

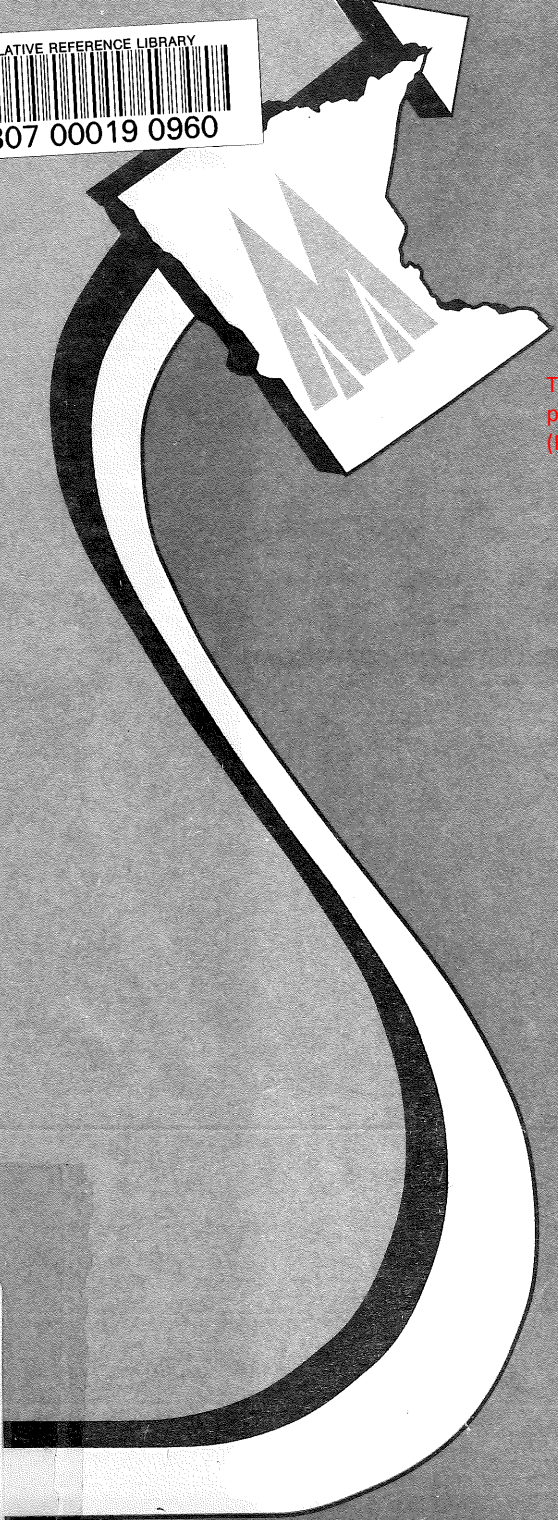


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DIRECTIONS

For Natural Resources



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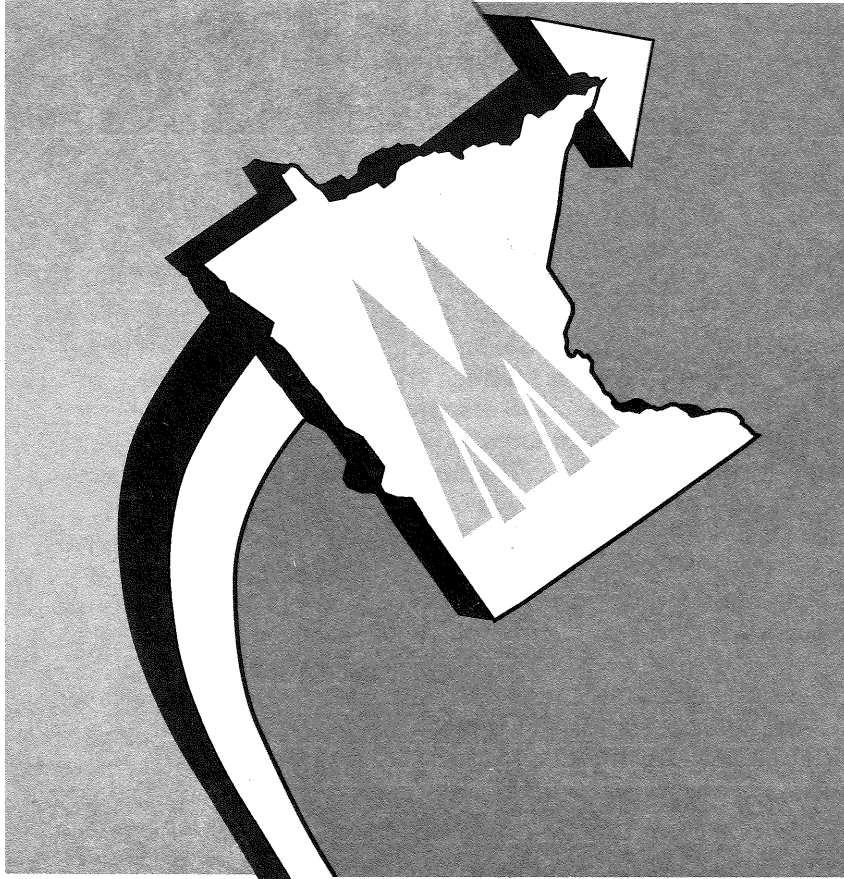
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ABOUT THIS REPORT



DIRECTIONS for Natural Resources

A strategic path for Minnesota's
resources into the 1990s

Directions for Natural Resources is the strategic planning document for the Department of Natural Resources. It represents the culmination of a year-long, department-wide effort to identify the issues on the horizon for Minnesota's resources, and to lay out strategies and action steps to accomplish the DNR's mission into the 1990s.

Several new components were added to the process used to generate issues this year. First, Regional office staff were involved from the beginning, ensuring that the Regional perspective on Minnesota's resources and DNR management was well represented. Second, the Department's Senior Managers convened twice during the process to review the issues. And third, the Action Planning phase led directly into the biennial budgeting process, showing a direct link between planning and budgeting.

We start the report this year, as last, with a "Message from the Commissioner," which highlights recent accomplishments and points to the future direction of the DNR. Following this, there is a message from Governor Rudy Perpich. And then,

natural resource, administrative and regional issues have been organized into ten sections, each with:

- an introduction, focusing on accomplishments over the past biennium
- a description of the major issues
- a long-term goal that summarizes where the DNR is heading and how the Department proposes to address the issues presented in the section
- a listing of strategies and action steps that the DNR will initiate in addressing each goal.

The Department would like to hear your opinions of the ideas outlined in this report. You can let us know what you think by writing or calling us at the following address:

The Department of Natural Resources
500 Lafayette Road
St. Paul, Minnesota 55155-4010
Toll Free: 800-652-9747 outside
the Twin Cities area
Twin Cities: 296-6157

MESSAGE FROM THE COMMISSIONER

Two years ago I reported to you that the dual challenge of the Department of Natural Resources was to balance resource use with the preservation of our natural heritage. That challenge is reflected in the Department's mission: *To serve present and future generations of Minnesotans by professionally managing our rich heritage of fish, wildlife, waters, wetlands, forests, prairies, minerals, public lands and other natural resources, in order to preserve and enhance our environment, economy and quality of life.*

I am proud to tell you that despite the increasing complexity of natural resource management, the Department continues to live out its mission and is stronger organizationally.

Significant accomplishments last biennium include: being at the center of activity during the serious summer of 1988 drought. DNR provided information on water levels and allocations to the public and worked with numerous interests to fairly manage Mississippi River flows. That same summer we responded to a 60% increase in Minnesota fire suppression demands while supporting fire fighting efforts in Western states.

We are a leader in the effort to diversify the state's minerals economy. An Iron Ore Cooperative Research Committee and industry advisory committees were established, and a ten-year Mineral Diversification Plan was written.

In the area of natural resource law enforcement we reorganized the Special Investigations Unit and established a specialty marine unit on Lake Superior. In an effort to protect fish and wildlife environmental values, we expanded our scientific approach to habitat management while improving relationships between public and private interests.

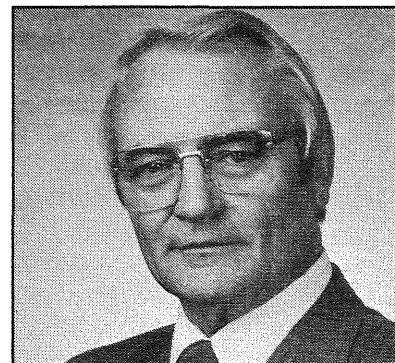
We renewed our effort to better serve the public by acknowledging that Minnesota citizens have a right to ask questions and get answers. We realized that to be fully responsive to the public, we must provide effective leadership for our employees, recognize them for excellent work, and provide them with the information, training and equipment necessary to do their jobs.

During the next biennium, we plan to continue our commitment to improved public service and Department management. We will pursue several resource management initiatives. The forest products industry is planning major expansions which will require us to intensify forest management activities. Initiatives in water management will include enhanced groundwater management, water allocation research, and local water planning assistance. There is great promise in potential gold and platinum development, as well as specialized uses of Minnesota's clays.

We will strive to better coordinate and develop new elements of our outdoor recreation system, such as parks, trails, public accesses, canoe and boating routes and forest campgrounds. Our intent is to foster some specialization of Conservation Officers to better serve certain recreational users, and provide other specialized training to officers.

Our fish and wildlife program will continue its cooperative efforts with private parties through such efforts as the critical habitat matching element of the Reinvest in Minnesota Program. Last, but not least, we will cooperate with the Legislature's "Minnesota Future Resources Commission" to implement requirements of the Environment and Natural Resources Trust Fund. The overwhelming support for this measure at the polls clearly makes this a priority.

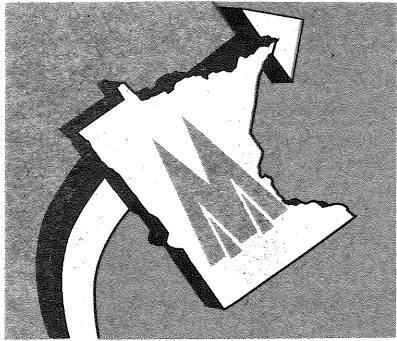
I welcome your response to this report. Please let me know how you think we're doing, and feel free to offer suggestions for improvement.



A handwritten signature in dark ink that reads "Joseph N. Alexander".

Joseph N. Alexander
Commissioner
Department of Natural Resources

GOVERNOR'S MESSAGE



As we move into the 1990s, our state and its people are becoming increasingly concerned about natural resource issues which are vitally important to our citizens and to future generations of Minnesotans.

In the 1988 election, the people of Minnesota endorsed passage of the Environment and Natural Resources Trust Fund by a margin of greater than 77%.

This has sent a strong and clear message to our state and its leaders that responsible management of the state's resources should be at the top of our policy agenda.

Department of Natural Resources Commissioner Joe Alexander has pointed out that while tremendous opportunities for improvement exist, there are

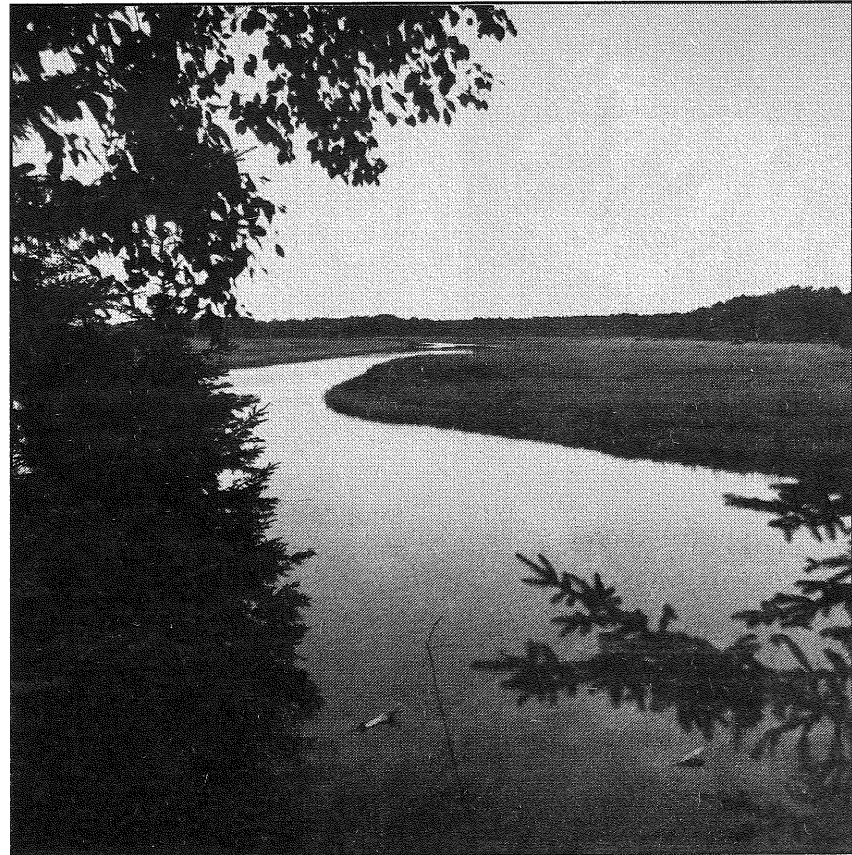
many difficulties and challenges that lie ahead as well. Compiling and using better data on water quality is just one example of a key pending issue.

I am pleased to report that the Department has effectively moved ahead to become more responsive to public resource users and improve the overall efficiency of the agency.

The Department's current emphasis on interdisciplinary cooperation and strategic planning are improvements of which its managers and front-line staff can be proud.

In 1984, I appointed a special Citizen's Commission to Promote Hunting and Fishing in Minnesota. Its message is relevant today: If we do not begin to reinvest in the future of our state's natural resources, fish and wildlife populations will continue to decline. This will result in the diminished prosperity of the state's billion dollar, outdoor recreation industry and a decline in the number of tourists who visit here.

The funding of \$38 million for the Reinvest In Minnesota (RIM) program from 1987-88 was a



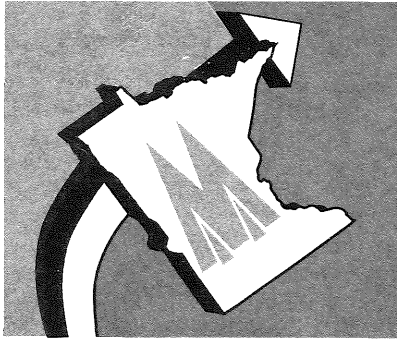
positive start in this direction, including the acquisition and development of fish and wildlife habitat.

By supporting the goals of the Environment and Natural Resources Trust Fund, and by continuing the improvements made in the implementation of

these programs by the Department of Natural Resources, we are beginning to achieve our common goal of effective natural resource management to benefit our state for years to come.

Rudy Perpich, *Governor*
State of Minnesota

MINERAL RESOURCES



Accomplishments

Last biennium the Department led efforts to accelerate diversification of the state's minerals economy. These efforts included research to improve efficiency in the iron ore and taconite industry, continued stimulation of exploration activity for nonferrous minerals, and activities to strengthen and expand the state's existing industrial minerals sector.

- Wrote ten-year Mineral Diversification Plan.
- Formed industry advisory committees to aid Minerals Coordinating Committee in selecting and planning projects.
- Formed Iron Ore Cooperative Research Committee.
- Conducted process efficiency research for the taconite

industry and obtained encouraging results.

- Held largest-ever mineral lease sale.
- Gathered and mapped new geologic data to guide companies' exploration.
- Conceived of and promoted a project to simulate a permitting process for new nonferrous metallic minerals proposals.

Iron Ore and Taconite Industry

Minnesota's iron ore and taconite industry has the potential to become more competitive in world markets through development of production efficiencies and adoption of new processes to add value to iron ore and taconite. The Iron Ore Cooperative Research Committee has sponsored research by the state and industry to improve pellet quality and lower product costs.

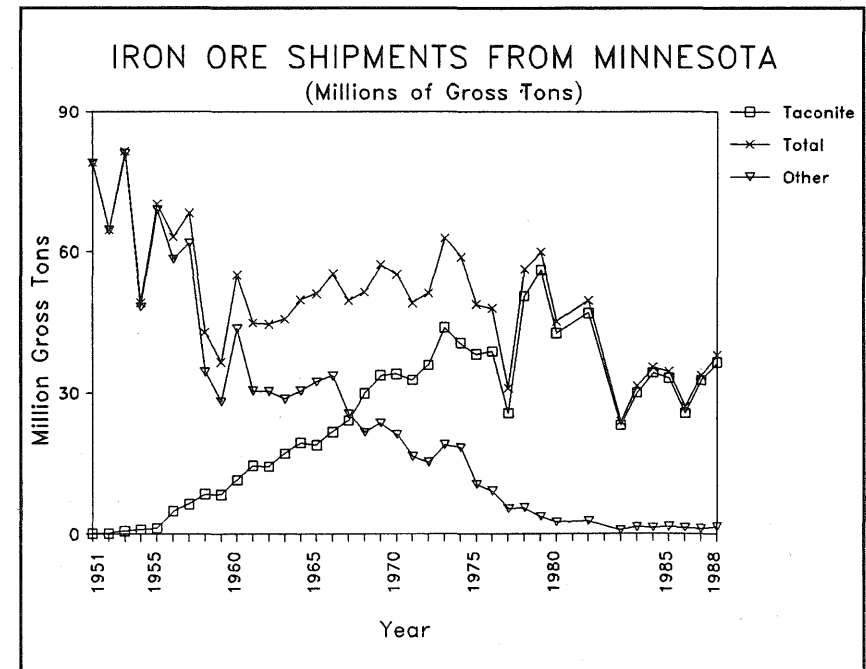
Value-added technologies for the taconite industry are also being assessed. For example, it may be feasible to produce "hot metal" or slabs in Minnesota from our taconite pellets, rather than shipping the pellets elsewhere for processing.

Unrealized Potential for Nonferrous Metallic Minerals

The state is richly endowed with a geology that holds potential for development of a wide variety of mineral commodities. The state's bedrock resources resemble those in Canada, Africa, and Australia where significant metallic minerals development has occurred. For example, in neighboring Ontario, a prosperous gold mining industry has been developed in the Precam-

brian greenstone belts that extend southward into Minnesota. Other geologic terrains have potential for base metals such as copper, nickel, lead, zinc, gold, chromium, cobalt, and titanium.

While the ultimate goal of the Department's nonferrous metallic minerals program is the discovery of a mineable deposit, exploration activity by itself contributes millions of dollars each year to Minnesota's economy. The Department will



MINERAL RESOURCES

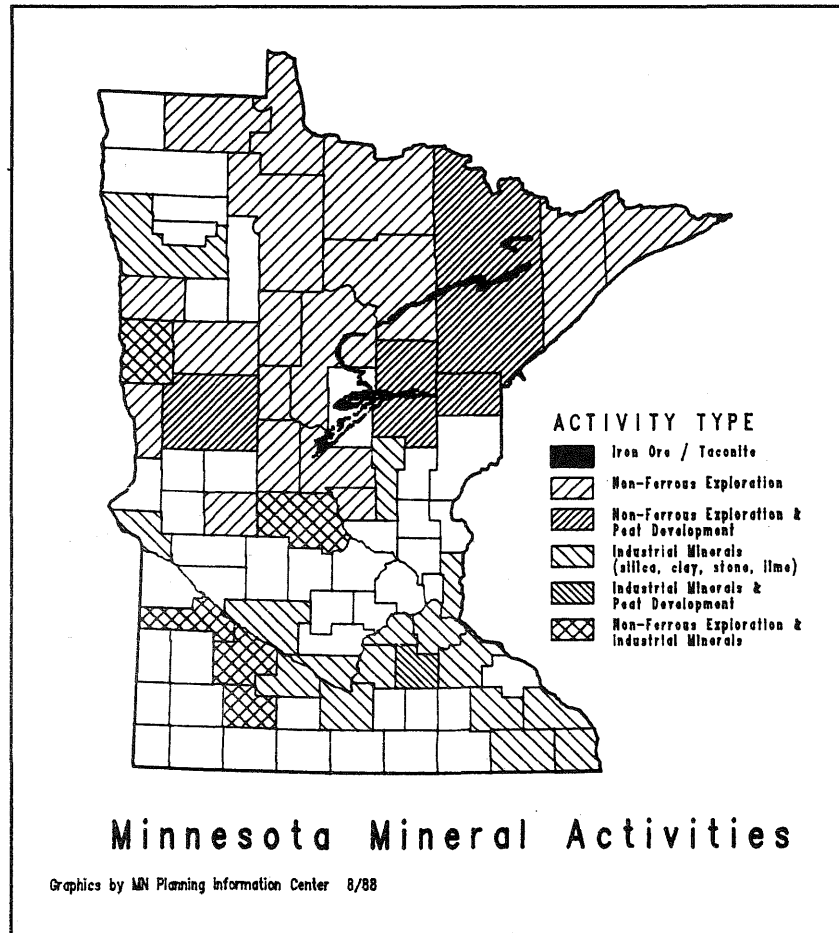
continue to stimulate exploration by making land available, providing geologic information, and developing a regulatory framework for development.

Industrial Minerals

To diversify its industrial minerals industry, Minnesota must identify useful minerals and products that are not currently mined or produced in the state. Examples are sandstone, carbonates, diamonds, and high-tech ceramics from Minnesota clays. Industrial minerals such as sand and gravel, peat, industrial sand, dimension stone, and lime already contribute significantly to the state's economy. To realize the potential of the state's industrial mineral resources, resources must be inventoried and marketing efforts must be expanded.

GOAL

Increase and diversify the sources of revenue and employment from state-administered mineral rights while maintaining environmental quality. Preserve the iron ore/taconite industry, and expand exploration and development of nonferrous metallic minerals, industrial minerals, and peat.



Strategies for Action

1. Support the existing iron ore mining industry

- Fund additional cooperative research on pellet quality and cost reduction.

- Evaluate royalties paid by the taconite industry and tax reduction tied to capital investment.
- Develop less costly methods for mineland reclamation.

- Expand the industry through value-added processing by evaluating and testing new technologies for iron and steel production.
- Develop public education materials to demonstrate the importance of a viable industry.
- Seek new markets for Minnesota's ferrous mineral commodities.
- Protect the industry through federal/state cooperative efforts directed at transportation costs, imports and quotas, and research.
- Create an interstate work plan aimed at increasing the utilization of Minnesota's mineral resources.

2. Accelerate exploration for nonferrous metallic mineral deposits

- Make land available for exploration by holding more frequent lease sales, identifying ownership of mineral rights, and examining alternative leasing systems.
- Accelerate the provision of geologic information that will aid private exploration by continuing geologic research, drilling, and mapping and expanding geochemistry and geophysics projects.

Mining Simulation Project Solves Problems Before They Happen

Four fictional mines in northeastern Minnesota -- an open-pit gold mine, an underground gold mine near a peat land, a platinum mine, and a copper-zinc mine -- will help state agencies, environmental groups, and the mining industry assess state regulations for metal mining.

Although these mines are fictional today, they could someday be fact. Exploration geologists have discovered promising traces of gold, platinum and base minerals, such as copper and zinc, in Minnesota rocks. About 40 mining companies are now searching for mineable deposits in northern Minnesota.

Discovery and development of valuable minerals would create jobs and boost our state's economy. It also would affect our land, air, water, and wildlife.

In anticipation of a discovery, the DNR, the Pollution Control Agency, and several mineral exploration firms and environmental groups have undertaken a unique mining simulation exercise. Representatives of these groups will walk through the process of reviewing a mining permit before it is needed.

By doing so, they hope to identify critical environmental concerns and procedural issues.

This summer the representatives will report observations to the Legislature and the Blandin Foundation, which is helping underwrite the project. If necessary, they also will recommend ways to strengthen environmental safeguards.

The mining simulation project demonstrates a cooperative spirit between state agencies, environmental groups, and the mining industry that benefits all Minnesotans.

Rudy Perpich, *Governor*
State of Minnesota

Reprinted from *The Minnesota Volunteer*,
January-February, 1989 issue

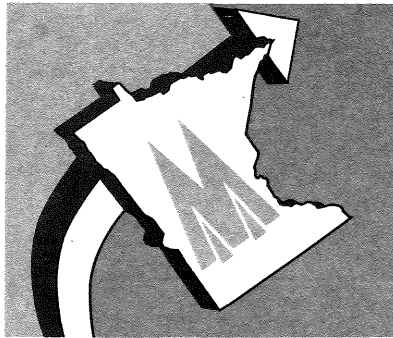
- Develop the regulatory framework for nonferrous mineral development by conducting environmental studies, developing an environmental review process for development proposals, and evaluating options for reclamation of mining lands.

3. Strengthen and expand the industrial minerals sector

- Conduct regional inventories of industrial minerals to evaluate currently marketed commodities and identify potential resources.
- Initiate marketing and product research and development by identifying producers and consumers in Minnesota and elsewhere, identifying product specifications for commodities and comparing them with available resources, and identifying new and value-added products.
- Evaluate the environmental impacts of industrial minerals developments by assessing the impacts of mining kaolinite, sand, gravel, and other minerals.
- Develop options for reclamation standards and rules for mining industrial minerals

- other than peat.
- Evaluate and promote techniques for mitigating the environmental impacts of industrial minerals mining.

WATER RESOURCES



Accomplishments

Minnesota has long been viewed as a water-rich state, but the 1987 flood in the metropolitan region and the 1988 drought have brought a new awareness of these issues. Because of the importance of water to so much of Minnesota's economic base - agriculture, forestry, mining, industry and tourism - water management has become one of the most crucial natural resource concerns of this decade. Some major accomplishments in the management of water resources include:

- Effective response to the serious drought during the summer of 1988.
- Implementation of the flood damage reduction program.
- Providing assistance to those affected by the 1987 metropolitan area "super storm."
- Completion of the 404 Water

- Quality Delegation Study.
- Completion of the Bemidji-Bagley Groundwater Study.
- The removal of deadly dams from the Crow River.
- Promulgation of new shoreland rules.

Local Water Planning and Management Assistance

The local water planning process offers an opportunity to develop a coordinated local/state part-

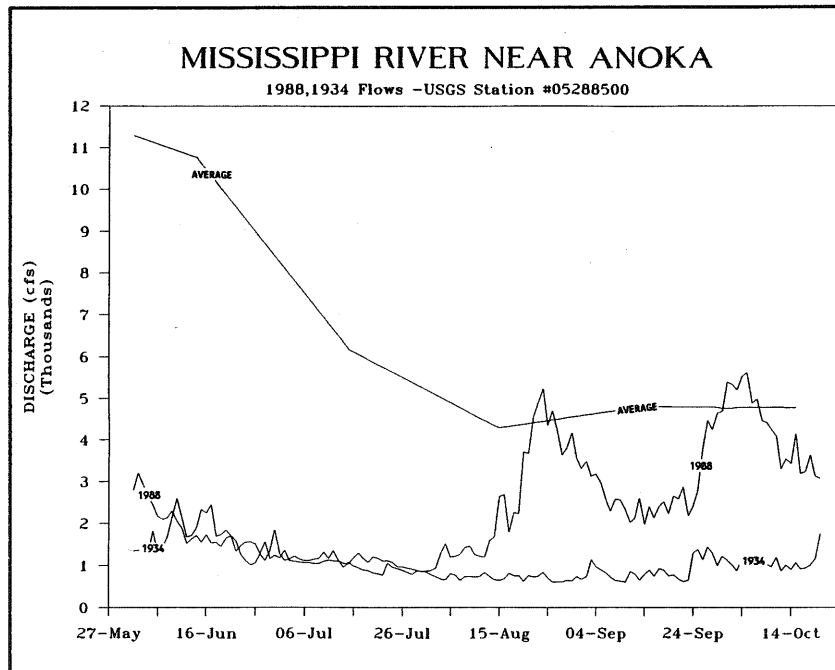
nership for water resource management. While counties and watershed districts are developing local water plans, which contain local goals and objectives, state agencies also have an important role in local water planning efforts. Many water management programs are implemented through statewide programs and much of the water resource data is collected by state and federal agencies. The DNR will develop technical information and assistance for local water planning efforts.

Surface Water Management

Over the years, Minnesota has encountered problems that affect the state's most highly prized recreation and tourism attractions - our lakes and rivers. Among the difficulties are fluctuating lake levels, unwise shoreline development, shoreline erosion, declining water quality, and conflicts between uses of the water surface.

Climatology and Data Management

Minnesota's precipitation monitoring network is made up of many volunteer observers. Interpretive reports are produced weekly and for each major climatic event such as a flash flood or major storm. Long-range trends are documented through data housed at the DNR's State Climatology Office. Because of the significance of climate to many state programs, the Climatology Office contributes significantly to planning and program development activities for natural resource management.



WATER RESOURCES

Data management activities for water resources have become a focal point for cost savings and more effective use of staff time. Computerized data bases have been developed or are under way that provide hydrologists with historical information about lakes or permitted activities on a particular lake or stream. With each new data base developed, there is created an accelerating demand for more sets of data to be computerized.

Groundwater Management

Groundwater is used by 70% of Minnesotans as a source of drinking water, and it supports major economic activities such as irrigation and industry. But better groundwater management in Minnesota is needed.

Some cities have lost their water supplies due to contaminated wells. Pumping groundwater for activities such as irrigation is depleting streamflow in some areas, reducing recreational use and adversely affecting fish and wildlife habitat. During periods of drought, such as in 1988, problems occur with wells. There are areas where conflicts

have been frequent over access to, and use of, groundwater from buried drift aquifer systems. There is a statewide need for better quantitative information about groundwater supplies.

Because of the complexity of these multiple problems, coordinated action at both the state and local level is needed to effectively address them.

Dam Safety

Existing dams are periodically inspected, and funds are administered for repair of Minnesota's aging inventory of publicly owned dams, more than 300 of which are in state custody.

Plans for new dams and repair projects are evaluated according to state Dam Safety Rules. In recent years, two dangerous old dams have been removed, and since 1978, 170 publicly owned dams have received state assistance. New dam safety funding requests are made based on the urgency of the needed repairs.

Water Allocation

The DNR regulates the amount of water used for commercial,

industrial, municipal, agricultural and other purposes. Occasionally, water appropriations from rivers, streams, and ditches have exceeded the amount of water available, as experienced in 1988.

With increasing water withdrawals in many parts of the state, potential out-of-state diversion, and the possibility of seasonal or long-term drought conditions, this problem could expand rapidly. An effective mechanism, such as water allocation planning, must be developed to balance water supplies and diverse demands.

Drainage

Minnesota wetlands are still being drained at the rate of 2% to 3% annually. Recent changes to the Minnesota Drainage Code (Minn. Stat. Chapter 106) did much to clarify existing law governing public drainage. However, these changes did not address environmental issues or the equitability of the process.

In addition, very little has been done to improve the poor records associated with public drainageways. An improved

inventory is needed. Standard approaches are needed for assessing wetland values of protected and nonprotected wetlands for wildlife, water quality and flood protection.

Flooding

Recent estimates indicate that about 22,500 lake and river structures in Minnesota are subject to flooding, resulting in an average of \$60-\$70 million worth of damage each year.

The Flood Damage Reduction program, authorized by the 1987 Legislature, provided \$2.2 million for 30 projects statewide to help reduce flood damages. Many unmet needs are evident by the \$22 million in new requests for project funding next biennium.

GOAL

Maintain surface water and groundwater supplies that meet long-term requirements for basic necessity, environmental protection, and economic production, by improving state and local coordination in addressing water and related land resource problems.

WATER RESOURCES

Strategies for Action

1. Provide Assistance to Local Governments

- Provide information and technical assistance to counties and local governments in preparing local water management plans.
- Continue a program to provide cost-sharing grants for flood damage reduction projects.
- Continue the dam repair and abandonment cost-sharing grant program to protect public safety.
- Develop a grant program to assist local units of govern-

ment in implementation and enforcement of the shoreland management program.

2. Coordinate Water Resource Policies and Strategies

- Work with the Environmental Quality Board task force to formulate a comprehensive state policy for the use, protection, and enhancement of Minnesota's lakes.
- Develop state water allocation policies to address future interbasin transfers and out-of-state water diversions.
- Support efforts to modify the Drainage Code to improve environmental sensitivity and

promote equity and fairness.

- Examine the feasibility of delegation of the Federal 404 permit program to the state.

3. Improve Water Resource Information and Studies

- Develop, extend or otherwise improve computer-based information systems in support of technical, service, or management objectives.
- Continue development and application of state-of-the-art groundwater investigation techniques to solve complex groundwater problems.
- Continue expansion of the observation well network in developed areas of the state in order to predict the need for intervention and enable evolution of new proposals for water use.
- Continue development of equitable protected flow elevations through analysis of water needs for fish and wildlife habitat, recreation opportunities, and water quality.
- Collect information on the quantity and quality of selected aquifers (underground, water-bearing formations), and develop a computerized data base for surface water hydrology information.
- Continue to expand the tech-

nical capability to effectively deal with surface water conflicts.

4. Improve Management Programs

- Continue a river management field team to accelerate the implementation of environmental and recreational enhancement projects on the Upper Mississippi River system.
- Provide for implementation of the amended shoreland rules through training and assistance.
- Accelerate the determination of ordinary-high-water levels for lakes and protected water flow levels on rivers and streams.
- Develop a comprehensive lake management program. State financial and technical aid should be linked to comprehensive local water planning.
- Develop plans and programs for water conservation and drought preparedness.
- Develop aquifer capability estimates toward establishment of optimum use limits.
- Enhance the capabilities to provide for comprehensive resource management on the St. Croix River.



FOREST RESOURCES



Accomplishments

Major accomplishments in the management of forest resources include the following:

- Responded to a 60% increase in Minnesota fire suppression demands while supporting fire fighting efforts in Western states with 100 DNR personnel and 131 emergency-trained, non-DNR smoke chasers from Minnesota.
- Conducted 1,715 new timber sales, sold 605,000 cords of wood from DNR-administered land and regenerated 27,427 acres of land.
- Reforested over 17,000 private acres of land and prepared 2,700 private forest management plans.
- Provided assistance to 200 communities in identifying disease and construction-related damage acres.



Wildfire Protection

The protection of life, property and natural resources from wildfire is a continuing concern for the future. The DNR is responsible for providing protection on 45.5 million acres of land with the assistance of local volunteer fire departments.

The expansion of urban areas into suburban and wooded rural fringes is making fire protection more difficult. Effective response requires modern equipment and coordinated state and local efforts. Increasing demands for protection require modern communications and ground and aerial attack equipment. While wildfire funding has increased over the last decade, it has not been adequate to meet needs.

Federal funding assistance is also threatened with cancellation, affecting the ability to employ personnel who administer and coordinate statewide fire programs. An average of \$1.5 million is needed to address fire protection needs on a continual basis.

FOREST RESOURCES

Timber Supply

Within the past decade, Minnesota has seen enormous growth in its wood-based industries. Minnesota's forest products industry now generates \$4 billion annually in product value and accounts for fully 16% of the state's annual manufacturing value. Forestry-related employment is not only where the trees are grown. Over half the wood products manufacturing jobs are in the Twin Cities metropolitan area.

This forest products industry renaissance comes on the heels of massive investments in new and expanded manufacturing facilities. Total capital investment in Minnesota's forest products industry exceeded \$900 million between 1977 and 1986. Additional capital investments could boost that total to over \$3 billion by 1996.

As a result, timber harvested from Minnesota's forests has increased by nearly 50% since 1977, to over 4.3 million cords annually. DNR administered lands provide about 20% of that amount.

A major factor influencing the continued viability of the forest products industry in Minnesota is the long-term supply of wood, particularly aspen, which has played a key role in development of the state's forest products industry. At present, Minnesota contains a disproportionately high volume of mature

aspen, jack pine, and black spruce. Concerns exist over this temporary "age class imbalance" and its implications in the years ahead. Similarly, there is concern over the future availability of red oak to meet the demands of the state's furniture and cabinet industry.

Both situations point to the need for increased investment in intensified forest management and research in Minnesota, and for the need to maintain an accurate, up-to-date forest inventory to facilitate management of the state's timber resource.



Right: New \$400 million Lake Superior Paper Industries plant - Duluth.

FOREST RESOURCES

A growing forest products industry also requires an adequate transportation system. The DNR maintains a 2,064-mile gravel, forest road system. In the past, some federal funds were used for maintaining these roads, but in 1990, these funds will no longer be available.

Forest Landowner Assistance

Minnesota's 13.7 million acres of commercial forest land is about equally divided between public (53%) and private (47%) landowners. This diverse mix of land ownerships and landowners presents a unique challenge in managing Minnesota's forests. With only 5% of the state's commercial forest land held in industrial ownership, Minnesota's forest industry is clearly dependent upon the cooperative efforts of public and private woodland owners to provide for long-term timber supply needs.

If these lands are to continue contributing their share of timber harvest, a variety of management programs, policies and incentives will be needed to encourage Minnesota's non-industrial landowners to actively practice forest management.

Timber production is sometimes secondary to other landowner objectives such as hunting, hiking, skiing or nature observation, and may be overlooked as a management option.

Community Forestry Assistance

Minnesota's urban forests provide beauty, temperature moderation, wind and noise

reduction, and enhance our wildlife habitat and overall quality of life. In the larger metropolitan areas, forested reserves play a vital part in multi-million dollar regional



FOREST RESOURCES

park programs.

Unfortunately, urban trees have some serious problems. Aging trees are losing vigor and becoming more susceptible to normal insect and disease attacks. Major insect disease problems, such as oak wilt, Dutch Elm disease, gypsy moth and pine bark beetles are taking an increasing toll. In the seven-county metro area new development is invading forested sites, and construction practices are compacting soil and damaging healthy trees. The Department must respond to these community assistance needs through a coordinated multi-agency education and technical assistance effort.

Safeguarding Environmental Quality

Tremendous growth in the demand for outdoor recreation, wildlife habitat and other forest uses is expected over the next decade. Consequently, DNR will place added emphasis on providing increased recreational opportunities, quality fish and wildlife habitat, and the protection of unique and environmentally sensitive natural values.

Efforts to enhance scenic qualities, and to reduce the visual impacts of increased timber harvesting will receive special emphasis, as forest managers are trained in landscape management and visual resource protection. Planning is already underway to develop Best Management Practices (BMPs) to assist the state's landowners, loggers and forest managers in selecting specific forestry practices that help protect water quality. Technological advances in computer application of Geographical Information Systems (GIS) are being used to identify and map sensitive resource habitat and timber types in order to minimize impacts of logging and new road construction.

GOAL

Ensure the sustained quality and productivity of Minnesota's forest resource, while safeguarding environmental quality for future generations.

Strategies for Action

1. **Provide an effective state-wide response to the threat of wildfire**
 - Continue to modernize the



FOREST RESOURCES

ground equipment through fleet management programs and replace outdated and incompatible communications equipment.

- Continue to support shared fire protection strategies between state agencies and local governments in order to accomplish fire protection goals in a cost-effective manner.
- Promote the use of controlled fire to reduce hazardous fuel build-ups, and to achieve forest management, native prairie and wildlife habitat improvement objectives.

2. Increase the contributions of forest lands to strengthen Minnesota's economy

- Increase cooperative research in the area of wood fiber production and utilization technologies.
- Increase marketing efforts needed to attract new value-added wood processors.
- Sustained, long-term investments in the management of state forest lands are needed to meet growing future resource demands and to maintain forest productivity.
- Maintain an updated, reliable forest inventory as a management tool to help ensure sus-

tainable timber supply.

- Increase economic development efforts to find uses for timber surpluses currently available in Minnesota, such as birch and pine pulpwood.

3. Coordinate the development and implementation of public and private programs aimed at improving the protection, management and use of forest lands and resources

- Promote changes in the current property tax system to encourage active management of nonindustrial private forest lands.
- Provide increased financial and technical assistance and incentives to private forest landowners to encourage sound resource management on private woodlands.
- Provide forest management and other technical support to counties, upon request, to complement their efforts to intensify the management of county-administered forest lands.
- Replant over 25,000 acres of seedlings lost as a result of the 1987-88 drought.
- Continue to implement recommendations of the State Shade Tree Advisory Committee for a multi-agency response to

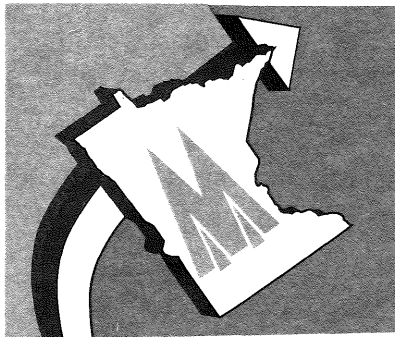
urban tree problems by establishing a program specialist to provide information on construction damage to trees and other urban development problems.

- Assist and advise local communities and municipalities in managing and developing urban forestry plans and programs.

4. Broaden and accelerate efforts to identify and protect unique, natural and environmentally sensitive areas

- Conduct training to increase the sensitivity and awareness of forest managers to visual resource impacts and develop guidelines to mitigate the impact of increased harvests of forest lands.
- Participate in the development and implementation of Best Management Practices to help protect Minnesota's water quality from nonpoint source water pollution impacts.
- Substantially increase investments in providing quality recreation opportunities and in improving fish and wildlife habitat on state forest lands.
- Develop an integrated ecological resource information data base.

FISH, WILDLIFE AND NATIVE PLANT RESOURCES



projects to improve the relationship between the Department and interested citizens.

Environmental Awareness and Increased Expectations

Every year more Minnesotans are fishing, hunting, viewing

wildlife, or otherwise appreciating Minnesota's landscape. At the same time, habitats are being degraded or lost by intensified land use. Wetlands are drained, streams and lakeshores polluted, and vegetation cleared for roads and other development.

This dilemma is causing growing dissatisfaction and disappoint-

ment among resource users. The challenge for the Department's resource managers is to reverse this trend.

The Reinvest in Minnesota program (RIM) is an effort to revitalize Minnesota's environment, reverse the trend of degrading habitats, and increase investment in fish- and wildlife-

Accomplishments

The Department has made a concerted effort in the protection of fish and wildlife habitat, monitoring and inventorying resources and their uses, developing partnerships and improving planning. Some specific accomplishments in these areas include:

- Managed the RIM matching account, the Conservation Reserve Program, and the private sector match of critical habitat.
- Strengthened public/private partnerships for managing fish, wildlife and native plants.
- Expanded a scientific approach to fish and wildlife management by improving trout stream habitat and developing wildlife habitat.
- Focused attention on local fish and wildlife management



FISH, WILDLIFE AND NATIVE PLANT RESOURCES

based recreation. Thanks to this nationally recognized program, over 100,000 acres of habitat have been improved. These efforts, though significant, have not met the investment Minnesota needs to keep up with the increasing demands on fish and wildlife resources.

Accountability

Comprehensive planning for management of fish and wildlife makes better use of existing staff, equipment and funds, gives the public more opportunity for input, and helps establish consensus.

Public/private partnerships are vital to effective fish and wildlife resource management. Professional managers continue to maintain close involvement with local sportsman's clubs, interested associations, and concerned individuals in activities concerning local resources, setting special regulations and seasons, habitat management projects, lake management planning, and fishing piers.

Comprehensive planning is also improving accountability and efficiency in day-to-day operations. Through an operational

management system, managers can identify high-priority work, secure funding, and track costs. As the new system is refined, managers will become more effective and efficient.

Resource Protection

Habitat loss was identified as the single most important issue during the Department's Strategic Planning and Budgeting Process. Acquisition, as a long-

term strategy to preserve fish and wildlife habitat, continues to be essential. Innovative programs like Prairie Bank offer alternatives to fee acquisition and are very cost effective.

Enforcement of regulations and environmental review of activities that cause habitat loss are essential for reducing habitat loss by providing technical assistance to resource users.

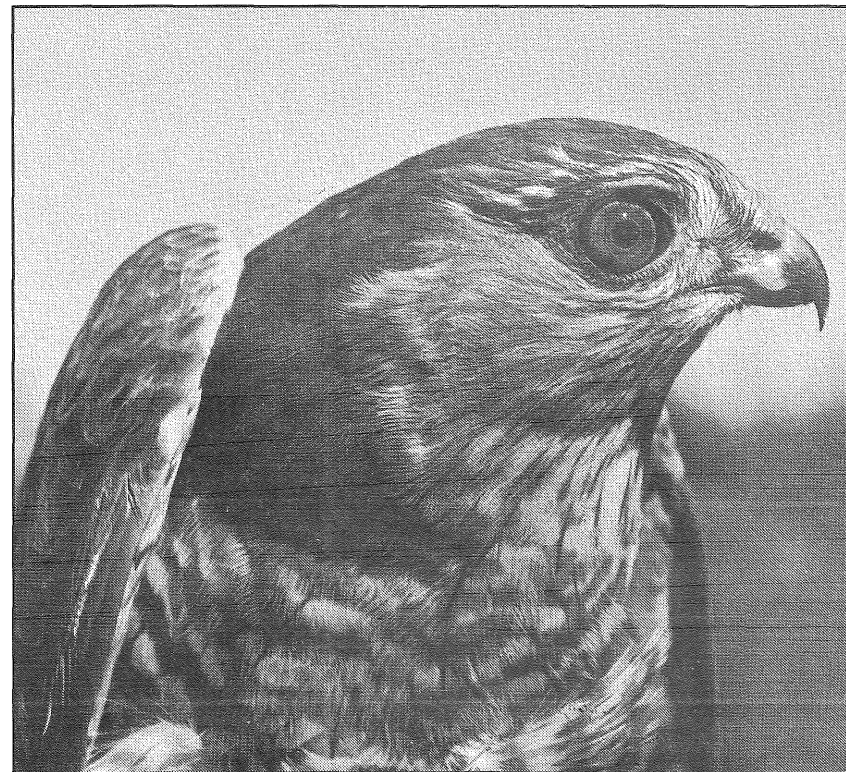
Protection of endangered species and halting the spread of purple loosestrife are important protection strategies.

Resource and Recreational Development

There are many ways to enhance fish and wildlife populations by habitat management. Examples are prescribed burning, wetland restoration, timber harvest on public and private land, improving spawning areas, aerating and rehabilitating lakes, and controlling fish species.

Resource Monitoring

A systematic inventory of available resources is essential to any business. The "business" of enhancing fish and wildlife to meet customer demands is no exception. Special surveys are required for particular species or habitats, such as wetlands or warm-water rivers. Research is required to improve inventory techniques or interpret data to provide a sound basis for management. Resource users, be they recreationists, local governments, or resource developers, can no longer be allowed to make important decisions without adequate information.



FISH, WILDLIFE AND NATIVE PLANT RESOURCES

Resource Partnerships

The value that Minnesotans place on their fish and wildlife resources provides fertile ground for creating effective management partnerships. Education plays a vital role in sharing resource information. For example, the Critical Habitat Matching program is an important mechanism for public and private groups to work together on fish and wildlife projects.

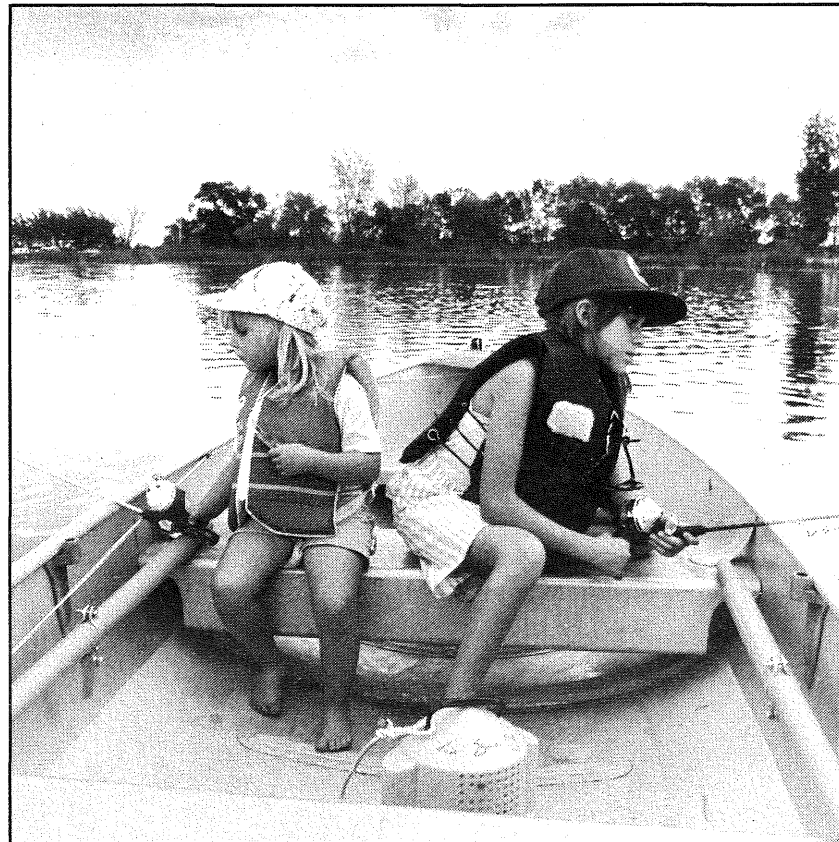
GOAL

Protect and manage Minnesota's fish, wildlife, and native plants for their intrinsic values and long-term benefits to the people of Minnesota.

Strategies for Action

1. Protect Resources

- Continue the acquisition of land in fee title or long-term easements.
- Continue the Prairie Bank Program as an effective way to enter into long-term easements for protection of native prairie.
- Improve environmental review by hiring regional specialists who will be responsible for coordination, potential environmental damage assessment, and mitigation proposals.



- Direct additional resources to the protection of endangered species.
- Improve the Scientific and Natural Areas (SNA) Program.
- Continue to work on controlling purple loosestrife.

2. Develop Resources and Recreational Opportunities

- Rehabilitate lost habitat in

- lakes and cold-water and warm-water streams and stock more trout and salmon in lakes, streams, Lake Superior, hatcheries, and iron mine pits.
- Renovate six hatcheries and increase the supply of fingerling fish for stocking.
- Use prescribed burning and private land cooperative projects as a dual emphasis in

forests and farmland.

- Increase spending for pheasant habitat improvement.
- Continue to improve lands in state ownership.
- Implement SNA improvements to protect endangered species or unusual features.

3. Monitor Resources

- Survey lakes and streams at least every 6-8 years to improve management.
- Conduct special surveys on unique resources such as the Boundary Waters Canoe Area Wilderness, the Lake Superior watershed, and large warm-water and cool-water rivers.
- Expand research of mine-pit ecology, fish movement studies, and angler surveys.
- Conduct a statewide fish contaminant survey jointly with the Department of Health and the Pollution Control Agency.
- Collect baseline data continually to detect trends and to monitor and evaluate management and environmental impacts.
- Conduct surveys of shallow waterfowl lakes as a basis of management.
- Increase research efforts on deer and waterfowl populations.

FISH, WILDLIFE AND NATIVE PLANT RESOURCES

- Participate in implementing the North American Waterfowl Management Plan to ensure solutions to severe waterfowl and wetland problems.
- Use the County Biological Survey for conservation planning and education directed at

sensitive natural habitats, rare plants and animals.

- Increase research on natural controls for purple loosestrife that are applicable in Minnesota.

4. Form Resource Partnerships

- Implement a state-wide

aquatic education program to improve public understanding of the aquatic resource.

- Increase publication and distribution of public informational bulletins.
- Continue the Critical Habitat Matching Program through RIM that matches private

funds with state funds.

- Continue and improve special hunts to control wildlife populations and provide recreation.
- Improve the control of Nongame Project Contracting with students, educators and professionals by establishing a contract coordination position.
- Develop a pilot program for urban aquatic education in conjunction with the University of Minnesota's Extension Service.

5. Continue Resource Planning

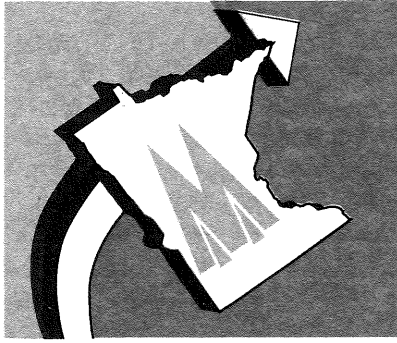
- Improve the flow of information to the public and find more ways to involve them in fish and wildlife program planning.
- Continue refinement and implementation of the planning process.

6. Continue Resource Coordination

- Continue to coordinate RIM.
- Expand the implementation of wildlife plans through interdisciplinary coordination in forested areas.



OUTDOOR RECREATION RESOURCES



Accomplishments

The state outdoor recreation system consists of State Parks, State Forests, State Trails, Water Access Sites, Canoe and Boating Routes, Wildlife Management Areas and Scientific and Natural Areas. Following are highlights of accomplishments over the last biennium:

Developed Key Facilities

- Surfaced 19 miles of Root River State Trail and 14 miles of Willard Munger State Trail.
- Developed 80 water access sites, 34 fishing piers, and 10 recreation sites.
- Opened Tettegouche State Park campground.
- Reconstructed or expanded 10 state forest campgrounds and 19 forest day-use areas.
- Reconstructed 42 miles of trails in state forests.

- Developed new interpretive center at Whitewater State Park and expanded interpretive facility at St. Croix State Park.

Acquired Key Recreation Areas

- Acquired and opened Hill Annex Mine State Park and added Mystery Cave to Forestville State Park.
- Leased railroad corridors, an innovative method of preserving corridors for recreational use prior to acquisition.
- Acquired abandoned railroad corridor from Willmar to Hawick.
- Acquired the 1,600-acre Blackhoof Wildlife Management Area (WMA) and initiated

- acquisition of Swan Lake WMA.
- Added 11 units to the Scientific and Natural Area System.

Planning and Coordination

- Formed an interdisciplinary Outdoor Recreation Coordinating Committee to coordinate department recreation activities and address emerging issues.
- Completed plans for a harbor at Brighton Beach.
- Completed forest unit plans for the Orr and Park Rapids units.
- Organized the interagency Minnesota Clean Rivers Project.

Survey Research

- Surveyed boaters, anglers, snowmobilers, skiers, bicyclists and state park users to gain information on use and satisfaction with recreational opportunities.
- Conducted a statewide public opinion poll to gain information for the State Comprehensive Outdoor Recreation Plan (SCORP).

Visitor Services

- Developed new publications, including: Trails and Waterways brochure, Forest Campground and Recreation Areas guide, statewide fishing pier map, eight fishing brochures, northeast Minnesota snowmobile map, two metro area river guides, and prototype comprehensive recreation map.
- Added two full-time interpretive staff in state parks, and expanded interpretive services to include state trails and scientific and natural areas.
- Increased enforcement of recreation rules and laws.
- Expanded and upgraded merchandise in state park gift shops. Increased the number of special events in state parks and attendance at events.



OUTDOOR RECREATION RESOURCES

Maintaining Outdoor Recreation Facilities

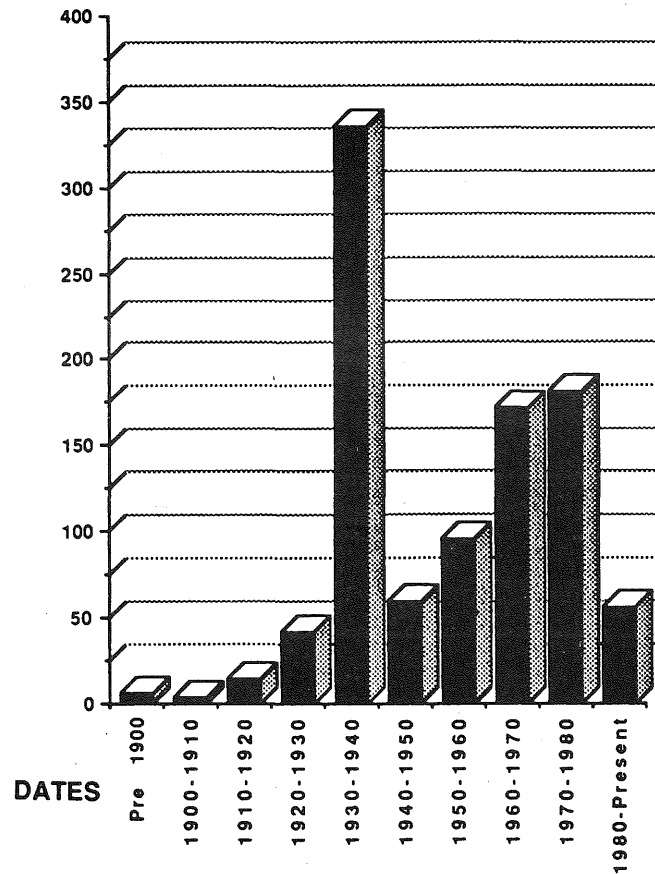
Many outdoor recreation facilities are deteriorating due to age, increasing use, and vandalism.

For example, some roofs, windows, roads, trails, fences, sewage systems and toilets need repair; some fire rings and picnic tables need to be replaced.

In recent years, funding available for repair and preventive maintenance has been insufficient. As the condition of facilities deteriorates, the quality of people's outdoor recreation experience is diminished.

which to pursue such traditional interests as hunting, camping, nature study and hiking. In addition, people want new kinds of facilities to accommodate such activities as recreational-vehicle camping, off-road vehicle use, and long-distance snowmobiling, skiing and bicycling.

AGE OF STATE PARK BUILDINGS



Minnesota has made substantial investments over the last 25 years to develop one of the highest quality outdoor recreation systems in the nation. Adequate maintenance and effective operations are essential to protect this investment, provide quality public service and ensure users' health and safety.

Expand Opportunities for Outdoor Recreation

To meet recreation needs, DNR needs to modify existing recreation facilities and selectively acquire and develop new areas. Use of the state's outdoor recreation system has increased substantially in recent years—by as much as 30% at some facilities.

With increased use, people are seeking more diverse settings in

Preparing for the Future

Changes in recreation trends, population, leisure time, urbanization and technology dramatically impact use of the state's outdoor recreation system. To be responsive to the diverse recreational interests of Minnesotans, the DNR must expand its efforts to plan for the future. Strategic planning for the outdoor recreation system will be an effective process for anticipating and preparing for the future.

Increase Resource Management

Many of the natural resources in Minnesota's recreation areas are suffering from overuse, encroachment from development, and major changes in natural forces. As a result, many of the unique natural features which

OUTDOOR RECREATION RESOURCES

are the focus of recreation areas are slowly deteriorating. For example, the old forest stands and prairies in many state parks are in decline due to more effective fire suppression. Active management is essential to preserve these and other natural resources and to provide high-quality recreation.

Expanding Interpretive Opportunities and Visitor Services

More and more, people want to understand the natural, cultural and historical significance of the areas they visit. DNR needs to strengthen its interpretive and educational activities to satisfy the public's increasing interest. Interpretive experiences make recreation more interesting and fun and increase visitor safety. They also can build understanding of resource management.

GOAL

To enhance the satisfaction of existing and new recreational users while preserving the state's recreational resources and environmental quality.



OUTDOOR RECREATION RESOURCES



Strategies for Action

1. Increase Maintenance of Outdoor Recreation Facilities

- Establish maintenance of facilities as a departmental priority.
- When building new recreation facilities, schedule in maintenance costs.

- Inventory condition of recreation facilities and establish routine maintenance and replacement schedules.
- Show preventive maintenance versus redevelopment costs.
- Propose alternative sources and methods of funding.

2. Expand Opportunities for Outdoor Recreation

- Accelerate acquisition of key parcels of land, as identified in resource management plans.
- Accelerate development of facilities needed to meet growing and diverse demands.
- Enhance coordination of rec-

reation-related planning and management activities, including coordination with other public and private recreation providers.

3. Develop and carry out a DNR Strategic Plan for Outdoor Recreation

4. Increase Resource Management

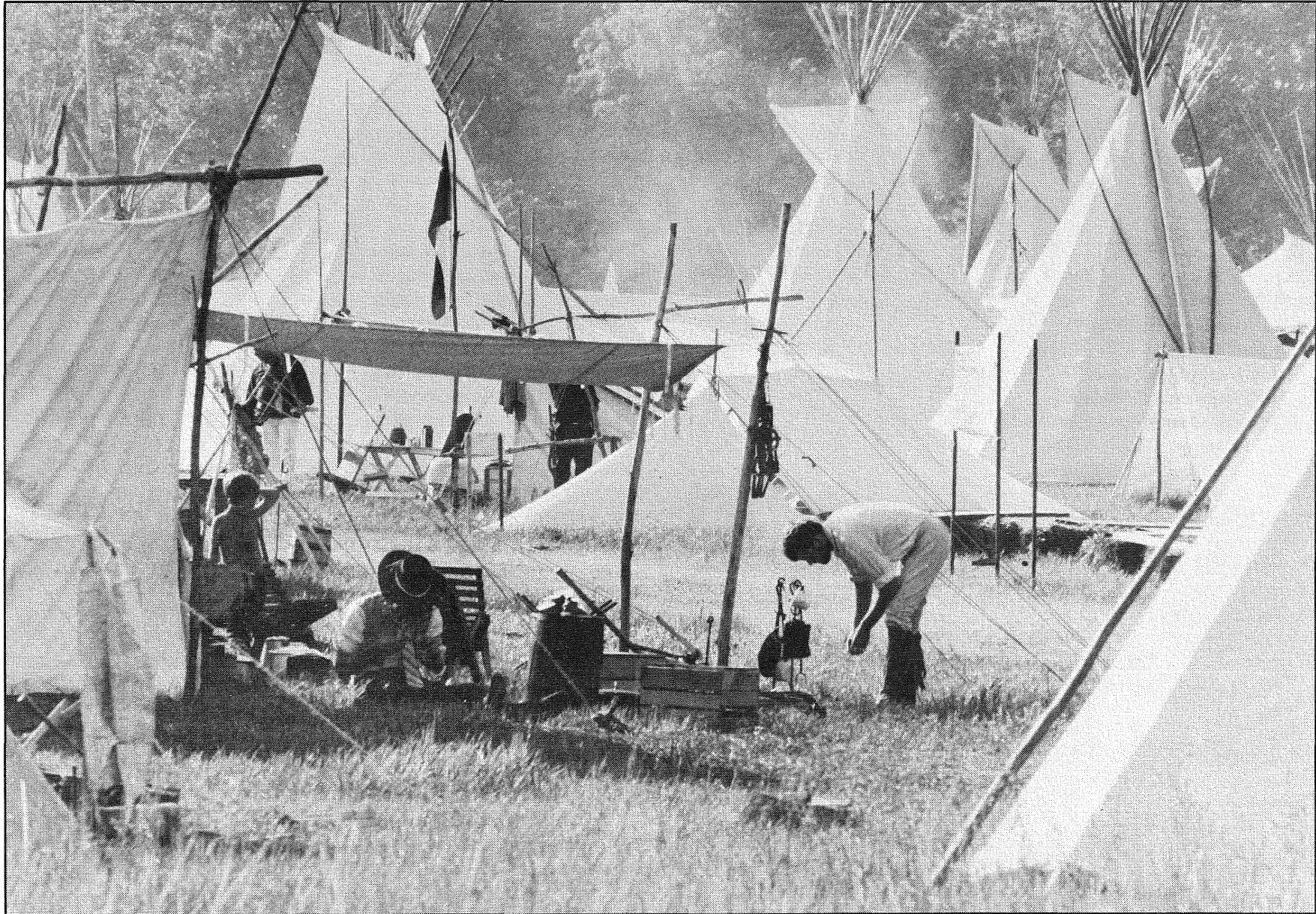
- Develop resource management plans that will recommend and prioritize resource management activities in units of the outdoor recreation system.
- Increase restoration and management efforts in accordance with established priorities.

5. Expand Interpretive Programs

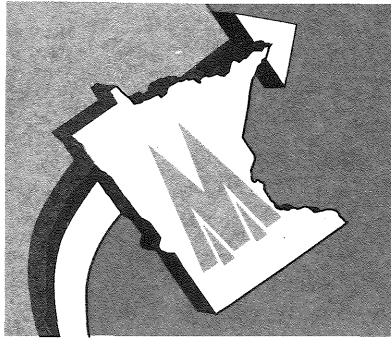
- Expand successful interpretive projects and provide interpretation in more recreational units.
- Implement new and innovative projects, such as an interdisciplinary interpretive project.
- Develop self-guided displays and trails for cost-effective information availability.

Right: Special Events - Trapper rendezvous at Fort Ridgley Festival.

OUTDOOR RECREATION RESOURCES



ENFORCEMENT



Accomplishments

Increased diversity of natural resource management programs and recreational opportunities have dramatically expanded the need for law enforcement services in recent years. To keep pace the DNR has had to work more efficiently to meet these regulatory needs. The use of new techniques, updated enforcement methods, and improved responsiveness to problem areas are key factors in meeting these expanded needs. In recent years the DNR has made improvements in natural resources law enforcement and service. These accomplishments include:

- Reorganized the Special Investigations Unit (SIU) and developed an up-to-date Operations and Training manual for SIU personnel.
- Established a speciality marine unit on Lake Superior.

- Shifted the responsibility of car-kill deer removal to the local road authority, freeing up more officer hours.
- Received more funding for contract beaver removal, freeing up more officer hours.
- Developed a six-month Conservation Officer recruit training program to better train and evaluate new personnel prior to permanent assignment.

Increased Public Expectations

Conservation Officers are responsible for the regulation of all forms of outdoor activity including hunting and fishing and rapidly increasing recreational activities. By becoming more aware of and responsive to the needs of the public, the Department has created a much larger expectation for service than has ever existed before.

The Department has responded in a variety of ways including increased training for officers at all field, supervisory, and management levels. Enforcement emphasis has been shifted to problem areas with excellent results. It has become apparent, however, that the concept of each officer servicing all areas of

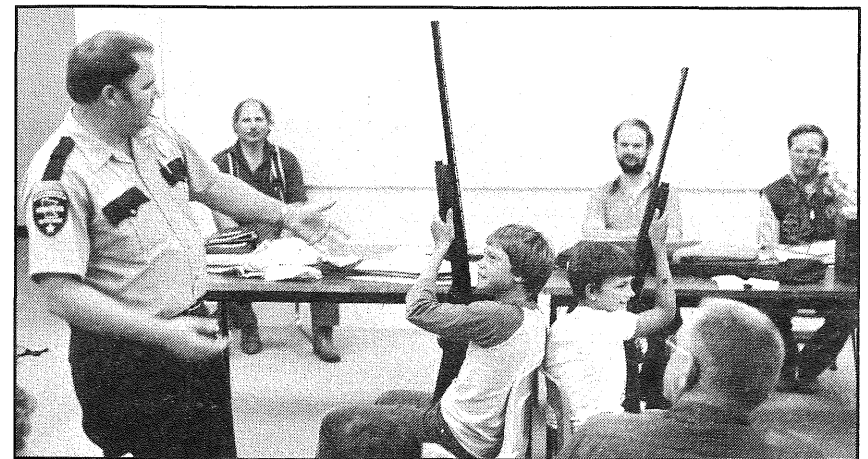
outdoor enforcement is not adequate to meet today's regulatory needs.

There are many rapidly growing areas of outdoor recreation, resource use and environmental protection that cannot be adequately serviced by "generalist" Conservation Officers. Field Conservation Officers are active in over 75 separate areas of enforcement and public education. Every hour spent on a new or increased area must be taken from some other area of responsibility. While more officers will be needed in the future, another way to increase the level of service without a sizable increase in the Conservation Officer complement is to train specialists.

Specialization as a Strategy

Several areas of natural resource enforcement such as commercial resource use, fraudulent licensing, and unlawful trafficking in natural resource products require more time and specific skills than an individual field officer has available. Currently, there are specialists in safety training, piloting aircraft, commercial investigation, and marine enforcement. To adequately regulate all areas of natural resource and recreation it will be necessary to add officers and train others in the following areas:

- Commercial enforcement such as the fur industry, the taking



ENFORCEMENT

and sale of bait, use of native plants, game farm operations, and licensed shooting preserves.

- Recreational enforcement including all-terrain vehicle use, snowmobile use, cross-country ski pass enforcement, watercraft safety, and other recreational enforcement.
- Recreational unit enforcement including trail enforcement on both designated and grant-in-aid trails, state park enforcement, and forestry enforcement.
- Added enforcement responsibilities on major wildlife management units.
- BWCAW enforcement including primitive non-motorized methods required of officers and subsequent time restraints.

Specialization can, and will, greatly improve the level and quality of service provided by Conservation Officers.

Public Information and Education

A major responsibility of Conservation Officers is providing information to the sporting public and participating in the Youth Safety Education Programs: Firearm Safety, Snowmobile Safety, and All-Terrain

Vehicle Safety Training. In March 1988 a new program was added with the transfer of the Advanced Hunter Education section to the Division of Enforcement. Several new areas are currently under development, including:

- Re-evaluation of existing curriculum in all programs.
- Development of informational brochures for the public on a variety of topics including aquatic plants, commercial use of raw fur, taxidermy regulations, and explanation of the safety training programs and their requirements, and specialty game and fish law brochures.

GOAL

To increase and improve law enforcement services to the public by providing a prompt, professional, and specialized response in all areas and to provide improved educational and informational services to the outdoor public.

Strategies For Action

1. **Establish a specialized response process so that all resource and recreational use problems can be managed**
 - Provide speciality training to

teams of officers and ensure that responses to problems are prompt.

- Utilize and evaluate new techniques and equipment that show promise to provide improved service.
- Increase the number of officers and assign them primarily to recreational enforcement.
- Shift the enforcement emphasis from the general to more specific areas of need.
- Shift officers to problem areas until the problem is resolved.

2. **Provide a higher level of information and education to the public on resource and recreational topics**

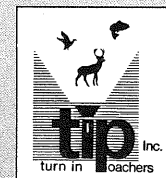
- Increase production and distribution of informational brochures.
- Improve the marketing of educational programs and increase participation in them.
- Provide information to the print and visual media by means of media "KITS" prior to the opening of seasons.
- Provide more information to the public about the role of the Conservation Officer in resource management and recreational regulations.
- Increased emphasis on providing a positive approach and service to the public through communications and responsiveness training.

TIP (Turn in Poachers)

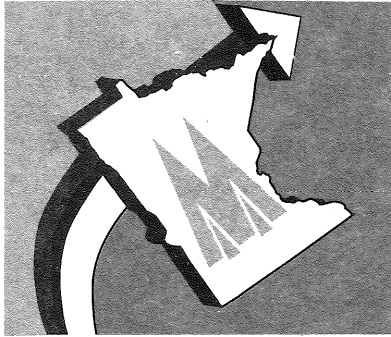
TIP, Inc. is a nonprofit organization formed by concerned citizens and conservationists who want to stop poaching - the illegal taking of fish and wildlife - in Minnesota.

If you witness or hear about a violation of a fish or wildlife law, call the TIP hotline number listed below. The hotline calls are answered in the DNR's Enforcement Office in St. Paul and relayed to field officers. Rewards are available and you can remain anonymous.

CALL TIP:
Toll-free: 800-652-9093
Or call your local
Conservation Officer



REAL ESTATE MANAGEMENT



Accomplishments

The DNR administers 5.3 million acres of public land. Managing this land requires not only expertise in natural resources management but also in real estate. These activities include realty services for the acquisition, sale, and exchange of land; leasing; and administration of records, maps, and documents relating to land ownership rights and transactions. Accomplishments this past biennium include:

- Completed 340 parcel acquisitions and 30 land exchanges. Offered for sale 225 parcels of state land.
- Processed 1,480 leases, licenses, easements and cooperative farming agreements.
- Made available ownership status, land contract information, and land data for 400,000 parcels of state land for users of the Department's computer system statewide.

- Administered approximately 8,000 land contracts records, half of which required annual, semi-annual or quarterly billings and payment processing.
- Generated \$3.6 million in revenue to the state by real estate activities on DNR-administered land and waters.

Increasing Real Estate Activity

The need for real estate services for DNR-managed land is increasing. For example, the DNR is exchanging more land with the U.S. Forest Service and the forest industry. And, because of recent changes in the Minnesota Constitution, the DNR will be exchanging more land with counties.

With the state's commitment to the RIM Program, land acquisition for fish and wildlife habitat is expected to continue at an accelerated pace beyond the existing DNR acquisition programs.

Recent legislation mandates the Department to sell state-owned lakeshore lots now leased to citizens. The state must survey, plat and appraise these lots prior

to their sale. Additional Department-administered trust lands and submerged lands may have the potential to generate income from uses compatible with natural resources management. These increases in real estate program activities, in addition to state land transfers resulting from Indian land claim settlements and removing trust lands

from State Park status, will increase requirements to maintain current and accurate records on the State's land assets.

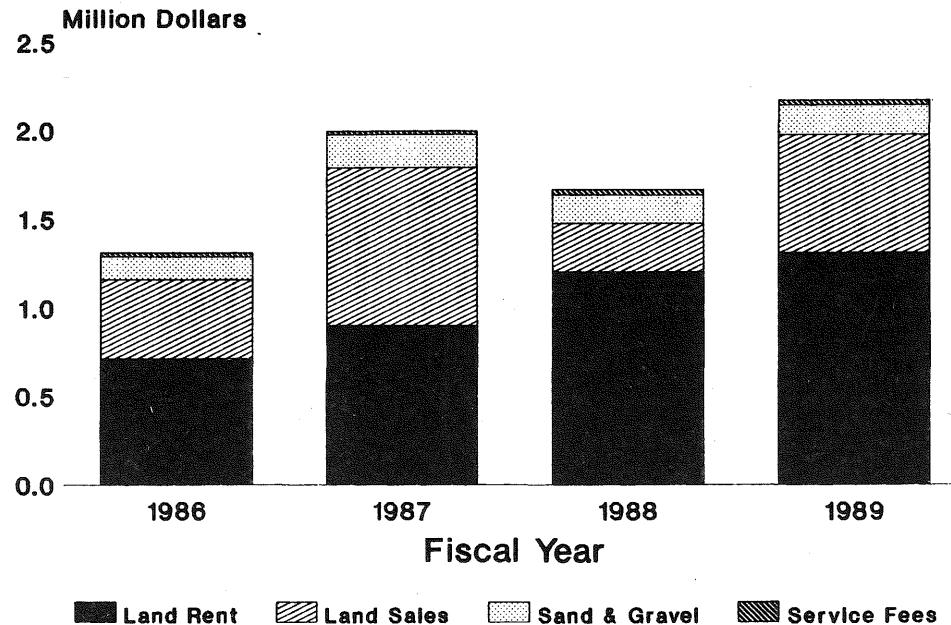
GOAL

Achieve greater natural resource benefits, enhance state revenues, particularly those generated



REAL ESTATE MANAGEMENT

Real Estate Revenues



Bureau of Real Estate Management

from school trust lands, and better serve the public interest through more efficient and effective management of leases, sales, exchanges, acquisitions, and other real estate activities.

Strategies for Action

1. Provide Efficient Delivery of Services

- Enhance the efficiency of land management through an expanded program of land exchanges with counties, the U.S. Forest Service, and forest industry.
- Streamline the land acquisition process by implementing recommendations of the recent

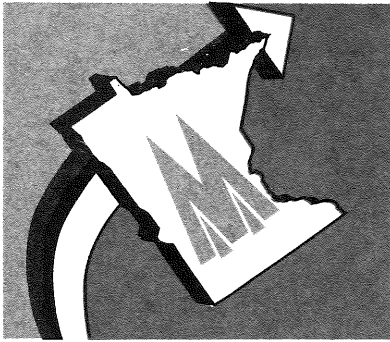
- acquisition program study report.
- Facilitate an increase in land sales by coordinating the surveying, platting, and appraising of lakeshore; by identifying other tracts to be offered for sale; and by enhancing sale success through improved marketing.

2. Better Evaluate Real Estate Opportunities

- Develop and use better economic information to establish fair market value for leases and evaluate opportunities to increase revenues through an expanded lease program.
- Accelerate efforts to identify and dispose of surplus state land to make additional funds available for acquisition.
- Develop policies and guidelines for submerged land management and explore leasing opportunities.

3. Improve Coordination of Real Estate Activities

- Provide land record information which includes current real estate transactions on all state-owned land to DNR regional and area offices, counties, and other interested users.
- Develop and improve DNR transaction methods and procedures and complete and distribute a real estate management manual that DNR employees and potential clients can refer to for current policy and procedures.



A new component of the strategic planning process was the participation of staff from the Department's six regions. Regional staff generated three types of issues—internal/administrative, resource, and external/socioeconomic—and then ranked these issues. Some issues were common to all or most regions, while others were unique to one region.

Improving Administrative Services

An overriding concern in the regions is a need for greater attention to administrative issues. In all regions, staff need additional administrative support which would allow them to better manage the state's natural resources. These administrative needs include expanded office facilities, improved

equipment, and additional clerical and special program support.

Degradation of Natural Resources

From the many resource issues identified by the regions comes a common theme: the decline in the quality of natural habitat and other resources due to human activities. As demands on natural resources have increased, insufficient funds and personnel have made it difficult to effectively manage these resources, especially sensitive or rare habitat areas.

A related issue is the increasing demand for recreational opportunities and facilities, which is causing deterioration of natural resources and the quality of the recreational experience in high-use areas. A lack of data about resources and resource users is perpetuating these problems and preventing actions to educate the public about management of the resources and alternative recreational opportunities.

Top Issues

The highest-ranking issues in each region were analyzed, sometimes combined with

similar issues, and divided into groups by type of resource. The results follow:

Water

1. Groundwater quality, the top issue in Regions II and V, is of extreme importance to the whole state. Regional staff feel that Minnesotans are only beginning to realize the potential for problems from groundwater pollution.
2. Drainage is a major issue in southwestern Minnesota. Wetland drainage, stream channelization, ditches, and agricultural drainage affect fish and wildlife as well as water quality.
3. Coordination of the planning and management of lakes and rivers needs improvement throughout the state. Complex jurisdictional arrangements and the interdisciplinary nature of these resources necessitates a comprehensive, coordinated approach.
4. The fact that users' perception of their impact on resources is often not realistic is a barrier to enlisting users' help in protecting resources.

Fish, Wildlife, and Native Plants

1. The loss and degradation of

habitat is a problem common to all regions, although the causes differ. In the metropolitan area, habitat is being lost to urban development. In other areas, it has been lost to agriculture or degraded by vegetative succession. Habitat on existing public lands needs improvement, and additional habitat is badly needed in agricultural areas.

2. Protection of the Minnesota River is a high priority in Region IV. The valley provides some of the best wildlife habitat in southwestern Minnesota.
3. Plans for lake management are needed in Region I so that fisheries management can better meet demands.
4. Crop depredation by wildlife is often a problem in Region V.

Recreation

1. A comprehensive marketing program for outdoor recreation is the top priority in Region I.
2. Additional emphasis on developing recreational facilities is also a major need in Region I.
3. Limiting recreational development in Region II, where primitive recreation is important, should be considered.

REGIONAL MANAGEMENT

4. Recreational resources are deteriorating, while the demand for recreation is increasing.

Forestry

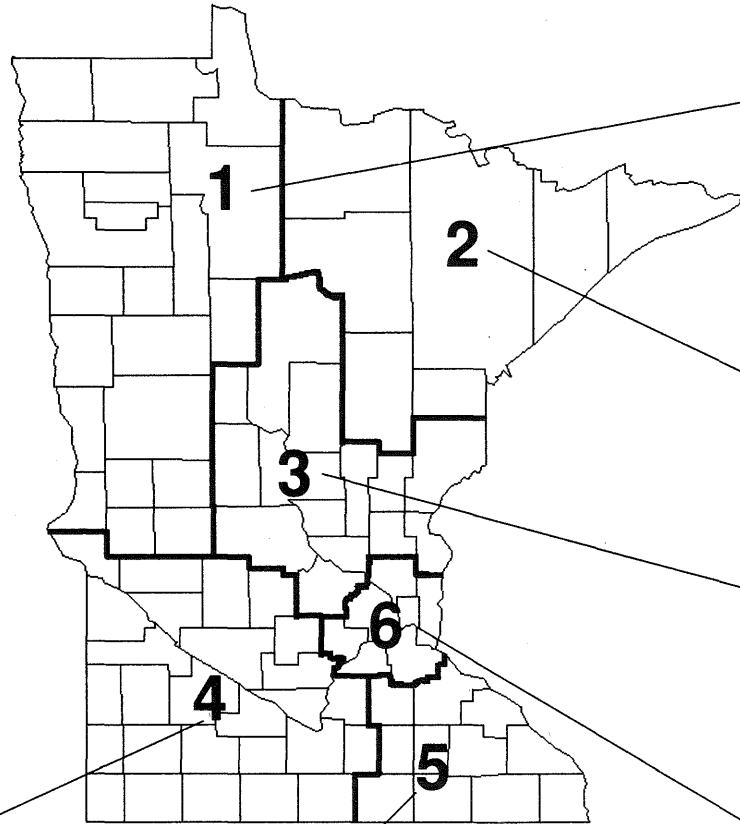
1. The Phase II forestry inventory needs to be completed to provide adequate data on which to base forest planning and management.

2. More emphasis is needed on acquiring land where such opportunities exist, especially in Region V.

3. Recent budget cuts have hampered the Department's ability to provide quality management of state and private forest lands, to handle private and state timber sales, to offer assistance to other disciplines, and to participate in the Conservation Reserve Program.

4. Recreational opportunities on forest lands need to be expanded by implementing forestry and wildlife management at specific sites.

Top-ranking Issues in DNR Regions



- Coordinate interagency management of the Minnesota River corridor.
- Drainage is causing wetland and habitat loss, downstream flooding, erosion, and pollution.
- Establish system of wildlife management areas for wildlife-oriented recreation.
- Need better data about recreation users and trends.
- Need comprehensive approach to lake and river planning and management.

- Implement ongoing DNR programs to alleviate water quality problems.
- Trails are deteriorating because of inadequate maintenance and increasing demand.
- Acquire more lands in the Dorer Memorial Hardwood Forest.
- Enhance monitoring and protection of SE Minnesota's sensitive resources.
- Crop depredation by wildlife causes losses to farmers.

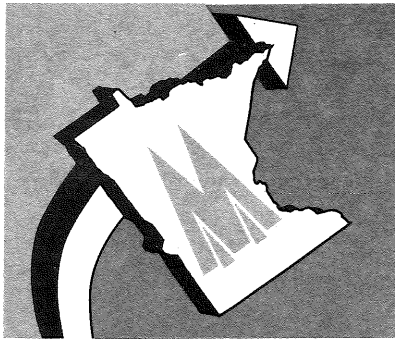
- Need comprehensive marketing program for outdoor recreation.
- Develop more recreational facilities and use existing sites for multiple purposes.
- Acquire lands to protect critical habitat for fish, wildlife, and native plant species.
- Develop individual lake plans to better meet fishing demands.
- Implement forestry and wildlife management activities on specific sites for recreation.

- Protect groundwater from all sources of potential contamination.
- Determine a reasonable limit to meeting recreation demands.
- Habitat quality is deteriorating from intensified land use and forest succession.
- Complete the Phase II Forest Inventory.

- Habitat is being lost because of natural succession and land-use change.
- Increasing resource demands are not being managed to insure ability of future resources to meet demands.
- Need a better resource data base.
- Need better information about desires of the public to provide more effective service.
- Educate public about their impact on resource quality.

- Urban development is displacing wildlife and destroying wildlife habitat.
- Recreation resources are not being adequately managed to meet demands and to protect the resources.
- Need coordinated, interagency program to protect and manage river resources.
- Need comprehensive approach to address need for public accesses, dockage, beaches, water surface use, and shoreland management.

DEPARTMENT MANAGEMENT



As the steward of Minnesota's natural resources, the Department has always been sensitive to the need to preserve the environment for present and future generations. To accomplish this mission the Department also knows it must protect another resource - the employees whose hard work and dedication make DNR programs successful.

The last two years have seen progress in two important areas: Recognizing the human side of the work of the Department, and giving people the tools they need to do their jobs effectively.

Accomplishments

- Established a Rewards and Recognition Task Force to acknowledge excellent performance by individuals and groups.

- Implemented a Department-wide Orientation Program to introduce new employees to the workplace, its operating principles and practices.
- Continued major construction programs to help consolidate area and regional administrative offices.
- Expanded the computer network which links regional offices to St. Paul.
- Began a major effort to provide computer training for all employees.
- Secured delegation of purchasing authority from the Department of Administration and developed decentralized policies to allow field managers to directly purchase most goods and services at reasonable prices locally when they need them rather than having to go through a lengthy administrative process.
- Implementation of a fleet management program for vehicles and other equipment in DNR resulting in newer and better maintained equipment for natural resources managers.

Organizational Effectiveness

Starting with the Commissioner's Management Team and

working throughout the organization, changes have been made that help the entire Department function as a team. Interdisciplinary coordination and teamwork have proven effective in accomplishing goals. Department-wide strategic planning continues to be emphasized.

Work on the Department's Innovation Board is progressing, and an interdisciplinary Trends Analysis Group will be created to monitor changes in the social, political, and economic environment that will have impacts on natural and human resources. Other capabilities of the Department will also be enhanced: policies and decision making at all levels of the organization will be enhanced through a new Management Guidelines System, and an ongoing program review system will be instituted at identified levels of the Department.

Human Resources Management

New emphasis is being placed on filling vacant positions quickly and responding to the changing composition of the DNR's workforce. The Department is developing a non-

monetary Rewards and Recognition Program, strengthening employee productivity through a comprehensive orientation program, and addressing the work plateauing that's occurring as a result of the baby boom bulge.

Skills development will be a major training focus. Limited staffing capabilities require the Department to train and develop employees to enhance their current responsibilities, successfully handle increased program responsibilities, and prepare for future career opportunities.

The DNR has a deep and firm commitment to Affirmative Action. A primary goal is to recruit, retain and advance protected group members. Equally important is ensuring employees a quality work environment that is free of all forms of harassment.

Efforts must also be made to reduce serious work-related injuries through effective case management, a strong and supportive safety and wellness program and an early return to work program.

DEPARTMENT MANAGEMENT

Maintaining Facilities and Equipment

Maintenance of facilities and equipment continues to be important to effective natural resource management. The Department will continuously monitor the need for new buildings and repair of existing

facilities. Additionally, criteria will be developed for consolidation of offices in order to better serve the public and improve employee working conditions.

Work continues on the implementation of the Fleet Management Program, including the replacement of specialized fire

suppression equipment and the upgrading of radio systems on a regular basis.

Computer Use

The use of computers is essential to the DNR's internal operations and its ability to provide information to the public and other agencies.

The Department has embarked on a long-range planning effort in management information systems. A key element will be the integration of Geographic Information Systems into the overall computer capability. Geographic Information Systems, a relatively new technol-



DEPARTMENT MANAGEMENT

ogy, has been used by the Division of Forestry for several years.

Building on Forestry's expertise, key databases will be added such as Natural Heritage, parks, scientific and natural areas, roads and trails networks, private lands, fish and wildlife files, timber sales records, and public lands ownership. The integration of this information will enable managers to make more informed decisions and improve resource information, map products, and data analysis.

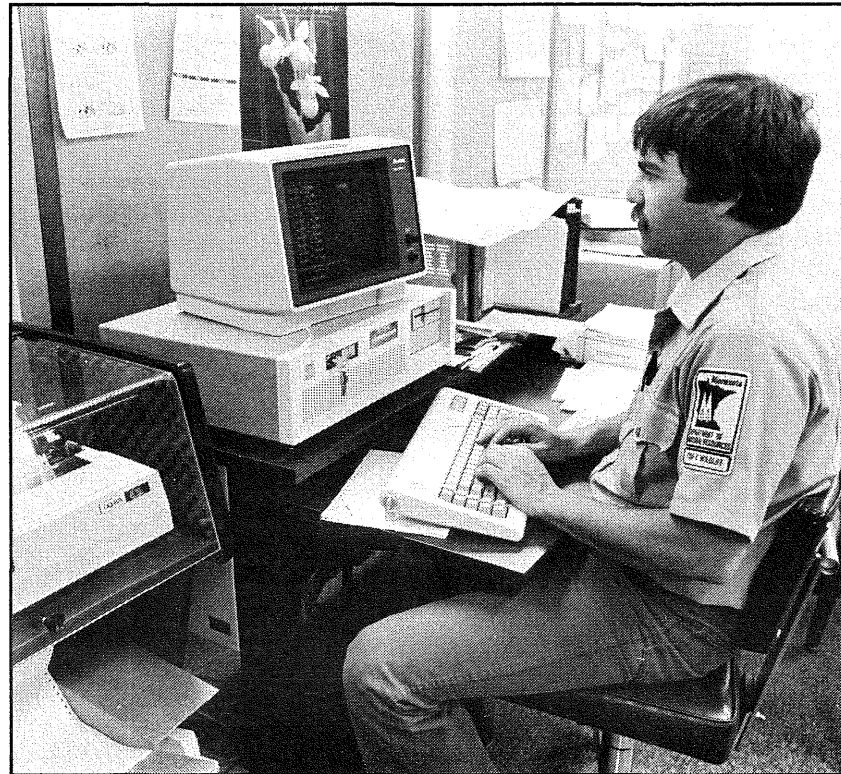
GOAL

Improve the Department through increased long-range planning, computer use, employee and organization efficiency, improved human resource management, better equipment maintenance and replacement, and reduction of workers' compensation costs.

Strategies for Action

1. Improve Management and Development of Employees

- Streamline the employee examination and hiring process to reduce time in filling vacant positions.
- Implement a non-monetary



Rewards and Recognition Program.

- Continue the "new employee" Orientation Program.
- Develop training programs to increase the skill level of employees.

2. Improve Organizational Effectiveness

- Continue and refine the Department's interdisciplinary

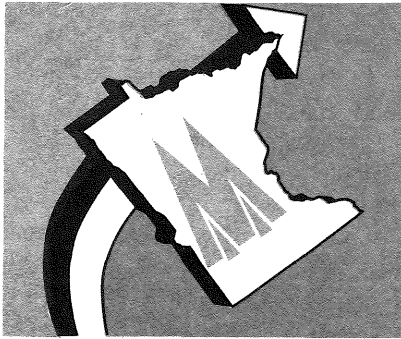
Strategic Planning and Budgeting Process.

- Develop a Management Guidelines System that provides employees with current information on all the Department's rules, manuals, procedures and other decision-making mechanisms.
- Continue a program review system that systematically evaluates the effectiveness of

various programs throughout the Department.

- Establish an interdisciplinary Trends Analysis Group to monitor social, economic and political trends that have an impact on the Department's work.
- 3. Improve Department Efficiency with Computers**
 - Continue to expand and upgrade computer capabilities to increase employee productivity.
 - Continue work in integrating Geographic Information Systems into the Department's overall computer capability.
 - 4. Maintaining Facilities and Equipment**
 - Develop a database to help evaluate the need for consolidation of offices and determine maintenance schedules and costs.
 - Inventory non-building facilities and develop procedures for funding allocations and prioritizing needs.
 - Develop criteria for discipline and multidiscipline building consolidations.
 - Improve management and replacement of specialized equipment available for shared use.

PUBLIC SERVICE



Accomplishments

Over the last biennium, the Department renewed its commitment to public service and began systematically to address implementation. Accomplishments include:

- Appointment of a Special Assistant to the Commissioner for Departmental Relations to handle matters of special concern to the public.
- Department-wide marketing project underway.
- Public responsiveness principles for DNR adopted.
- Public responsiveness training needs assessment completed; pilot training effort completed in Brainerd and St. Paul.
- Implemented a new hunter licensing application method for increased public service, decreased costs and improved efficiency.
- Many divisions and all regions now have public infor-

- mation specialists.
- The Minnesota Environmental Education Board organized and sponsored conferences, environmental fairs and exhibits and developed environmental curricula for schools, including Project Wild, Project Learning Tree and Arbor Day.

Communication and Service

Citizens want their views considered in decision making about natural resource management issues. The DNR offers opportunities such as advisory committees, public hearings, issue workshops and open houses.

Diverse groups and individuals are interested in managing the state's natural resources: anglers, bikers, environmentalists, hunters, loggers, farmers, campers, snowmobilers, hydrologists, and American Indians, to name a few. The Department recognizes the need to provide specialized service and to develop a service ethic among employees.

Principles for improving the service ethic include: having a positive attitude and respecting

ideas from the public; explaining DNR programs and procedures when required; responding promptly to phone calls, letters and requests; understanding negotiation as a useful tool in resource management; and explaining why when the answer must be "no."

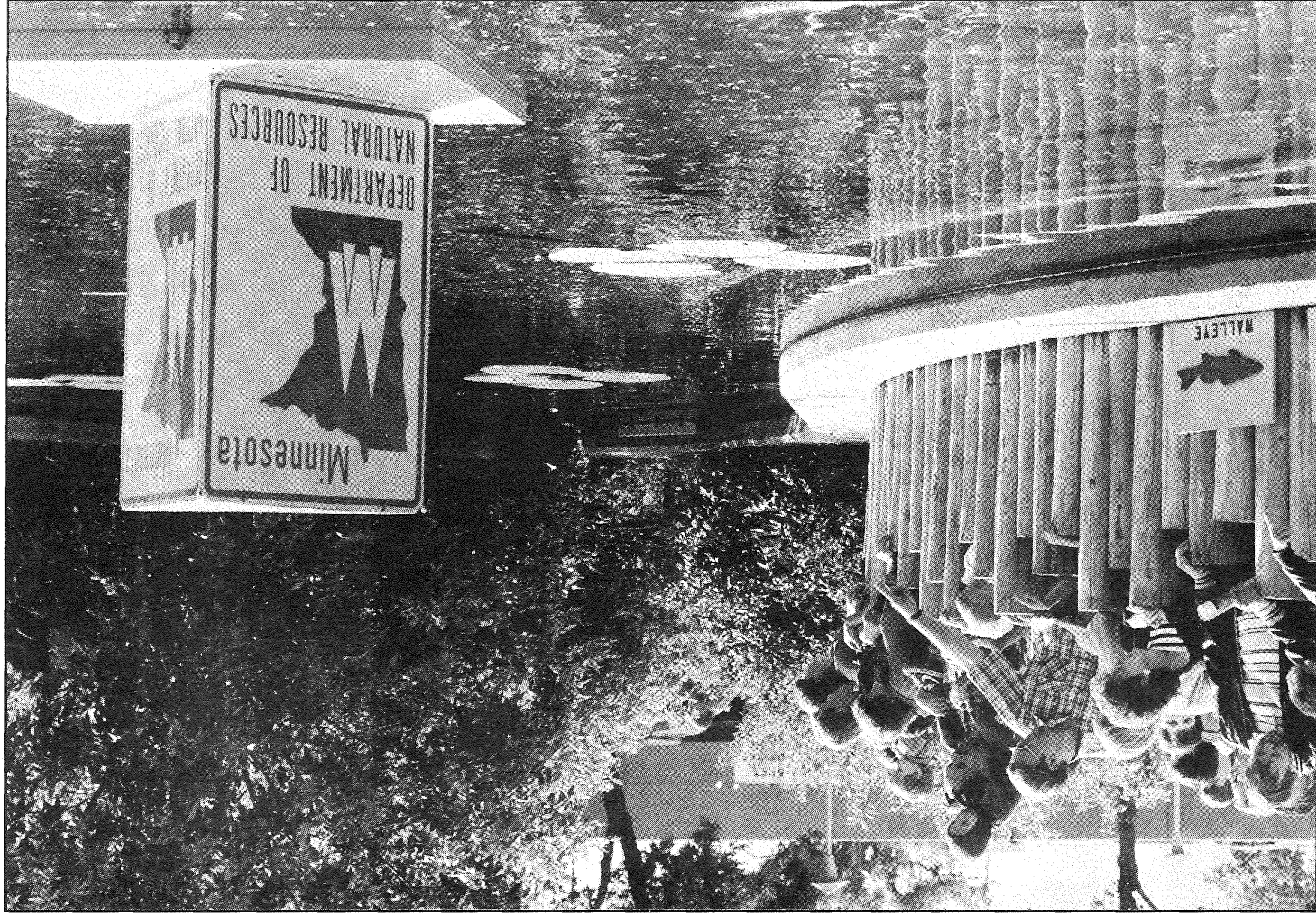
Information and Education

Providing public information and opportunities for involvement is a major effort at DNR.

A bimonthly magazine, *The Minnesota Volunteer*, is circulated free to 100,000 Minnesotans. Natural resource films, videotapes and slide shows are distributed and viewed by 900,000 persons annually.

Informational displays are seen by thousands at state and county fairs, boat, camping and sport shows, and other special events. Staff present programs annually to hundreds of sports clubs, civic and community groups.





PUBLIC SERVICE

The DNR Information Center mails materials and answers questions in response to some 600-800 calls and walk-in visitors daily. Safety programs dealing with boating, firearms, hunter education and all-terrain vehicles are extremely popular.

Volunteers participate in a wide variety of Department activities and the DNR's Minnesota Conservation Corps offers unemployed youths a chance to work on meaningful conservation projects. The Sentence-to-Service Program, a successful cooperative effort between DNR and the Department of Corrections, provides alternative service opportunities for individuals convicted of misdemeanors.

GOAL

To be a state agency recognized for its service to the public. To achieve a broad public understanding of, and participation in, natural resource management programs.

Strategies for Action

- 1. Improve Communication with and Service to the Public**
 - Adopt public service goals for each DNR unit and continue the department-wide training

- of all employees in human and public relations skills.
- Improve responses to citizen phone and walk-in requests by developing regional and central office directories, and improving phone equipment capabilities.
- Implement a long-range marketing plan for Department services, targeting user groups such as hunters, anglers, permit applicants, industry groups, recreationists and resort owners.
- Survey special publics as well as the general public to be able to better tailor DNR services and products to identified needs.
- Continue sponsorship of major outdoor recreation events such as Bike Day, Canoe Day, Cross-Country Ski Day and the Governor's Bass Opener.

- 2. Ensure Opportunities for Public Involvement in DNR Programs**
 - Continue to develop and implement public-private partnerships in areas such as local water planning, minerals development coordination, private forest management and the Conservation Reserve Program.
 - Increase summer youth em-

- ployment opportunities, help youth develop marketable job skills and an appreciation of the natural environment, and recommend enabling legislation for the Minnesota Conservation Corps.
- Provide more opportunities for volunteers, and double the number of volunteer hours provided to DNR from 60,000 to 120,000 hours per year.

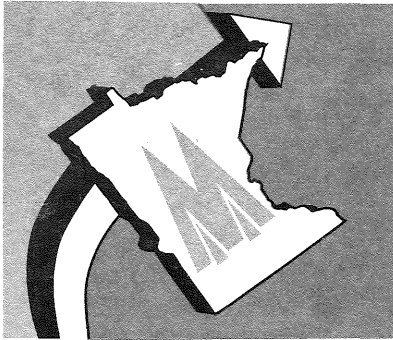
3. Provide Environmental Education Materials and Support

- Expand teacher training to

- continue implementation of the environmental education requirement for K-8 education. Encourage adoption of the same requirement for Minnesota's secondary schools.
- Develop and promote educational programs tailored to adult learners.
- Continue program coordination for current curriculums, and develop new education programs for emerging areas such as groundwater, minerals resource management, and waste reduction.



ABOUT THE DNR



With approximately 1,600 full-time employees, 1,400 seasonal employees, and operations in every county of the state, the DNR is a complex organization. The following is a brief overview of how the department is organized.

COMMISSIONER'S OFFICE - DNR's top management consists of a Commissioner who serves in the Governor's cabinet, a Deputy Commissioner, an Assistant Commissioner for Administration, an Assistant Commissioner for Operations, an Assistant Commissioner for Planning and Special Programs, and an Assistant to the Commissioner for Departmental Relations.

DIVISIONS - There are six divisions and one special unit of Trails and Waterways. Each is

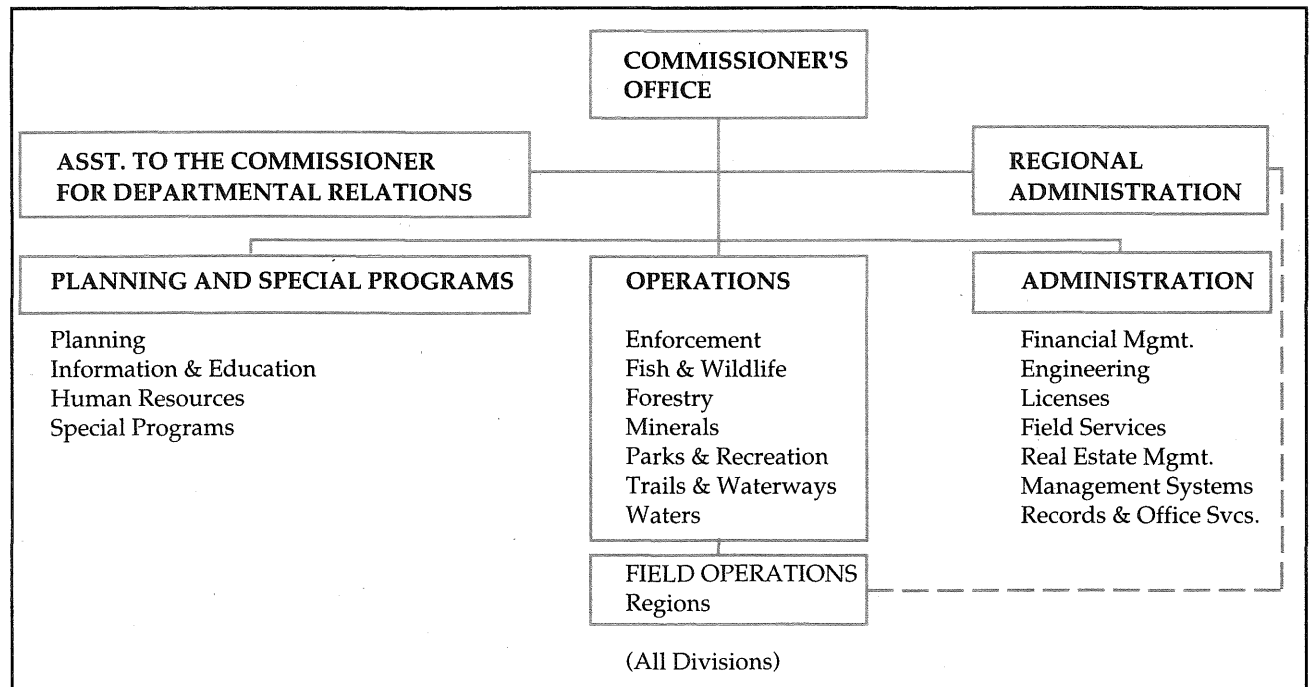
responsible for the management and regulation of the natural resources reflected in its title. The director of each division and unit is appointed by the Commissioner.

FIELD OPERATIONS - The DNR operates in six administrative regions in Minnesota. Field structure below the regional level varies by division. DNR field offices are located throughout the state based on resource and public service needs.

REGIONAL ADMINISTRATION - In each DNR region, a regional administrator and administrative support staff provide services to field operations, coordinate and monitor departmental programs, and ensure public participation in DNR programs.

ADMINISTRATION - Divisions are supported by several administrative bureaus to generate efficiencies through functional specialization and to prevent unnecessary duplication.

PLANNING AND SPECIAL PROGRAMS - These programs also provide support to the divisions. The three larger bureaus are Planning, Human Resources, and Information and Education. Smaller specialized units include Volunteer Programs, Youth Programs, Affirmative Action, Minnesota Environmental Education Board, and the department library.



DID YOU KNOW THAT...

Forests cover nearly 17 million acres, or about 1/3 of Minnesota's 50 million acres of land.

Forest products are Minnesota's second-largest manufacturing industry. Over 1,750 businesses manufacture wood products in Minnesota.

The Land of 10,000 Lakes actually has more than 12,000 lakes and 92,000 miles of rivers and streams.

Minnesota has more shoreline than California and Oregon combined.

Minnesota has 200,000 acres in 64 state parks.

If all the state's rivers and streams were tied end to end, they would be 25,000 miles long and would circle the earth.

There are over 600,000 registered boats in Minnesota.

Morton Gneiss (sometimes called "Rainbow Granite") is quarried in the Minnesota River Valley and is one of the world's oldest rocks (3.5 to 3.6 billion years old).

The Cuyuna Iron Range is named for Cuyler Adams (who discovered it) and his constant canine companion, Una.

Sioux Quartzite from southwestern Minnesota is distributed nationally for use as an abrasive, in products ranging from toothpaste to poultry grit.

The DNR has inventoried nearly 5 million acres of water, including 1,416,000 acres of Lake Superior.

The DNR rears and stocks 650,000,000 fish per year. 48% of Minnesotans are anglers; 26% of all Americans are anglers.

The deer population in Minnesota, which was 400,000 in 1971, had grown to 1,000,000 by 1988.

Each year 500,000 people come to Minnesota from out of state to fish.

18,000 firearm safety students are trained each year by over 3,000 volunteer instructors.

171 Conservation Officers in Minnesota are each responsible for enforcing hunting and fishing regulations over a 550-square mile area.

