesota citizens—especially youth—about the state's valuable aquatic environments, the threats to those environments, and what needs to be done to keep them clean and healthy.

Over the past 6 years, MinnAqua has reached 50,000 kids—more than half of whom are inner-city Asians, African Americans, and Hispanics.

## How it works

Each year, MinnAqua works with scout groups, 4-H, church groups, businesses, resorts, and civic groups to put on more than 350 programs throughout the state.

The two main types of MinnAqua programs are fishing clinics and special events. During the six-hour fishing clinics, trained volunteers or MinnAqua staff teach students about fishing techniques, fishing gear, regulations, ecology, management, ethics, and safety. Participants get a chance to fish, practice casting, and identify fish species.

Special events are short 1- to 5-hour programs that introduce kids to fishing and aquatic ecology.

In both programs, participants get to use free loaner equipment and can take part in fun activities such as fish printing and role-playing. Many programs include a field trip to a nearby lake or stream, where kids get hands-on experience.

MinnAqua also works with schools to set up seminars, with resorts to teach the kids of vacationers, and at sport shows, county fairs, and other events. MinnAqua is even at the Mall of America in Bloomington, where it is a component of the new Underwater World exhibit.

**Over the past 6 years, MinnAqua has reached 50,000 kids—more than half of whom are minorities.**

## Businesses and volunteers

Two keys to the success of the MinnAqua Program have been donations from private businesses and the dedication of volunteers. Each year MinnAqua staff members train 150 volunteers who donate 8,000 hours. Volunteers teach fishing, run special events, repair gear, make tackle, or just lend a hand when needed.

Dozens of businesses—from bait shops to radio stations—have donated time and money to help make MinnAqua one of the most successful aquatic education programs in the U.S.

# MinnAqua success story: fisheries tour packet

Each year, DNR Fisheries gets hundreds of calls from people, particularly teachers, requesting tours of fisheries facilities. Hatcheries are especially popular, because here people can actually see fish, in particular the giant ones used as brood stock.

Fisheries workers are happy to give tours and have always recognized them as a great opportunity to teach citizens about the state's aquatic resources. But until recently, fisheries workers had little information they could give teachers beforehand to make the tours a more effective learning experience for visiting students.

"Thousands of kids were visiting our facilities each year, and it seemed like we were missing a great educational opportunity," says Jack Skrypek, DNR Fisheries chief.

That all changed in 1996, when the MinnAqua staff produced a unique fisheries tour information kit. This large packet, which has been distributed to every hatchery and area office in the state, contains lesson plans, student worksheets, classroom materials, and reference information about Minnesota fishing, lake and stream resources, and fisheries management. Also included are lesson plans, fish diagrams, slides, and activities for students.

Now, when a school calls an area office or a hatchery to schedule a tour, a fisheries worker can send the packet to the teacher beforehand.

"When the kids come to our facilities, they get a better idea of what they are seeing and it starts to make more sense," says Linda Erickson-Eastwood, MinnAqua coordinator.

**"The tour packets made sense because we already had a captive, eager audience, and all we had to do was put together some of our best information."**

—Linda Erickson-Eastwood, MinnAqua Coordinator

Erickson-Eastwood adds that the fisheries tour packets are just another example of how a little planning can do a lot to help satisfy kids' hunger for information about fish and aquatic resources.

"Kids love this stuff," she says. "The tour packets made sense because we already had a captive, eager audience, and all we had to do was put together some of our best information in a format that teachers could use."

# Administration


Some anglers voice surprise that part of the Fisheries budget goes to administration. But it only makes sense that a public entity responsible for a $17 million budget and more than 300 workers cannot run itself. It needs administration.

Administration is not some obscure process carried out by suited executives in closed meeting rooms. It's essential work done by fisheries supervisors throughout the state.

Sure, it involves paperwork and meetings. But that paperwork represents money required to buy equipment, repair survey nets, rehabilitate lakes, and other visibile work of fisheries management. And it's in those meetings that fisheries workers decide on which are the most important fisheries projects, when they should be done, and how.

That's administration—the difficult, necessary, time-consuming work of running any business, organization, or agency.

In addition to fisheries supervisors throughout Minnesota doing local administrative work, a small administrative staff in St. Paul runs the entire state fisheries management system, which includes:

- 317 employees,
- 28 local offices,
- 6 regional offices,
- 17 hatcheries.

## What are typical administrative duties?

Most DNR Fisheries administration is the same work done in any large organization: supervise staff, develop budgets, organize information meetings, do required paperwork, respond to public inquiries, and carry out personnel policies.

In addition, the fisheries administrative staff is called upon each winter and spring to supply information for the legislative session. And each fall, they revise the fishing regulations for the following season.

See back for an administration SUCCESS STORY

To ensure that the work stays focused on goals specified by citizens through their legislators, DNR Fisheries uses a management system containing strategic, long-range, and operational plans. This also is considered administrative work.

Perhaps the most valuable aspect of administration is developing and monitoring proposals and reports for the federal aid program, which brings in $7.5 million each year.

**Administration is the difficult, necessary, and time-consuming work of running any business, organization, or agency.**

## Like any company

No company could survive without top-notch administration. Administration is the work of setting policies, planning for the company's future, forming partnerships with government and other businesses, and attending to legal affairs and public relations.

The same is true for DNR Fisheries. Administrative work ensures that the Fisheries Section carries out the mission that citizens have asked of it. Administration is the process of looking at the big picture of fisheries management to make sure that Minnesota's public natural resources are being managed for the good of all citizens.

# Administration success story: the Fishing Roundtables

DNR Fisheries exists to serve Minnesota citizens who want their state's valuable fisheries managed wisely, cost-effectively, and professionally.

But how do fisheries managers know exactly what citizens want? And how do citizens learn what can and can't be accomplished with fisheries management?

The answer, since 1991, has been the Fishing Roundtables. Each January for the past 6 years, roughly 50 people representing a wide range of fishing-related interests gather for two days to talk about the state of Minnesota's fishing.

Anglers, guides, lake association members, outdoor writers, resorters, tackle manufacturers, and legislators are among the participants. DNR workers are there only to provide information and to listen.

"The roundtables help us focus fisheries management and plan for the future," says DNR Fisheries chief Jack Skrypek.

Among the topics discussed during the first six roundtables:

- the need for more habitat improvement and protection,
- the need for more aquatic education programs,
- tailoring fisheries management to individual waters,
- the declining size of fish in Minnesota,
- the threat of exotic species.

After discussing the topics, roundtable participants come up with a series of specific recommendations. In 1992, for example, DNR Fisheries was charged with beginning experiments to see how various regulations work to improve fishing quality on different lake types. DNR workers responded by setting up experiments on 45 different lakes throughout Minnesota.

"We hope to learn from the experiment how to do the type of individual waters management the roundtable has recommended," says Skrypek.

What role does administration play in the roundtables? Administrative duties include setting up and facilitating the meetings and seeing that the recommendations are carried out.

**Could the Fishing Roundtables have been done without the DNR conducting administrative work? Not likely.**

Could the Fishing Roundtables have been done without the DNR conducting administrative work? Not likely. That's because setting up meetings such as these <u>is</u> administration.

Administration is a basic necessity in any organization, and the nationally recognized success of the Minnesota Fishing Roundtables is a tribute to the need for and value of administrative activities.

# Coordination and planning

See back for a coordination and planning SUCCESS STORY


Coordination and planning are essential parts of any successful business. 3M is big on planning. So are Microsoft, General Motors, and IBM.

Coordination and planning are crucial for successful public agencies, too. And the DNR Fisheries Section is no exception. Planning keeps the Section on track and makes sure that only the most effective programs and activities are being used. Coordination ensures that the right hand knows what the left hand is doing. It helps avoid costly inefficiencies and takes advantage of beneficial partnerships with other DNR sections and agencies, and with citizens, businesses, and conservation groups.

## Coordination

Fisheries management affects everyone from anglers and resorters to local governments and state agencies. And vice versa—what citizens, businesses, and local governments do often affects fisheries management.

To ensure that all people interested in Minnesota's fisheries are talking to each other, fisheries workers spend time coordinating. That means talking with anglers and lake associations, and meeting with local units of government and other state agencies.

In the late 1980s, for example, fisheries workers in Kanabec County brought together a broad range interests to reclaim Knife Lake and to begin restoring its watershed. The project was so big and complicated that it could only be accomplished by extensive planning and by involving dozens of different public and private organizations. The results of this coordinated effort: a restored walleye fishery, cleaner water, and a community that understands the link between the two.

## Planning

Everyone plans—from deciding where to go with your career to figuring out what lures to bring on the next fishing trip. The idea behind planning is that it's smart to take some time to think about what you're about to do before rushing off to do it. Planning also means periodically looking back at what you've done to see if you could do it better the next time.

Fisheries workers have always done planning and evaluations. But only in the past 20 years have planning and evaluation been a key part of fisheries management.

**Coordination and planning are essential parts of any successful business.**

The Lake Management Planning Guide, developed in 1983, was a planning milestone. This began a process of writing what are called lake and stream fisheries management plans, which spell out specific goals and objectives for individual lakes and streams. An example might be to improve catch rates for walleyes by 15% over the next four years. The planning guide calls for fisheries workers to compile the best available information for each water in order to tailor fisheries management activities to its biological potential.

DNR Fisheries embraced formalized planning more strongly in 1985, when it began using detailed planned management and cost-accounting systems. That's also when the Section began doing long-range planning.

The management and accounting systems tie together specific day-to-day activities with general long-term goals. Now DNR Fisheries can track and code daily activities, linking them to overall plans and strategies. This in turn leads to more effective use of license dollars.

# Coordination and planning success story: experimental regulations

There's no way the DNR could conduct experimental regulations—which are designed to increase the average size of fish—without extensive coordination and planning.

Even though the fishing in Minnesota is still great, especially compared to what most other states provide, average fish size has declined. The reason: As more and more anglers fish with increasingly effective equipment, they crop off too many game fish before the fish can reach a larger size.

Many anglers have asked the DNR to increase fish size by managing more lakes and streams with experimental regulations, which reduce fish harvest and thus increase the size of fish. The concept is simple, but doing it effectively statewide is another matter. The following are some major obstacles:

- Fisheries workers don't know what types of regulations work best for various fish species.
- Minnesota's lakes and streams vary tremendously across the state. What is successful in one area may not work someplace else.
- Anglers disagree on where, when, and even if experimental regulations should be used.

Any one of these factors could torpedo the use of experimental regulations. In combination, these factors make carrying out the regulations seem nearly impossible.

However, by taking a planned, coordinated approach, DNR Fisheries has been able to work with anglers and others to begin using experimental regulations in order to increase fishing opportunities.

Lake and stream fisheries management plans have helped fisheries workers determine the best candidates for experimental regulations. Coordination among DNR Fisheries and various fishing-related interest groups has increased understanding of and support for experimental fishing regulations. And by using an innovative ecological lake classification system, fisheries managers have been able to develop a way to determine ahead of time how various regulations will likely work on different waters.

DNR Fisheries has also worked closely with DNR Enforcement. Experimental regulations don't work if they aren't enforced, and a key element of the project will be to beef up enforcement by DNR conservation officers.

Perhaps most importantly, DNR Fisheries successfully obtained funding from the Legislative Commission on Minnesota Resources to support the statewide experimental regulations program. Much of this success was due to active support from fishing groups.

And because fisheries workers had taken the time to thoroughly plan out the project's evaluation, they are confident that once the experiment is over they will be able to determine the success of experimental regulations on various lake types.

The heart of the experimental regulations project is information gathered from scientific monitoring and analysis. But without thorough coordination and planning, this and other projects would never get off the ground.

# Commercial fisheries

See back for a commercial fisheries SUCCESS STORY


As a state abundant in lakes and rivers, it's only natural that Minnesota is home to a thriving commercial fisheries industry. Among the different activities lumped under the category of commercial fisheries are netting herring on Lake Superior or buffalo on the Mississippi River; raising game or food fish (aquaculture); harvesting and selling live bait such as minnows; and harvesting frogs, turtles, and mussels.

Because commercial fishing can affect Minnesota's aquatic resources, it is regulated by the DNR. The agency's role is to make sure the commercial harvest and sale of fish and aquatic wildlife is done legally and without harming fish populations or aquatic environments. This is done primarily by monitoring the activities of commercial fisheries operations.

## Pioneer industry

Commercial fishing is as old as the state itself. Among Minnesota's first businesses were those that dealt in the harvest and sales of fish—particularly lake trout on Lake Superior. At the turn of the century, Two Harbors, Grand Marais, and other villages along the North Shore thrived due to a booming commercial fishing industry.

Though today relatively few commercial fishing operations remain on Lake Superior and elsewhere, other commercial fisheries industries are thriving. Raising fish and then selling them to state agencies or private groups for stocking, or to restaurants and supermarkets for food, is a growing business. And Minnesota's live-bait industry continues to grow, generating up to $28 million each year in the harvest and sale of leeches and minnows.

DNR Fisheries works closely with commercial fisheries businesses. Fisheries workers administer commercial harvest permits, help with legislative rule-making, and monitor fisheries that may be affected by commercial harvest. They also provide important technical information about rearing fish, fish diseases, and other topics.

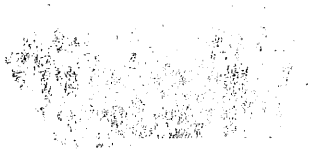
The DNR's Enforcement and License units also assign staff to work with commercial fisheries operations. DNR License Bureau workers administer the licensing of commercial fisheries operations, and DNR conservation officers ensure that the operators conduct their business according to state laws.

**The DNR makes sure commercial fishing is done legally and without harming fish populations.**

## Accomplishments

Over the past 20 years, DNR Fisheries has ceased removing roughfish from lakes (since removal turned out not to be worth the effort) and has begun licensing private operations for rough fish commercial harvest. Other accomplishments:

- conducted an assessment of the live bait industry's boost to the state economy,
- developed new regulations for private fish hatcheries,
- developed new crayfish and mussel harvest regulations,
- formed new partnerships with commercial fishing operations to revise archaic laws and find ways to help the commercial fishing industry.



# Ecological Services

See back for an Ecological Services SUCCESS STORY


Ecological Services is not in the Fisheries Section; it is its own section within the Division of Fish and Wildlife. Yet it merits mention here because the work done by Ecological Services directly benefits Minnesota fisheries and anglers.

As the name implies, Ecological Services provides technical *services* for management related to lake and stream *ecology*.

"We provide tools that promote ecological stewardship of the state's aquatic and other natural resources," explains Lee Pfannmuller, Ecological Services Section chief.

What types of tools? To provide an example, Pfannmuller points to the Section's Stream Habitat Protection Program. "This is basically an information tool that helps us understand how much water fish need in streams and rivers," she says. "With this information, citizens can then decide how much water should be allotted to Farmer A, Farmer B, and so on—without threatening the fish population."

Though most Ecological Services programs benefit Minnesota fisheries, only a small part of the Game and Fish Fund—roughly 2%—goes to support Ecological Services programs.

## Ecological Services programs

Most of Ecological Services's 20 programs directly support the protection of fish and aquatic habitats. Among these programs are:

**Lake mapping**

Each year, Ecological Services workers sound the depths of roughly 40 lakes. Over the years they have used this information to produce more than 4,300 maps available to anglers and fisheries workers.

**Stream habitat protection**

Workers in this program determine the amount of water and other habitat components needed by fish and wildlife in streams and rivers. Then they provide their technical expertise to hydropower dam operators, irrigators, municipalities, and other developers whose work could threaten the fish in those waters.

**Environmental review**

Ecosystem guardians in this program scrutinize plans for large public and private developments to indentify activities that threaten valuable fish and wildlife habitat. Then they work with the developers to find ways to reduce or avoid that damage.

**Aeration system management**

This program oversees the safe operation of aeration systems, which improve fishing opportunities and increase bait-fish production on shallow lakes.

**Mississippi River monitoring**

Ecologists in this program study how the river ecosystem is affected by activities and projects such as the federal lock and dam system, power boating, and flooding.

**Lake Superior habitat restoration**

This program brings public and private entities together to identify the great lake's most important fish habitats and find ways to restore them.

**Disease prevention and containment**

Scientists in the Ecological Services Section's pathology laboratory regularly inspect hatchery trout to protect reared and wild stocks from deadly diseases.

**Only a small part (just 2%) of the Game and Fish Fund goes to support Ecological Services programs.**

# Five Ecological Services success stories:

These five success stories provide examples of what Ecological Services does for Minnesota's fisheries and anglers.

◆ **Dam detectives:** Smallmouth bass anglers who fish the St. Louis River let out a cheer in 1996 when they learned of a federal agency's ruling that Minnesota Power must maintain water flow levels more favorable to fish, furbearers, and invertebrates.

The Federal Energy Regulatory Commission's ruling followed most of the recommendations made by Ecological Services river flow experts, who for the previous six years had studied the harmful effects of the company's four dams and five reservoirs on the St. Louis River ecosystem, particularly on its smallmouth bass fishery.

◆ **Lake maps:** You can thank Ecological Services every time you catch a fish at a depth pinpointed on a lake map. Each year, workers sound the depths of roughly 40 new lakes using sonar recorders or new Global Positioning System equipment. The information, which they then transfer into a map database, has been used to produce maps of more than 4,300 lakes.

◆ **Aquatic plant management:** Lakeshore owners eager to eliminate so-called "weeds" (which are usually native vegetation providing crucial fish habitat) in front of their property must go through the Ecological Services Section's permit staff. These lake habitat guardians work closely with local fisheries workers to review hundreds of permit applications each year. They also explain to lakeshore owners the value of aquatic plants and encourage these citizens to remove as little vegetation as possible.

◆ **Red River Environmental Impact Statement:** Anglers come from as far away as Missouri and Texas to fish the Red River of the North, on the Minnesota-North Dakota border, which offers some of the best catfishing in the Upper Midwest.

Threatening this valuable fishery are plans to build dozens of additional dams on the river's tributaries.

However, thanks to the diligence of ecologists in the Ecological Services's Environmental Review Program, these plans are being reviewed to also take into account the needs of the river's ecological components—such as its monstrous catfish. An Environmental Impact Statement on the proposed projects shows how the dams would affect the river ecosystem and the fish and wildlife in the Red River watershed.

**Ecological Services has produced more than 4,300 Minnesota lake maps.**

◆ **Harmful exotic species management:** Foreign invaders such as the ruffe, white perch, and round-nosed goby could potentially harm many Minnesota fisheries. At work keeping these and other harmful exotics from Minnesota waters is the Harmful Exotic Species Management Program. The program is nationally recognized as the nation's leader in the control and containment of destructive foreign invaders.

# Enforcement

See back for an enforcement SUCCESS STORY


The next time you catch a fish, consider thanking your local DNR conservation officer. Due to the efforts of these dedicated workers, fishing regulations are enforced, thus helping to protect Minnesota fish stocks from year to year.

Fishing regulations are set to protect fish populations, to make fishing fair and equitable, and to ensure public safety. But the laws don't work if they're not enforced. That's the job of the DNR Enforcement Divison.

## More than wardens

As their title implies, DNR conservation officers do far more than act as the "game warden" of days past. These licensed peace officers (the same as police, sheriff's deputies, and state troopers) enforce fish and wildlife laws and also regulations pertaining to wetlands, outdoor recreation, and solid waste disposal.

Enforcement is a key factor in the management of Minnesota's nationally recognized sport fishery. Without a strong and visible enforcement presence, laws intended to protect habitat and fish populations could go unheeded, putting these valuable resources at risk.

Take for example the daily limit on sunfish. When anglers happen upon a spot where sunnies are congregating, they can at times catch 100 or more fish. The 30-fish limit is intended to protect sunfish populations from overharvest by greedy or unethical anglers. But a limit has no meaning unless anglers are convinced it will be enforced. If anglers don't believe they will be caught breaking a fishing law, some will be tempted do so. The result: fewer sunfish remaining for other anglers.

## 94 walleyes

And anglers do get caught. For example, in 1996 an Illinois man volunteering as a campground host at the Superior National Forest was picked up for possessing 94 walleyes over his limit. He had to pay a total of $6,282 in fines and restitution. When word gets out about these and other busts, outlaws think twice about poaching.

Another key role of conservation officers is to enforce lake-specific experimental regulations. These are set by DNR Fisheries in order to provide better fishing.

## Local presence

Enforcing fishing laws on 5,400 game fish lakes and 15,000 miles of fishable rivers is no easy task. There are only 150 conservation officers to patrol 87 counties and keep a watchful eye on more than 2 million anglers.

Moreover, the number of field officers patrolling Minnesota has increased by only 3 since 1940.

**It's common sense that fishing regulations, which protect fish populations and create better fishing, simply won't work if they're not enforced.**

Despite their lack of numbers, conservation officers are well known throughout many local communities. They take part in kid's fishing days, assist with youth firearms training, and often staff booths at county fairs. In many towns, the local CO is as familiar as the sheriff.

Conservation officers are often the only DNR official that many Minnesotans ever meet. That's one reason the officers receive training in public responsiveness, cultural sensitivity, and other sociological fields.

# Enforcement success story: experimental regulations

Okay, it's not quite a success story yet. But with the help of the DNR Enforcement Division, the Fisheries Section's attempt to increase fish size using customized harvest regulations could be the most talked-about fish management achievement of the next 10 years.

What's happening is this:

◆ The average size of fish has been declining in many lakes. And the number of large, trophy-sized lunkers has dropped, too.

◆ Anglers have told the DNR in no uncertain terms that they want the agency to increase the average size of fish they catch.

◆ The decrease in fish size is the result of an increasing number of anglers fishing a set amount of water using increasily effective fishing equipment (Global Positioning Systems, sonar, depth finders, graphite rods, etc.). The result: On many waters, fish are caught out as soon as they reach "keeper" size. Fewer remain to grow up to be medium-sized fish, much less lunkers.

◆ To create more big fish, DNR Fisheries has begun an experiment to see how well different harvest regulations work to protect different species of fish of certain sizes.

◆ But because different fish species respond to harvest regulations differently, and because lakes have widely varying ecological characteristics, blanket statewide regulations won't work. The regulations must be custom-fit to specific lakes and fish species. And this is where the DNR conservation officers come in.

◆ All these new customized regulations won't be worth a darn if there aren't conservation officers out there enforcing them. As one fisheries manager said, "Just a few anglers who disregard an experimental regulation could ruin its benefits to the fishery." In other words, without conservation officers, anglers have little chance of ever seeing a reverse in the trend of declining fish size.

**Without DNR conservation officers, anglers have little chance of ever seeing a reverse in the trend of declining fish size.**

◆ In the future, similar lake types could have specific fishing regulations that account for the fish species, fishing pressure, and ecological characteristics of various lakes. This would take some getting used to by anglers accustomed to one-size-fits-all regulations. Because they meet with so many anglers on the water and at boat ramps, DNR conservation officers would be essential not just to enforce the new laws but also to explain how they are intended to work and their value to Minnesota fishing.