

LEGISLATIVE REFERENCE LIBRARY
3 0307 00004 3029

791029



78/79

LEGISLATIVE REFERENCE LIBRARY
STATE OF MINNESOTA

Minnesota
Department
of
Natural
Resources

HC
107
.M6
A33
1978/79

BIENNIAL REPORT

This document is made available electronically by the Minnesota Legislative Reference Library as part of an ongoing digital archiving project. <http://www.leg.state.mn.us/lrl/lrl.asp>

(Funding for document digitization was provided, in part, by a grant from the Minnesota Historical & Cultural Heritage Program.)





STATE OF
MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

CENTENNIAL OFFICE BUILDING • ST. PAUL, MINNESOTA • 55155

DNR INFORMATION
(612) 296-6157

COMMISSIONER OF NATURAL RESOURCES
Joseph N. Alexander

DEPUTY COMMISSIONER
Steven J. Thorne

ASSISTANT COMMISSIONER (Administrative Services)
Archie D. Chelseth

ASSISTANT COMMISSIONER (Planning)
(To Be Appointed)

DIVISIONS - STAFF DIRECTORS

ENFORCEMENT
(To Be Appointed)

FISH & WILDLIFE
(To Be Appointed)

FORESTRY
Rodney Sando

MINERALS
Elwood Rafn

PARKS & RECREATION
Don D. Davison

WATERS
Lawrence Seymour

REGIONS - ADMINISTRATORS

REGION I (NORTHWEST)
Merlyn Wesloh

REGION II (NORTHEAST)
Milton Stenlund

REGION III (CENTRAL)
Roger Lorenz

REGION IV (SOUTHWEST)
Maynard Nelson

REGION V (SOUTHEAST)
Robert Story

REGION VI (METRO)
Donald M. Carlson

LEGISLATIVE REFERENCE LIBRARY
STATE OF MINNESOTA

T A B L E O F C O N T E N T S
 MINNESOTA DEPARTMENT OF NATURAL RESOURCES
 BIENNIAL REPORT 1978-79

TABLE OF ORGANIZATION	iii
COMMISSIONER'S PREFACE	iv
INCOME AND EXPENDITURE CHARTS	vi
DEPARTMENT ACTIVITIES	
Fish Management	1
Wildlife Management	10
Ecological Services	17
Forest Management	21
Minerals Management	34
Parks and Recreation Management	43
Water Resource Management	54
Enforcement	64
Planning and Research	65
Soil and Water Conservation Board	72
Information and Education	75
Legal	78
Regional Administration	79
Land Management	81
Engineering	86
Financial Management	87
Personnel	88
Affirmative Action	89
Community Liaison	90
Field Services	91
Licensing	92
Management Information Systems	92
Records and Office Services	93

*Special Projects
Community Liaison
Legislation
Special Services

Commissioner *
Deputy Commissioner

Commissioner's Staff

Legal Bureau

Information & Education

Controller

Assistant Commissioner/Planning

Assistant Commissioner Administration

Citizen Participation

Comprehensive Planning Bureau

Project Planning Bureau

Regional Administrators

Bureaus**

Directors* * *
(Divisions & Boards)

Field Support Services

Field Operations

**Lands
Fiscal
Licenses
Personnel
Engineering
Field Services

* * *Waters
Minerals
Forestry
Enforcement
Fish & Wildlife
Parks & Recreation
Environmental Education Board
Soil & Water Conservation Board

Commissioner's Preface

Despite the many problems and challenges experienced by the Department in the management of Minnesota's natural resources, and associate outdoor recreational activities, significant progress was made during fiscal years 1978-79, the period addressed by this Biennial report.

We preface the report with brief reference to events of the current decade which provide a perspective of the complex, often controversial responsibilities charged to the DNR.

These obligations encompass extensive regulatory and land acquisition activities. They are reflected in State Parks expansion and development; by Memorial Hardwood Forest projects; by Wild and Scenic Rivers, and public waters designation programs; by authorities related to water appropriation permits, timber wolf management, the establishment of a Recreational Trails System and the minelands reclamation program.

Concurrently, the Department has been confronted by comprehensive reorganization, implementation of a new fiscal concept, and the severe budget drain occasioned by critical fire crisis of 1976. Frequent top-level administrative changes over the past two years have accentuated management problems.

Despite these challenges, and the "changing times" impact of socio-economic trends (inflation, intense competition for land, public antagonism toward government), the DNR can document most positive accomplishments during the biennium; specifically:

-- Substantial progress in developing a more efficient, functional DNR organizational structure. Acting on the recommendations of a specially created management Task Force, the Commissioner restored line authorities, central disciplines to regions. Related organizational changes will result in enhanced communications, management responsiveness, and dollar savings.

-- Creation of the Office of Citizen Participation Coordinator, including the ombudsman role. This will insure involvement and input of the private sector in the DNR decision-making process -- before, not after the fact. The office also provides a vehicle for direct citizen informational inquiries via a statewide, toll-free telephone system.

-- Opening of the St. Croix Wild River State Park, an inspiring product of private and state cooperation, and a reflection of overall progress in parks management.

-- Completion of significant links in the near 8,000 mile, multi-purpose recreational Trails System, recognized for its pre-eminent national status by the National Trails Symposium.

-- Acquisition of perpetual easements to corridors on 84 miles of trout streams, providing angler access and streambank protection. Key acquisitions of wildlife management areas with exceptional potential
-- examples of private sector-state cooperation.

-- Extensive progress in the statewide, comprehensive timber resources survey, a fundamental prerequisite for the DNR's proposed intensive forest management program, strongly supported by timber producers and small loggers alike. (Priority concern for this program is accentuated by new BWCA legislation and Superior National Forest management policies which sharply curtail harvestable softwoods.)

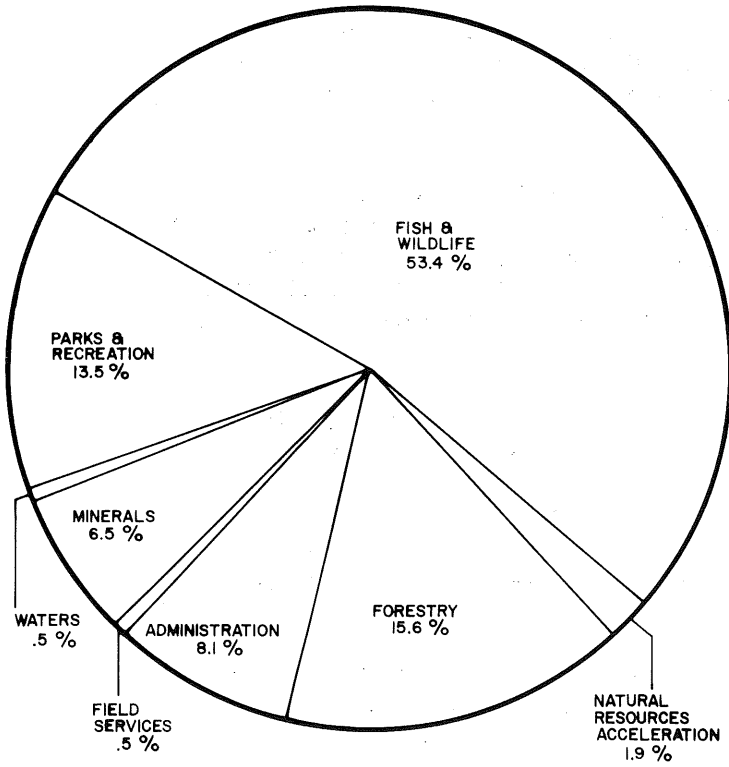
-- Significant progress toward completion of management plans required by the Outdoor Recreation Act, a prerequisite to State Parks classification and development.

-- Providing protection for the Kettle River via acquisition of 12.3 miles of scenic easements, as well as critically important acquisitions on other classified rivers.

Substantial gains should also be noted in DNR affirmative action programs, and vital intangible areas, including personnel morale.

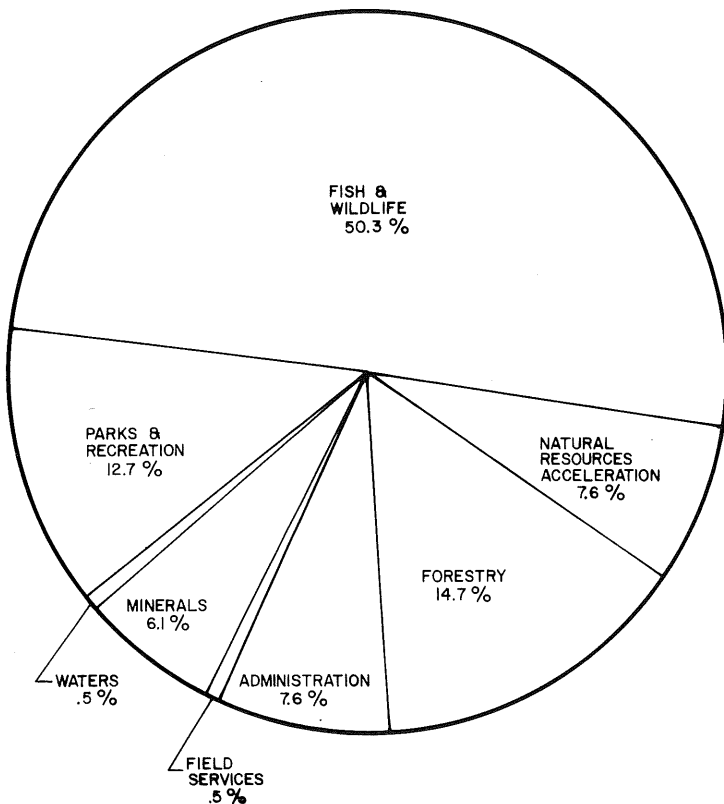
#

WHERE YOUR NATURAL RESOURCES DOLLAR COMES FROM



RECEIPTS JULY 1, 1977 - JUNE 30, 1978
(Actual)

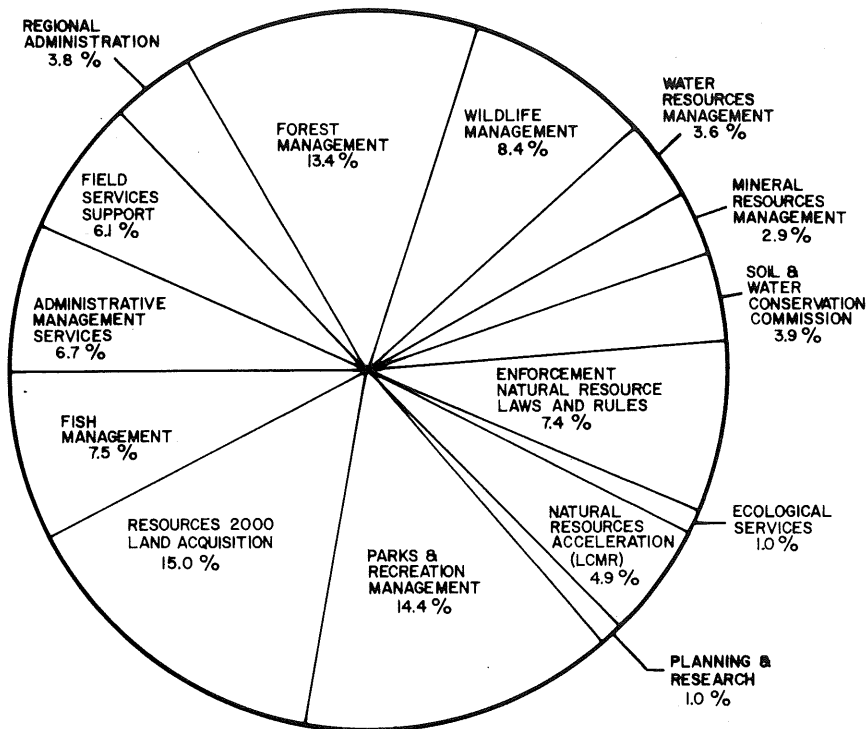
Administration	\$ 2,495,020
Field Services	166,279
Waters	156,494
Minerals	2,016,410
Forestry	4,817,954
Fish and Wildlife	16,513,709
Parks and Recreation	4,171,827
Natural Resources Acceleration	575,602
<u>Total</u>	<u>\$30,913,295</u>



RECEIPTS JULY 1, 1978 - JUNE 30, 1979
(Estimated)

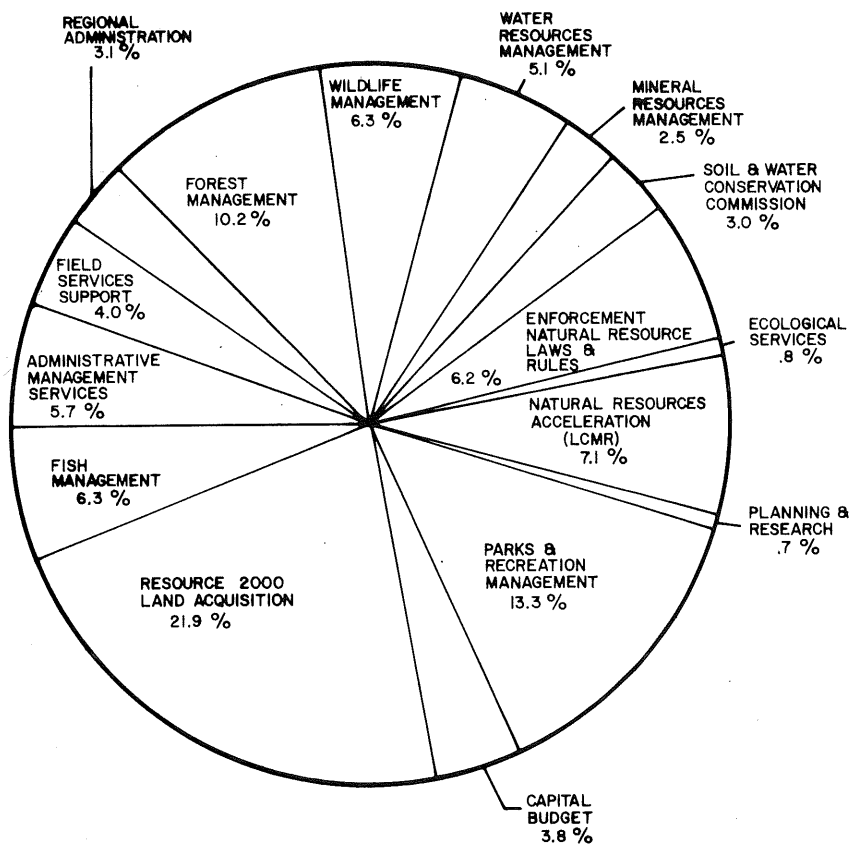
Administration	\$ 2,619,000
Field Services	175,000
Waters	165,000
Minerals	2,115,000
Forestry	5,050,000
Fish and Wildlife	17,350,000
Parks and Recreation	4,380,000
Natural Resources Acceleration	2,624,000
<u>Total</u>	<u>\$34,478,000</u>

WHERE YOUR NATURAL RESOURCES DOLLAR IS SPENT



EXPENDITURES JULY 1, 1977 - JUNE 30, 1978
(Actual)

Administrative Management Services	\$ 4,402,500
Regional Administration	2,524,300
Field Services Support	4,016,400
Water Resources Management	2,352,700
Mineral Resources Management	1,896,600
Forest Management	8,804,500
Fish Management	4,940,100
Wildlife Management	5,552,800
Ecological Services	633,400
Parks and Recreation Management	9,498,600
Soil and Water Conservation Commission	2,552,900
Enforcement Natural Resource Laws and Rules	4,893,800
Planning and Research	643,200
Natural Resources Acceleration (LCMR)	3,197,800
Resource 2000 Land Acquisition	9,884,100
Total	\$65,793,700



EXPENDITURES JULY 1, 1978 - JUNE 30 - 1979
(Estimated)

Administrative Management Services	\$ 4,915,100
Regional Administration	2,671,000
Field Services Support	3,467,100
Water Resources Management	4,401,500
Mineral Resources Management	2,177,100
Forest Management	8,836,200
Fish Management	5,490,300
Wildlife Management	5,452,200
Ecological Services	686,000
Parks and Recreation Management	11,521,100
Soil and Water Conservation Commission	2,633,000
Enforcement Natural Resource Laws and Rules	5,357,600
Planning and Research	645,700
Natural Resources Acceleration (LCMR)	6,158,100
Resource 2000 Land Acquisition	18,981,048
Capital Budget	3,300,800
Total	\$86,693,848

FISH MANAGEMENT

The State of Minnesota contains about 2.5 million acres of fishing lakes and 17,000 miles of fishing streams which require management to satisfy two million anglers. This is the job of the Section of Fisheries whose field force operates from six Regional and 26 Area and substation offices. It is accomplished through improvement of the habitat for game fish, propagation and distribution of fishes, rough fish control and lake rehabilitation. A large survey program is maintained to provide current information on the status of fish populations as the basis for the distribution of the management effort. A fisheries research program continues to develop new management methods, improve techniques and supply the basic information for understanding of fisheries problems.

Habitat development is preceded by obtaining control of fish management sites either through the purchase of the land in fee title, or by acquiring perpetual easements for the necessary rights of access and development. Corridor easements have been acquired on 29 trout streams for a total of 43 miles (804 acres) of fishing access, and negotiations are in progress for easements on 39 streams totalling 41 miles (633 acres) of fishing access. Fifteen northern pike spawning areas have been purchased and 6 others totalling 91 acres are being negotiated. One public lake access of four acres has been purchased, one of eight acres has been optioned, and one of two acres is being negotiated.

Stream improvement through habitat development in this biennium has benefited 17 miles along 8 steelhead streams on the North Shore, and 88 miles along 31 inland trout streams. Construction contracts have been completed for two northern pike spawning areas, five rough fish barriers and three rough fish traps; and additional construction is scheduled to start in FY 79 for one spawning area, two barriers and three traps. The Fisheries construction crew made improvements to seven rough fish control sites, five spawning areas, five flowages and ten hatcheries.

During the Biennium, 609,360,046 fish of all sizes were raised and distributed, most of which were from the following facilities:

- 30 Walleye Spawning Stations
- 14 Walleye Hatcheries (7 of which also hatch sucker eggs and 2 of which also hatch muskie eggs)
- 174 Walleye Rearing Ponds
- 2 Muskie Spawning Stations
- 18 Muskie Rearing Ponds
- 13 Sucker Spawning Stations (to supply food for muskies)
- 5 Trout Hatcheries and Rearing Stations
- 66 Controlled Northern Pike Spawning Areas
- 52 Northern Pike Winter Rescue Sites

In addition, an uncounted number of northern pike are released from 52 natural spawning areas which receive management and protection from

the Section of Fisheries.

Improvements were made at five hatcheries and sixteen fish rearing sites. One hatchery was disinfected for disease prevention. Construction has begun on a new walleye spawning station, and a contract has been let for replacing the water supply piping in one hatchery.

A total of 9,683,953 pounds of rough fish were removed from Minnesota waters during the biennium, benefiting 584 lakes covering 359,160 acres. The commercial value of the fish totalled \$875,752 of which the state's share was \$139,118.

Comprehensive biological surveys were made on 1,974 lakes and 247 streams during the biennium. These surveys aid fish managers in the programming of stocking and other fish management efforts that increase the productivity of our waters for the fisherman. Fish were collected from an additional eighteen rivers and six lakes to provide representative data on pesticide levels in fish.

Eleven warmwater lakes and ten trout lakes have been chemically treated to eliminate rough fish and have been restocked with game fish.

Commercial fishing is permitted under license in Lake of the Woods, Rainy Lake, Namakan Lake, Lake Superior and parts of the St. Croix River and Mississippi River; with license revenues totalling \$111,981 for the biennium.

The fisheries research program is conducted to obtain information directly related to current and anticipated fisheries problems. Three coldwater studies and six warmwater studies were completed during the biennium and final reports were written. One new study was begun on lake aeration, and fourteen studies are continuing.

Habitat Protection and Development

Fish are prolific animals which are capable of maintaining themselves in adequate numbers where they are living in suitable habitat. One of the most important thrusts of the fish management program is aimed at the protection and improvement of the habitat. The elements most likely to be lost to shoreland development are spawning ground and cover for small fish. These are protected through acquisition and placement in public ownership and through the Department's statutory authority over private aquatic vegetation control and modification of the current or cross section of the beds of public waters. Other measures have to do with the prevention of rough fish migration into good fishing waters and the restoration or redevelopment of lost spawning areas.

Land Acquisition

The acquisition of land by the Fisheries Section is confined to the purchase of perpetual easements and fee titles on corridors along trout streams, on sites for northern pike spawning areas and sites for the construction of rough fish control devices. The easements (or fee titles in a few cases) on trout streams allow public fishing and stream improvement work by fisheries crews. Purchases by fee title or easement are

made for tracts which provide natural northern pike spawning areas or areas where water levels can be controlled in spring to provide uniform spawning conditions each year. Land control for construction of rough fish barriers and traps is also obtained at strategic locations on lake outlets and on marsh outlets adjacent to lakes. An effective method for controlling rough fish populations is to stop their movement into lakes and to deny them from their best spawning areas (marshes). Additionally, some acquisition effort has been needed for lake accesses on Metropolitan area lakes.

A total of 158 parcels on 43 miles on 28 streams, 18 parcels at 12 spawning sites, 26 parcels at 13 rough fish control sites and 2 parcels for lake accesses have been purchased or optioned from the start of the Biennium up to October 13, 1978. A total of 145 parcels are in the process of appraisal and negotiation for option. Among these are: 117 parcels on 41 miles of 37 streams, 23 of which are additional to the group already optioned or purchased; 14 parcels at 4 additional and 2 established spawning areas; 12 parcels at 8 sites for rough fish control; and 1 parcel for lake access.

Stream Improvement

Habitat improvement work is undertaken on trout streams to prevent bank erosion, provide more fish shelter, improve spawning conditions and provide fishing and stocking trails. The work is carried out on stream lengths where easements to Fisheries have been obtained. One of the important projects on the streams in the Lake Superior drainage system is to modify natural barriers (waterfalls or cascades) by making step-pockets to provide passage for adult trout and salmon. This provides more stream length for spawning and fishing.

Work was done on eight different anadromous streams in two seasons (1977-78) which benefited 17.24 miles of stream length. Work was done on 31 different non-anadromous streams which benefited 88 miles of stream length. It is expected that work will commence in the spring of 1979 on several streams, but will not be completed by the end of the current Biennium.

Development (Contract Construction)

Two northern pike spawning areas were constructed during the Biennium and one is planned for bid letting in Spring 1979. In addition, five rough fish barriers and three rough fish traps have been constructed, and two barriers and three traps are planned for bid letting in spring 1979.

Development (Force Account Construction)

The Fisheries construction crew worked at 12 locations (rough fish control sites, northern pike spawning areas, habitat improvement and Headquarters and miscellaneous sites) in the fall of 1976; at 12 locations in 1977 and 15 in 1978. In addition to these, other projects having to do with fish hatcheries are covered in this report in the Section, "Improvements to Production Facilities," under "Fish Production and Distribution".

Fish Production and Distribution

Each year, fish from state hatcheries, rearing ponds and rescue sites are stocked in some 1,300 public fishing waters where facilities for natural reproduction of certain species are lacking; or where current local conditions have been unfavorable. Included are about 144 managed stream trout lakes, and 210 trout streams, that are stocked annually.

A total of 609,360,046 fish weighing 420,729 pounds were stocked in this biennial period. While most of these fish were produced in state rearing facilities, there was some augmentation from Federal hatcheries. Most significant of these contributions were 443,762 catfish for inland lakes and streams and 624,792 lake trout for stocking in Lake Superior.

Listed below are the numbers of fish by species and sizes:

<u>Species</u>	<u>Adults</u>	<u>Yearlings</u>	<u>Fingerlings</u>	<u>Fry</u>
Walleye	7,325	219,609	7,382,766	473,156,800
Northern Pike	14,498	10,360	6,394,840	600,712
Muskellunge		49,978		570,000
Largemouth Bass	370	550	630,000	
Smallmouth Bass			257,809	
Channel Catfish	31	3,447	164,907	
Flathead Catfish	254		33,450	
Blue Catfish		6,335		
Crappie	5,000	600	2,300	
Sunfish	45,120			
Yellow Perch		1,466		
Striped Bass			15,000	1,943
Brown Trout	890	411,450	385,982	28,000
Rainbow Trout	8	540,204	1,744,000	395,000
Brook Trout	15	300,470	565,307	30,080
Lake Trout	1,196	1,700,000	1,315,530	
Steelhead (RBT)		20,263		418,184
Splake			16,600	
Chinook Salmon		7,800	152,461	
Atlantic Salmon			8,092	
Herring				110,865,000
Cisco	17,718			
Sauger				350,000
Bluegill	6,890	2,500	500,936	
<u>Totals</u>	<u>99,315</u>	<u>3,275,032</u>	<u>19,569,980</u>	<u>586,415,719</u>

Spring run Chinook salmon eggs were again obtained from the State of Washington in November 1976 and hatched at the French River facility, for stocking in three North Shore streams. In October 1978 the Fisheries Bureau will be acquiring the fall-run Chinook salmon from the State of Michigan. These fish will be planted (to evaluate them on their availability to the angler) in Lake Superior, and tributary streams.

To meet program needs the Bureau will be obtaining Atlantic salmon and Lake trout eggs from Michigan in the fall of 1978. It is anticipated that these will contribute greatly to the fishery of Lake Superior and some inland lakes.

Improvements to Fish Production Facilities

New fiberglass troughs were purchased for the St. Paul Headquarters to provide better conditions for the rearing and research of future Brown trout brood stock.

The Spire Valley Rearing Station near Remer was completely disinfected in 1978, to reduce the incidence of disease outbreak.

Construction has started on a new Walleye stripping station on the St. Louis River. It is hoped that it will be ready for the spring run in 1979.

Improvements by the Fisheries construction crew and Station personnel were completed on 9 Northern Pike spawning areas, 4 Musky rearing ponds, 1 Walleye pond, and 2 Trout rearing ponds.

New raceways that are being utilized for brood stock were completed at the Lanesboro trout hatchery and the hatchery building was remodeled.

An emergency water supply system was added to the French River Hatchery; as well as completion of garage and workshop, installation of a security fence and blacktopping the roadway.

The Cut Foot Sioux Hatchery was remodeled to provide for greater production of walleyes.

A contract was let to replace the water supply piping at the St. Paul Hatchery.

Rough Fish Removal

During this Biennium, rough fish control effort was extended to 584 lakes covering 359,160 acres. A total of 9,683,953 pounds of rough fish, with an estimated total value of \$875,752 were removed from this acreage. Income to the Game and Fish Fund from sale of state fish, from the state's percentage on the catch and from contract fishermen amounted to \$139,118.67.

The 26 contract fishermen (who operate on Minnesota inland waters with seines, hoop nets and trap nets) removed 7,683,992 pounds of rough fish from 270 lakes during this Biennium. The fishermen are limited to the use of this gear, which captures and holds fish alive, in order to return all game fish to the water. Fisheries personnel supervise each operation to insure the proper handling of game fish, and to verify the rough fish removal poundage for payment to the State. These fishermen pay (as indicated in contracts based on their sealed bids) a set price per pound for each species and for each size class. This source of revenue contributed \$87,810.47 to the Game and Fish Fund.

Rough fish removal operations conducted solely by state day labor personnel benefited 194 lakes this Biennium. A total of 1,622,856 pounds of rough fish were removed from these lakes. Sales of fish from this source, conducted by the St. Paul Office, returned \$51,308.20 to the Game and Fish Fund.

Free permits are issued to private individuals or organizations interested in taking rough fish from tapping sites during spawning runs. This Biennium, 157 traps and shutoffs, were operated to deny rough fish access to spawning areas or lesser populated waters. These operators removed 250,074 pounds of rough fish in this biennium.

Pounds of fish removed and approximate value, based on price of fishes alive--FOB lakeshore:

FY 76-77: 4,798,239 lbs; \$444,089
 FY 77-78: 4,885,714 lbs; \$431,663

Lake and Stream Surveys

An extensive program of surveys and inventories of fishing waters must be maintained to provide current information on the status of fish populations and the condition of the habitat, in order to form the basis for distribution of the management effort. Information is collected on the physical, chemical and biological characteristics of the waters, as well as detailed information on the species composition, relative abundance and age and size distribution of the fish population.

A total of 1,974 lakes were examined for some fish management concern during the reporting period. A total of 615 of these were for dissolved oxygen levels during critical periods of the year. Stream surveys in this same period totaled 247.

This work is reimbursed 75 percent by the U.S. Fish and Wildlife Service, under provisions of the Dingell-Johnson Fish Restoration Act.

Collections of fish for pesticide residue analysis were made in cooperation with the Minnesota Pollution Control Agency and the U.S. Environmental Protection Agency. Specimens were obtained from 18 rivers and six lakes at sites selected to give background information on the levels of pesticides in the environment, in representative areas of the state. The collections included 25 species of fish.

Lake Rehabilitation

Lakes that have become over-populated with rough fish, or those that are suitable for trout but contain populations of incompatible species, are considered for chemical rehabilitation when they can be isolated from reentry of unwanted fishes by barriers to migration. In the process of rehabilitation, the existing fish population is eradicated with certain chemicals approved by the U.S. Food and Drug Administration, and restocked with the desired game fish combinations. In addition to providing good fishing, this procedure also benefits boating, swimming and waterfowl hunting.

There have been instances in the past two years where one of the two approved chemicals has been unobtainable and the other has been in short supply at a high price. There are good indications that this situation will become less troublesome within a year.

A total of 11 warmwater lakes (including 3 walleye lakes) totaling 1,744 acres and 10 trout lakes totaling 359.3 acres have been treated during the three fall seasons covered by this Report. These projects were reimbursed 75 percent by the U.S. Fish and Wildlife Service under provisions of the Dingell-Johnson, Fish Restoration Act.

Commercial Fishing

Licensed commercial fishing is permitted by law on several of the State's boundary waters. These are Lake of the Woods, Rainy Lake and Lake Namakan on the Canadian boundary; Lake Superior; and Lake St. Croix and the Mississippi River. The Department supervises and regulates these fisheries to prevent undue depletion of the fish stocks, and to provide for an equitable allocation of the harvest between the sport and commercial fisheries where there are species of value to both user groups. Information on production and on the status of the fish stocks is obtained from summaries of the monthly reports of the daily activities of the fishermen.

Revenue to the Game and Fish Fund from commercial fishing license sales totalled \$111,981 for the Biennium.

Canadian Boundary Waters

The total catch of all species and the value of the catch, on the three Boundary Waters, by years:

Lake of the Woods:

1976: 811,246 lbs; \$219,986.28
1977: 1,056,039 lbs; \$248,587.52

Rainy Lake:

1976: 70,341 lbs; \$30,466.94
1977: 91,384 lbs; \$36,749.25

Lake Namakan:

During the Biennium there was no interest indicated by commercial fishermen to continue this fishery.

License revenue from commercial fishermen on the Canadian boundary waters amounted to \$4,197.50 for the Biennium.

Lake Superior:

Pounds of fish removed and value of the catch by commercial fishermen by year, on Lake Superior:

1976: 3,000,481 lbs; \$227,576
1977: 1,886,297 lbs; \$189,537

The license structure and the laws governing commercial fishing on Lake Superior were changed during the reporting period. The license

presently permits use of a specified amount of gear, where formerly in designated the size of boat that could be operated. The new law places a limit on the total amount of gear that can be operated on the lake, and a limit for each licensee. Qualifications as to performance are required for the relicensing of fishermen each year, and other qualifications are required for new licenses.

Wisconsin Boundary Waters

Mississippi River:

Pounds of fish removed and value of catch, by commercial fishermen, by year, on the Mississippi River:

1976: 610,139 lbs; \$61,137.69

1977: 504,793 lbs; \$54,663.86

Two factors influenced the fishery in the reporting period which reduced the number of participants and the amount of gear licensed. In 1977 a major license fee increase was implemented and the State Department of Agriculture released a statement limiting the amount of certain fish taken from these waters to be consumed by the public, because of PCB contamination. These fishes were above federal action guidelines on amount of PCB's contained in the flesh and therefore were illegal for interstate shipment.

Lake St. Croix:

During the Biennium there was no interest indicated by commercial fishermen to continue this fishery. The State continues to solicit fishermen to work this water.

Commercial Turtle Harvest

Summaries of the production reports required of commercial turtle dealers reveal the following harvest statistics:

1976: 58 licenses; 6,465 harvested

1977: 58 licenses; 5,195 harvested

License receipts for the Biennium -- \$2,900.00

During the Biennium snapping turtles (chelydra serpentina) were afforded protection of law by the 1975 Legislature. Snappers less than 10 inches across the top of the shell were protected from harvest. Trapping, and having more than 25 turtles in possession was restricted to residents holding a Turtle or Tortoise license. These restrictions were established because of concern over the apparent dwindling snapping turtle population.

Licensed Harvest of Frogs

Leopard frog populations remained at a low level during the Biennium. Although they appear to be at a stable level, this level is very low when compared to peak harvest years, so the restriction on the harvest of frogs for human consumption remains in effect.

Licensed Minnow Dealers

In 1976, for the first time, a reporting system was started among minnow dealers. Annual reports of minnows harvested, purchased and sold are required from each dealer prior to issuance of a new license. This reporting system was started to provide data to the Section of Fisheries for future management decisions.

Further, a study of the bait industry was inaugurated under a federal aid program of the National Marine Fishery Service. The bait industry is the most valuable by far of all the state commercial fisheries. The study, which will reveal for the first time the volume of the bait fish harvest by species groups and market size classes and the value of the catch, will be completed by June 30, 1979.

The minnow dealer harvest and export data by year, in gallons:

1976: Total Harvest: 351,260 gals. Exported: 93,306 gals.
 1977: Total Harvest: 303,864 gals. Exported: 71,085 gals.

Minnow dealer license receipts for the Biennium: \$79,932.50.

Fisheries Research

During the Biennium the Fisheries Research unit carried out 23 management-oriented investigations under Federal Aid. Of these, 19 were under Dingell-Johnson Project F-26-R, two were under Fish and Wildlife-1-R and one each under the Anadromous Fish Act and the Commercial Fisheries Research and Development Project.

Six studies on warm water fishes were completed and final reports were published as Investigational Reports, or will be completed by the end of FY 79.

Three studies on cold water fishes and one limnological investigation were completed. Two final reports were published as an Investigational Report and a Social Publication. A third Investigational Report is in preparation to be published.

A new study on lake aeration was begun.

Publications completed during the reporting period include three fisheries investigational, three special publications, six miscellaneous technical journals. Five additional reports are in preparation.

#

WILDLIFE MANAGEMENT

Wildlife Land Acquisition

During Fiscal Year 1977, the Department of Natural Resources' Section of Wildlife acquired 6,032 acres of wildlife lands. These lands were brought into State ownership at a cost of \$1,472,403. In FY 78, an additional 7,226 acres of wildlife lands were acquired at a cost of \$2,044,308. These lands, totaling 14,258 acres, were located in 85 wildlife management areas in 42 counties. During FY 78, the entire wildlife land acquisition budget for the 77-79 Biennium was obligated.

Gift Program

A total of 3,431 acres of land were received in six gifts for use as wildlife management areas. The gift program has been an important supplement to regular wildlife habitat acquisition efforts.

Wildlife Development

Migratory Waterfowl Stamp

The State Migratory Waterfowl Stamp has increased funds for wetland development projects on state-owned Wildlife Management areas and lakes designated for wildlife management purposes.

The 1977 appropriation totaled \$400,000 -- part of which is to be spent to create new waterfowl areas on the following Wildlife Management areas:

Little Hill WMA, Aitkin County -- 180 acres; Sartell WMA, Morrison County -- 100 acres; Cedar Rock WMA, Redwood County -- 60 acres; Talcot Lake WMA, Cottonwood County -- 35 acres; and Gores Pool WMA, Dakota County -- 600 acres.

Other projects include the construction of barriers to prevent rough fish migration and water control structures to increase management capability on existing areas. The seven projects constructed in FY 78 improved 5,321 acres. Other projects included the improvement and creation of 35 waterfowl breeding sites -- such as pothole construction -- and the improvement of two access roads to wetland areas.

Duck stamp funds for FY 79 will be directed to great extent towards new impoundments on State Wildlife Management areas and work on lakes designated for waterfowl management.

Emergency Drought Funds

During the 77-78 Biennium, the U.S. Congress offered federal funds for the construction of projects which would help alleviate problems caused by the drought of 1976. The Section of Wildlife applied for and received \$326,000 in federal funds for the following projects:

Four miles of dike were constructed to improve a 550-acre impoundment on the Eckvoll WMA, Marshall County. A control structure and dikes were replaced to impound 200 acres of water in the Red Lake WMA. Also in the Red Lake WMA, a control structure was replaced on the Bednar impoundment. A 90-acre pool was created at the East Park WMA, Marshall County; and 134 dugouts for waterfowl and big game were built in several Kittson and Marshall county Wildlife Management Areas. Two water pumps for flooding pools were purchased.

Resource 2000 Development Funds

The Legislative Commission on Minnesota's Resources (LCMR) made \$500,000 available to the Section of Wildlife for the improvement of state-owned wildlife management areas. Development efforts stress the posting and fencing of boundaries, improvement of access trails and parking lots, the purchase of seed for nesting cover, and several other management practices to benefit wildlife and the user-public.

Wetland Wildlife

The maintenance and management of existing wetlands and waterfowl impoundments involve the repair of dikes and water control structures, and the manipulation of water levels. During 1978, maintenance and management work was performed on 52 areas totaling 44,105 acres of wetlands. An estimated 42,000 acres of wetlands will be managed in 1979.

During 1978, an additional 238 small wetlands were created. These projects include the creation of small open water areas by reclaiming small potholes, constructing dugouts, level ditches and canals.

Installing and maintaining nesting structures for geese and wood ducks is an important function for the wetland wildlife program. A total of 899 structures were installed and maintained during FY 78. An equal number is planned for FY 79.

Farmland Wildlife

Wildlife of the agricultural areas basically requires food and cover for survival and reproduction. To provide cover during winter storms, 97 woody cover sites were planted on Wildlife Management areas. An additional 45 new sites are planned for 1979. To provide food for wintering wildlife -- such as pheasants, squirrels and songbirds -- 541 food plots were established. An increased number of food plots is planned for 1979.

Providing a dense nesting cover for ground-nesting songbirds, upland-game birds and waterfowl is a vital management practice. For 1978, only 2,540 acres were planted and improved -- which was less than expected. For 1979, an estimated 5,000 acres will be planted and improved.

The control of noxious weeds on State Wildlife Management areas is required by state law. During 1978, a total of 8,727 acres were treated chemically and mechanically by mowing. For 1979, the acres treated is expected to be similar.

Forest Wildlife

Forest habitat improvement, primarily for deer and grouse, in 1978 included 4,143 acres of browse regeneration, 740 new and maintained forest openings, and 68 forest food plots. In addition, 26 timber access roads were created to assist in logging and forest regeneration management practices. For 1979, it is planned to maintain browse regeneration, forest openings, forest food plots and maintain creation of timber access roads near the 1978 level.

Management -- Wildlife Management Areas

Besides the management and manipulation of terrestrial and aquatic vegetation, much effort is required to protect these resources and provide facilities for the public.

Wildlife managers maintained and marked 4,004 miles of boundary, including fencing and the posting of signs. Also, 683 public use facilities were created and maintained including trails, parking lots, hunting blinds and other accommodations.

Other Key Wildlife Programs

Under the Wildlife Habitat Improvement Program (WHIP) cost-sharing of \$50,000 during FY 77 and \$87,000 during 1978 provided landowners with incentives to develop 115 winter woody cover plantings, 248 food plots, 84 acres of nesting cover and 193 acres of waterfowl impoundments.

More than 500 outdoor-oriented organizations have attended pheasant clinics and undertaken 850 habitat projects to fulfill requirements for the Habitat-Pheasant Chick Program. This effort continues to emphasize the importance of habitat. It also identifies raising and releasing pheasants as an enjoyable and interesting incentive for undertaking habitat projects, but of little help to established pheasant populations.

Wildlife managers are involved in various environmental investigations -- from evaluating oil spills to providing information for the preparation of Environmental Assessments. Reviewing highway, pipeline and transmission line routes and providing recommendations is commonly performed. Other environmental review includes sewage disposal plans, dredging plans, ditch proposals, water permit applications, watershed projects and numerous construction projects. An ever increasing amount of effort is directed to these programs, with less time available for other projects.

Hunting Seasons

Deer firearms hunters again had an opportunity to choose their own hunting season. In 1976, different time frames were made available for buck-only hunting, along with some antlerless permits in the agricultural areas. A similar deer season, with expanded permit areas, was offered in 1977.

Statistics for the 1976 and 1977 deer hunting seasons were as follows:

	1976		1977	
	<u>License Sale</u>	<u>Harvest</u>	<u>License Sale</u>	<u>Harvest</u>
Deer Firearms	263,874	28,613	288,616	45,918
Bow and Arrow Deer	19,733	1,167	29,826	2,600

A fourth moose hunt was held in the fall of 1977 -- 930 permits were issued to Minnesota resident hunters in parties of four to each permit. Ten zones were established in northwestern Minnesota, where 598 moose were taken on 630 permits. Northeastern Minnesota had 14 zones, with 243 moose harvested on 300 permits.

Hunting seasons for waterfowl and small game are established to provide maximum hunting recreational opportunity without harming wildlife populations. A total of 234,204 licenses were purchased by small game hunters in 1976 and 306,881 in 1977.

The duck harvest, according to mailed questionnaires, totaled 869,000 in the fall of 1976, and 950,000 in 1977. The Canada goose harvest was 68,000 and 58,000 in 1976 and 1977, respectively. Harvests were somewhat lower, due to many wetlands which were dry throughout much of the state during this period.

Pheasant hunting showed an increase in harvest over the previous ten-year average; 250,000 roosters were taken in 1976, and 397,000 in 1977. The harvest of ruffed grouse has also increased, along with the bird's population: 332,000 birds were harvested in 1976, and 630,000 in 1977. Hungarian partridge showed a historical high harvest of 79,000 birds in 1977. During the fall of 1976, about 52,000 Huns were taken.

The harvest of squirrels, rabbits, hares, and raccoons has risen -- which generally reflects their population increases. The hunting and trapping harvest is noted by year:

	<u>Hunting</u>		<u>Trapping</u>	
	<u>1976</u>	<u>1977</u>	<u>1976</u>	<u>1977</u>
Squirrels	447,000	712,000	(Not recorded)	(Not Recorded)
Rabbits, Hares	253,000	519,000	"	"
Raccoon	104,000	109,000	32,000	32,000
Fox: Red and Gray	30,000	23,000	53,000	23,000

In 1977, registration of fisher, bobcat and lynx was required. A total of 2,150 fisher, 103 bobcat, and 21 lynx were registered as trapped.

(Results of the 1978 seasons will not be available until a later date.)

Wildlife Research, Census and Survey

Review of Program

Emphasis was increased in FY 78 to assist in field data collection, data processing, design of surveys and experiments, and report preparation. In FY 79 emphasis will be on field data collection, obtaining and cataloging of scientific literature, and more complete use of data processing. Some of this will be accomplished through cooperative agreements with the University of Minnesota.

The immediate goals of the Research Unit are: More prompt and accurate reporting of research, census and survey findings; and greater thoroughness in statistical analysis and general study design. The objective is to place higher quality results more quickly in the hands of managers. A longer-term goal is to stress research, census and survey; which has greatest potential to solve wildlife problems and increase the wildlife productivity of the land.

Farmland Wildlife

Annual surveys are conducted on the population status of farmland wildlife species which are hunted or trapped, plus a few species of special interest, such as prairie chickens. Farmland research focuses mainly on the relationships between wildlife populations, their limiting factors, and agriculture. Thus roadside management, farm windbreaks, pesticide effects, deer-proof fences, and basic farmland deer ecology are stressed.

A notable example of results from recent research and survey is the success of the present system of deer hunting regulations, which has been able to maintain the deer herd near the desired population levels in the agricultural area. This was not possible under the earlier system of hunting regulations. This improved system requires accurate forecasting of deer herd statistics, which in turn are dependent upon quality research and survey data.

A second example of employing the results of research is the development of a roadside management program. In this case, research results have been compared with findings from other states -- such as highway maintenance needs -- and the information presented in a symposium to the public, highway officials, local government officials, and other interested persons. Interest generated has resulted in an interagency committee which is attempting to implement a roadside management plan. If successful, the efforts will hold considerable promise of partially offsetting losses of nesting cover for pheasants and other wildlife species in agricultural areas.

Forest Wildlife

Population monitoring for deer, moose, grouse, beaver and forest predators was continued during the biennium. The spring pellet count and other herd statistics for deer provide data used extensively for establishing hunting seasons. Aerial moose censuses and summer productivity surveys are undertaken annually to determine population levels, productivity, and survival of the herd. Sharp-tailed grouse are censused each spring through

dancing ground surveys; and ruffed grouse by drumming counts. Aerial transects are flown to determine changes in abundance of beaver in northern Minnesota.

Forest research is focusing on deer physiology, deer habitat requirements, forest predator ecology, long-term effects of fire on wildlife populations, and development of an effective deer barrier.

Findings from studies of deer habitat requirements show the need for providing and maintaining open areas and herbaceous stands of green forage during the transition period -- from fall to winter. Research on the long-term effects of fire on vegetation and wildlife populations has been conducted for several years on the Red Lake Wildlife Management Area. Surveys show that burned areas now support three to four times the number of deer as do nearby unburned (control) areas.

Wetland Wildlife

Breeding ground surveys are conducted to estimate the number of breeding waterfowl in the state. Between the breeding and hunting seasons, considerable numbers of waterfowl also are banded, both to achieve Minnesota's share of continental waterfowl banding and management efforts, and to evaluate local conditions (notably the survival and movement of locally raised birds). This information is used to set state hunting regulations and provide input to the federal hunting regulations framework.

Wetland research currently is focused in two areas. One is basic research into the feeding ecology, homing, population, age structure, and productivity of the ring-necked duck.

Relatively little is known about this bird, and research may be quite productive, since in recent years ringnecks are the third most common duck taken by Minnesota hunters. The State also produces considerable numbers of this species.

The second focus of wetland research is on evaluation of wetland development methods. For the past 25 years, very little development work has been done on purchased wetlands. Research is currently under way to: determine methods and equipment most useful in wetland development work; evaluate the effect of wetland development on waterfowl populations and develop a workable wetland management plan which can be employed statewide.

Other Surveys

Annual surveys of hunters and trappers are undertaken on a statewide basis to determine numbers of animals harvested; levels of hunter effort and participation; and related information.

Nongame Wildlife Program

The Department's Nongame Wildlife Program continues to gather data and initiate field research and management on nongame wildlife. Current efforts involve data collection on about 80 selected nongame birds, mammals, reptiles and amphibians.

Special projects currently involve restocking prairie chickens at the Lac qui Parle Wildlife Refuge; a statewide sandhill crane survey; research on the bald eagles; a statewide inventory of heronries; and developing Hearing Island in the Duluth Harbor as a colony site for common terns and piping plovers. Current plans call for investigating the feasibility of restocking otters on the Minnesota River, developing a management plan for bobwhite quail in southeastern Minnesota, and restocking trumpeter swans in west central Minnesota.

Caribou Reintroduction

Cooperative studies are being carried out with the Safari Club (a private sportsmen's organization) and the U. S. Forest Service on the feasibility of reintroducing the woodland caribou to northern Minnesota. Field evaluations have been made, and probably limiting factors identified. Current efforts are directed toward securing necessary agreements, and resolving all problems before an actual reintroduction can take place.

#

ECOLOGICAL SERVICES

The Ecological Services Section provides technical support and biological and chemical laboratory services directly to Department of Natural Resources management, research, enforcement and planning personnel in the field and Central Office; and both directly and indirectly to several million anglers, hunters, trappers, lake property owners, resorters, realtors, and others who enjoy or benefit from the state's natural resources.

Surveys and Investigations

Lake Mapping

Limnological data was collected and sounding conducted on 120 lakes during the Biennium. Fewer lakes have been sounded in recent years because some of the larger lakes are on the project schedule. Hydrographic maps were prepared on 357 lakes previously sounded. These were made available to the public as well as DNR personnel and other agencies. During the remainder of FY 79, two (2-man) crews will sound some 80 lakes (40,000 acres) and prepare 150 maps. Limnological data also will be collected on lakes being sounded, not previously surveyed.

Fish and Wildlife Habitat Evaluation

Field studies and investigations concerning impacts of proposed developments on fish and wildlife were conducted on eight Soil Conservation Service small watershed projects (P.L. 566), and five major and ten smaller Corps of Engineers projects. Detailed field studies on existing fish and wildlife resources were carried out on the Rochester-South Zumbro, Twin Valley Lake (Wild Rice River) and Roseau River Flood Control projects proposed by the Corps of Engineers.

Surveys on physical, chemical, and biological conditions were carried out on 16 shallow waterfowl-furbearer lakes and on the Minnetonka wetlands.

Environmental assessments, impact statements and related documents on 350 proposed development projects of other public agencies, industry and individuals were reviewed and recommendations provided concerning fish and wildlife protection and mitigative measures.

Major River Surveys

Biological surveys were conducted and reports were prepared during the Biennium on the following rivers:

Wild Rice, Roseau, Red Lake, North Fork Crow, Mississippi (St. Cloud to Anoka), Mississippi (Lake Itasca to Lake Winnibigoshish), Rum, Clearwater, Cannon, Minnesota (Big Stone Lake to Fort Snelling), and the St. Louis River.

Monitoring Fish and Wildlife Populations--Vicinity Power Plants

The studies to evaluate effects of NSP's Prairie Island Nuclear Power Plant (Mississippi River) and the King Plant (St. Croix River--every other year) continued through Fiscal Years 78-79. Impingement (on travelling intake screens) and entrainment (young fish passing through the plant) of fish at the Prairie Island plant continued to be a serious problem. Efforts are being made to have NSP make substantial changes in their intake structure to prevent fish kills.

Numerous environmental documents on proposed power plants and transmission lines were reviewed and recommendations provided concerning fish and wildlife protection and mitigatory measures.

Water Quality Monitoring

The long-term program of monitoring trends in water quality in 15 representative fish lakes around the state was continued in FY 78 and FY 79. Five lakes are surveyed each year on a rotation basis.

The evaluation and monitoring of the recovery of Little Silver Creek as a trout stream from alleviation of the effects of the Wrenshall Oil Refinery and Wrenshall Village discharges was continued. The project will terminate when the refinery and the village begin discharging their effluents into the Western Lake Superior Sanitary Sewer System (under construction).

Technical Services

Aquatic Nuisance Control

The Section continued to administer the statewide aquatic nuisance control program, coordinate regional permit activities, provide technical assistance on the use of chemicals and prepare reports. More than 1,000 permits were issued to riparian property owners during the Biennium. About 400 permits for chemical control will be issued during FY 79.

Pollutional Spill and Kill Investigations

Investigation of pollutional spills and related discharges endangering fish and wildlife continued as a Section activity. Most of these occur in the Twin City area and in the Mississippi River downstream to the Iowa border. About 150 National Pollution Discharge Elimination System (NPDES) permit applications were reviewed for fish and wildlife implications. These permits are issued by MPCS as required by the Environmental Protection Agency.

Technical Assistance and Data Analyses

Lake basin characteristics and fish net catch data has been punched on IBM cards. Water chemistry data from lakes surveyed around the state will be similarly processed and made available for retrieval and analysis in a variety of ways. A report was prepared on the effects of physical stress on aquatic plants and living organisms in the state's streams.

Resource Information Services

About 2,200 requests by the public and other agencies for information about lakes, streams and other natural resources were processed by Section personnel in FY 78 and FY 79.

Statistical Services

Assistance was provided to DNR personnel in a variety of statistical services, as requested.

Laboratory Services

Biology Laboratory Services

The biology-pathology laboratory processed more than 2,900 individual fish and wildlife specimens on which a variety of diagnostic tests and analyses were performed to determine causes of diseases and mortality.

The laboratory coordinated investigations on a number of major fish and wildlife kills around the state. These involved rabies, tularemia, salmonellosis, avian botulism, lead poisoning, and several fish diseases.

Research continued on the incidence, distribution, development and transmission of lymphosarcoma in northern pike and myofibrogranuloma in walleyes.

The laboratory provided analytical assistance to the Enforcement Division in the identification of suspect meats, hairs, bones, blood, and other animal evidence.

Input and cooperation of the laboratory continued as a member of the Great Lakes Fish Disease Control Committee and the Tri-State Fish Medication Clearance Committee.

The laboratory conducted fall and spring inspections and samplings of fish stocks at DNR hatcheries to check for the presence of fish diseases and for the maintenance of sanitation and other disease control measures. Periodic inspections for fish diseases were also made of commercial hatcheries.

Chemistry Laboratory Services

The following were among the analytical services carried out by the Chemistry Laboratory during the Biennium.

A total of 714 water quality analyses of important recreational bodies of waters in Minnesota were completed. The analyses included individual determinations of chloride and sulfate ion concentrations, ortho-phosphorus and total phosphorus concentrations, nitrate, nitrite and ammonia nitrogen concentrations, total kjeldahl nitrogen for protein bound nitrogen determinations, total alkalinity and pH.

A total of 176 water effluent samples were collected, delivered and analyzed by the chemistry laboratory, from the state fish hatcheries

for the Section of Fisheries. This work is required by the National Pollutant Discharge Elimination Systems Act (NPDES) to satisfy the permit conditions for operation of the hatcheries.

A total of 748 assorted deer browse samples were processed and analyzed for nutritive protein to support big game research projects in the Section of Wildlife. Summary reports of this work were made to the big game research section by the chemistry laboratory.

Approximately 260 well samples were analyzed for traces of low molecular weight aliphatic gases by gas chromatography. This work was done for the Division of Waters as part of their permit responsibility for the commercial underground storage of natural gases in Minnesota.

A total of 1,488 fish were collected, processed and analyzed for mercury during the report period. About 640 of these fish were analyzed in connection with the state's annual survey of mercury in rivers; 481 were analyzed in connection with the concern of high mercury levels in northeastern Minnesota. Another 367 fish were analyzed for metal to conclude the effort begun for the Regional Copper/Nickel Mining Impact Study.

About 68 samples were analyzed for PCB's (polychlorinated biphenyls) by gas chromatography for the divisions of Forestry, Wildlife and the Governors Special Herbicide Study Commission.

A total of 73 forest spray samples were analyzed for phenoxy acid herbicides to assist the Division of Forestry report the impact of its use of such chemicals in forest management practices.

About 320 tissues taken from fish collected for the Regional Copper/Nickel Impact Study in northeastern Minnesota were analyzed for submicrogram amounts of copper, nickel, zinc, lead and cadmium by the method of atomic absorption spectroscopy. Statistical analysis and an investigational report is in preparation to cover this work by the chemistry laboratory.

Twenty-eight lakes in the metropolitan area were studied by the chemistry laboratory for the accumulation of chlorides following de-icing salt run-off to determine the extent of the problem and to get a profile on the run-off patterns in the metropolitan area.

Publications and Reports

Ecological Services completed 15 publications and reports during FY 77, and 12 in Fiscal Years 78-79.

#

FOREST MANAGEMENT

The Forest Management Activity encompasses all DNR forestry programs. The Division of Forestry's goal is to achieve, through active leadership and in cooperation with other agencies and groups, effective management and protection of Minnesota's forest environment, an increasing yield of timber, quality recreational opportunities, improved wildlife habitat, and land and water conservation practices that will contribute to Minnesota's economic and social well being. Division of Forestry programs are dedicated to achieving such goals.

Major functions of the Forestry Management Program include forest fire protection on 22 million acres of wild land; insect and disease protection on 19 million acres of forest land; forest and shade tree management assistance to small private landowners, counties, schools and municipalities; and assistance to wood users to improve utilization and marketing of the timber resource. The overall purpose is to maintain the social and economic benefits of forest resources for present and future generations.

The forest fire protection goal is to restrict fire occurrence to 1,100 fires annually, with a maximum of 30,000 acres burned. This level of protection provides a balance between forest and property values protected, and the cost of protection.

State forests and other state-owned lands provide 400,000 cords of wood products annually; about 20 percent of the total supply required by the logging and forest products industries in the state. Timber demand and harvest has gradually increased to the point where the demand for softwood species now exceeds the present supply. At the same time, a static forest management budget has resulted in a steady decline in the state land reforestation effort, and deterioration of state forest roads and recreation facilities. Continuation of this trend will negate most state forest development activities.

Some 2,400 loggers and wood processing companies, representing the state's third largest industry (\$1.3 billion in annual sales), depend on forested lands as a source of supply. Increasing demands are surpassing the state's ability to supply desirable wood volumes.

The 600,000 to 800,000 people who use the state forests for recreation such as hunting, fishing, hiking and the like, will require more recreational opportunities and facilities; particularly for cross-country skiing, hiking and other dispersed area activities.

Five thousand private landowners and 100 federal, state and local agencies obtain tree seedlings from DNR forest tree nurseries. Orders from public agencies will increase about 10 percent per year.

Following are summaries of accomplishments in FY 78 and FY 79, regarding the foregoing and other programs administered by the Division of Forestry.

Fire Protection

The unprecedented fall, 1976 fire season was reviewed in the 1976-77 Biennial Report. During the winter following, the Department was faced with the mammoth task of preparing for the spring 1977 fire season. First, there were 20,000 acres of peat still burning that had to be extinguished prior to the spring season; 30 miles of fire hose had to be gathered, washed, dried, repaired and returned to the districts and fire caches; and thousands of pieces of firefighting equipment including pumps, trucks and hand-tools had to be refurbished.

Training schools in fire behavior, firefighting techniques and fire over-head administration were conducted statewide for Department, county and forest industry personnel. Three 20-man hot-shot crews were recruited and given intensive fire suppression training. These crews were headquartered in DNR Regions I, II and III. Preparations were made for contracting air tankers and helicopters; and plans were made for establishing the air tanker bases -- including staffing, communications and fire retardant loading facilities. The air tanker contracts and tanker base operation involved a multi-agency agreement with the Bureau of Indian Affairs and the U. S. Forest Service.

Early in the spring the Department implemented the National Fire Danger Rating System for use in Minnesota. The new system is more comprehensive than the old, and in addition to being more responsive to drought conditions and their effects, provides a sound weather data base for intensive fire planning.

Snowfall during the winter of 1976-77 was much below normal and it was close to being an "open winter." The soil was void of moisture and the abnormally cold temperatures penetrated deeper than usual, placing additional stress on the larger living fuels that were already under stress, due to the prolonged drought. Most of the snow fell late in the winter and melted rapidly, as the spring thaw came much earlier than usual. Because of the light snow, the grass fuels were not compacted. Consequently, their decomposition was delayed and they dried out rapidly, providing an increase in available fuel.

The spring fire season began much earlier than usual and because of the continued drought, lasted longer than usual. By the end of March there were already 185 grass fires that had started and resultant property damage figures began to rise. A total of 8,600 acres had burned by month's end.

April was the worst month, with 1,072 fires burning more than 155,000 acres. Precipitation was limited to snow flurries and light showers, and the weather remained dry and windy. During the Easter weekend more than 200 fires were reported, with the major problems occurring in the northwest part of the state, and the Iron Range. Helicopters were put into service in advance of their contract period and the National Guard was activated and assigned to the Bunker Fire in the Hibbing area. The DNR used a helicopter to suppress the Gores Pool fire east of Hastings. Because of difficult access to the area, the municipal fire departments were unable to take direct action on the blaze. A total of 20,000 acres burned in Minnesota during that weekend.

By April 12, all major fires in the Northeast Region were being administered by overhead teams. In the Northwest, the Warroad area had seven fires burning, involving more than 1,000 acres each. One fire near the Red Lake Reservation burned in excess of 20,000 acres. On April 30th, two additional major fires broke out -- the Norris Camp fire in the Warroad area crowned in jack pine and burned 800 acres, and the Reilly Lake fire in the Deer River area burned 600 acres and threatened several homes and resorts.

In May -- 345 fires burned 13,800 acres. An open burning ban was declared for the northern two-thirds of the state. The last major fire of the spring fire season was the Grayling fire in the Hill City area. It burned nearly 4,000 acres before being contained.

The herbaceous vegetation began greening up, and the fire occurrence was significantly reduced by May 25, and the ban on open burning was lifted.

June fire activity was minimal due to the timeliness of the precipitation. By the end of June, the state had not yet received a great deal of rain, and large subsoil moisture deficits continued, mainly in the northeast and northwest.

The final tally for the spring fire season was 1,641 fires, burning 178,700 acres; more acreage than was burned during the entire 1976 fire season!

During the balance of the summer of FY 77 the fire occurrence was considerably reduced. The state did not receive a great deal of precipitation; however, the rain that did fall was timely enough to keep the vegetation green. It was an entirely different situation in the state of California, however; and for the first time in Minnesota history the Department was able to send two fully trained 20-man firefighting crews to help in the fire suppression efforts in the Modoc National Forest in northern California.

In Minnesota, precipitation increased during September and October, resulting in very little wildfire activity. During this period the Department implemented, on a trial basis, the computerized version of the National Fire Danger Rating System.

During the winter of 1977-78 training in all phases of firefighting continued; an Air Operations Officer position was created; final modifications were made on a plan to update the two-way radio communications system; and, after a successful trial period, the National Fire Danger Rating System was fully implemented.

The spring of 1978 was normal, with 875 fires reported. However, because of intensive suppression training and increased firefighting capabilities, the total acres burned was 9,000 -- or 36 percent of normal.

Regions II and III again had their 20-man hot-shot crews and, in addition, five men from the Region II crew were given "helitac" training to function as a special crew for helicopter-borne initial attack. This proved to be a very effective method of initial attack and had a direct

impact on the number of acres burned per fire. Also, a 20-man inter-regional crew of DNR personnel was formed and trained. Twenty-one forestry technicians, aides and helicopter pilots received training as helicopter firemen.

Sections 88.16 and 88.17 of the state's fire laws were revised for clarification as planned, and were enacted into law.

During the summer, approximately 300 DNR personnel received "hands-on" training in equipment operation and maintenance, at a series of week-long schools held at Camp Ripley.

Little wildfire activity occurred during August and September 1978 because of ample precipitation and a lack of a killing frost. With a dry October, fire activity could be expected to increase somewhat toward the end of the season. During the winter months of FY 79, weather data for the past three years will be put into automatic data processing form for summaries to be used for fire protection system-analysis planning.

Meetings will be held with the Manitoba Department of Renewable Resources; and jointly with the U. S. Forest Service, the National Park Service and the Ontario Ministry of Natural Resources, to review cooperative fire protection agreements.

A series of meetings will be held with personnel from DNR and the National Forests to decide on ways to correct the imbalance that exists in acres protected from fire by the respective agencies.

The planned radio system upgrading will be half completed by the end of FY 79.

It is difficult to project the severity of FY 79 spring fire season. However, dry conditions this fall (1978) indicate a strong possibility of a dryer than normal spring. Preparations will be made to suppress at least the average of 900 spring fires.

Rural Community Fire Protection Program

This program is designed to assist communities in fire protection and to aid rural fire departments in improving their fire fighting capabilities. Federal matching funding (Title IV) is utilized.

In FY 77 (September 1, 1976 to June 30, 1977) more than 300 applications for funds were screened; \$128,000 was assigned to 119 fire departments for the purchase of fire equipment. During FY 78, \$128,000 was assigned to 119 fire departments from more than 300 applications screened.

During FY 79, a total of \$133,000 will be allotted to Minnesota for assisting fire departments (on a matching basis) to purchase fire equipment. More than 300 applications, requesting about \$1.5 million are expected to be filed by rural fire departments.

An inventory of about 500 items for 300 fire departments is now being maintained. These are items with a value of more than \$300 that have been purchased with Title IV matching funds by rural fire departments.

Excess Property

Assigned 1 - 3/4-ton four-wheel drive pickup, 17 - 6x6 trucks and 3 water tanks to fire departments in Minnesota during FY 77.

Assigned 6 - 3/4-ton four-wheel drive pickups and 11 - 6x6 trucks in FY 78. A total of 145 agreements were signed between DNR and fire departments.

During FY 79 (July, August and September 1978) 22 contacts received or made regarding excess property. Received six requests from fire departments for either 3/4-ton four-wheel drive pickups or 6x6 cargo trucks to be converted to fire control units.

The following is projected for the balance of FY 79:

Assign 10 - 3/4-ton four-wheel drive pickups and 15 - 6x6 trucks to requesting fire departments, if the vehicles are available to DNR. Answer 25 requests for information about the program. Meet with 20 fire departments regarding compliance with the Excess Property Agreements they signed prior to receiving excess property.

Have 170 fire equipment agreements signed.

Forest Roads

Minnesota has 1,377 miles of forest roads, mostly within the boundaries of the 56 designated state forests.

Due to a severe fire season very little road work was accomplished during FY 77. Routine maintenance was carried out on a very limited basis; about 20 miles. Mowing of roadsides totaled 30 miles. Snow plowing was limited to 77 miles in the Warroad Area.

Plans for an expanded road maintenance and reconstruction program had to be abandoned due to a lack of adequate funding in FY 78.

Beaver dams caused considerable flooding resulting in washouts and creating traffic hazards.

A considerable amount of time was spent during FY 78 by Department personnel, at the expense of other programs, clearing out beaver dams adjacent to forest roads; hauling fill to repair washouts; and installing culverts to correct drainage problems. Department personnel also reconstructed 25 miles of road. Large snow accumulations in the Warroad Area required an excessive amount of plowing on 75 miles of road.

Approximately 30 miles of road were reconstructed July through September, FY 79. Again, due to lack of adequate funding, Department personnel and equipment had to be used for part of this reconstruction. Various timber industries cooperated by helping to maintain an additional 20 miles of road.

It is anticipated that during the remainder of FY 79, the forest road program will again be curtailed because of a lack of funds. It is anticipated that a minimum of road maintenance will be accomplished, using Department personnel and equipment as follows: replace one bridge with a culvert, and repair three bridges with some minor maintenance to try to keep roads open at minimum standards through use of Department personnel. Employment of DNR personnel for road maintenance projects will be at the expense of other forest management programs.

Dutch Elm Disease Demonstration Project

In 1978, six Minnesota cities (Fergus Falls, Granite Falls, Hutchinson, Litchfield, Little Falls, and Wadena) were selected to participate in a Dutch Elm disease demonstration project. Funding to the Minnesota Department of Natural Resources became available through the United States Forest Service for establishment of "high performance" Dutch elm disease control programs in each of these cities. Since the selected cities had already put into effect minimal Dutch elm disease control measures, the federal funds were designated to be used to establish those practices in each city which would elevate a basic removal program to a high performance sanitation and prevention program.

The intent of the project was defined as demonstrating how Dutch elm disease within an urban environment could be suppressed long enough to develop an economical and orderly transition, from the predominant elm forest to mixed stands of shade trees.

The Minnesota Department of Natural Resources' 1978 appropriation for the establishment of these high performance disease management programs totaled \$274,500. The funds were dispersed as follows:

Minnesota Department of Natural Resources	- \$ 92,500
Minnesota Department of Agriculture	- \$ 12,000
Demonstration Communities	- \$170,000

Although the DNR has the position of "leader" in this demonstration project, it is in cooperation with the state Department of Agriculture, the Extension Service of the University of Minnesota, and, of course, the six selected cities. The DNR is responsible for distributing the money to all program participants except the Extension Service, which was funded separately. Later in the year, \$36,000 in supplemental monies was awarded to the DNR to continue the establishment of these Dutch elm disease management programs.

Overcoming obstacles and pinpointing major objectives were the accomplishments made in 1978 by this federally funded Dutch elm disease demonstration project. Program participants have acknowledged that it was an organizational year and hope that in 1979 the disease management program will begin to replace the present tree removal program. Although the 1978 elm tree losses in each demonstration city exceeded all expectations, the losses in 1979 will probably be even greater. With the continued implementation of disease management techniques, however, the increase in tree losses will be curtailed in the years following 1979.

Insects and Disease

The June 1977 increase in Forest Insect and Disease Unit staff resulted in a considerable increase in forest problem work during the FY 78-79 Biennium, compared with the past.

There were 24 major survey and/or evaluation projects involving more than 70 million gross acres. Approximately 100 acres were sprayed for control of insects. Another 1,200 acres were treated silviculturally. Almost 8,000 elm trees were marked for removal in State administered recreational areas. Most of these have already been removed or will be shortly.

Another function of Insect and Disease Specialist is information and training. To accomplish this, 24 Land Manager Training meetings have been held. Annual reports and timely newsletters keep interested individuals informed on developments.

Nursery Operations

The DNR tree seedling nurseries shipped 15,184,000 tree seedlings for planting in the spring of 1978. There were 3,850 individual tree seedling applications filled during FY 78.

Of the seedlings produced, 53 percent were shipped for planting on public lands. Individual and private land owners purchased 39 percent of the production. The remaining 8 percent were distributed to various industries. These seedlings will reforest some 19,000 acres of land.

Tree improvement activities, the application of forest genetics to bring about heritable improvement in trees, was conducted to provide long-range improvements in timber grown in Minnesota. This will provide greater quality and quantity of timber from all forest lands in the state. Grafting continued with both white and black spruce, for the future establishment of seed orchards. Sixteen acres of seed orchard were established; 12 for white spruce and 4 acres for black spruce. These orchards will receive intensive cultural treatment, so that seed collection can begin at the earliest possible age. Work was continued with hybrid poplar production. This program continues in the stage of selecting which of the trees would be most productive under Minnesota conditions. Nuts were collected from selected black walnut trees, raised in the nursery and out-planted in specific locations which will be developed into future seed production areas.

The DNR tree seedling nurseries expect to ship 10.7 million seedlings during FY 79. This should total some 3,000 individual sales. Seedling production for sales in the spring of 1979 will be at a reduced figure because of the dry summer of 1976, which resulted in poor germination and survival of the young trees. Anticipated production originally was to have been at least 17 million seedlings available for distribution in the spring of 1979.

The total sales should provide for the reforestation of approximately 13,400 acres.

Tree improvement activities will continue. Approximately 2,500 white spruce will be grafted at the forest nurseries. Additional selection work will be continued with hybrid poplar. The black walnut superior seed collection and orchard establishment will continue.

Forest Development of State Lands

Forest development of state lands will focus on two major programs: reforestation and timber stand improvement.

There were 4,323,000 seedlings planted on some 5,400 acres of DNR forestry administered land.

Timber stand improvement, consisting mainly of the release of conifer reproduction from competing vegetation, was conducted on only 850 acres of state land during FY 78. This figure is extremely low because of the temporary ban on the use of pesticides, and the lack of funds.

It is expected that during FY 79 approximately 9,500 acres of state land will be reforested through planting and direct seeding. Timber stand improvement, which will consist mainly of the release of conifer reproduction from competing vegetation, is anticipated on nearly 7,000 acres of state land during FY 79. This large increase over 1978 will partially take up the backlog of needed release activities.

Timber Sales and Harvest

As shown in the following table, the volume of timber sold in Fiscal Year 1978 increased over that of FY 77, but the volume cut remained about the same. Income from timber sales for this period was in proportion to these volumes.

Timber sales for the period of July 1, 1978 to October 1, 1978 indicate a slight upturn in demand. It is therefore estimated that the volume of timber sold and cut in FY 79 will increase by about 10 percent over that of FY 78, with a proportionate increase in revenue.

Volume of Timber Sold and Cut (in cords)

	<u>FY 76</u>	<u>FY 77</u>	<u>FY 78</u>	<u>FY 79 (Anticipated)</u>
Volume Sold --	340,000	249,000	370,000	415,000
Volume Cut --	435,000	387,000	380,000	410,000

Timber Value

	<u>FY 76</u>	<u>FY 77</u>	<u>FY 78</u>	<u>FY 79 (Anticipated)</u>
Value Sold --	\$1,707,752	\$1,307,859	\$1,800,000 (EST)	\$2,045,000
Value Cut --	1,948,963	2,358,176	2,348,102	2,500,000

Timber Scaling

The Consumer Scaling System scaled 59 percent of the total cordage scaled by the 39 authorized consumers under the system. All remaining forest products were scaled by Division of Forestry field personnel.

The consumer scaling procedure showed a net increase of 3 new consumers, which reduced the total scaling costs to the State an average of 7 cents per cord.

The scaling sub-section made check scales on 1,400 timber sales, including 580 check scales on scaling personnel, and 28 checks of industrial scalers.

State Forest Acquisition Program Summary

The state forest land acquisition program received an appropriation of \$2,760,000 for the 1977-79 Biennium, and an additional \$92,000 for professional services. Resource 2000 is the program's funding source.

There are two state forest land acquisition specialists who plan and coordinate the land acquisition activities. Their accomplishments this biennium include preparing and processing approximately 120 fact sheets (representing successful landowner contacts), completion of a tax study to determine the impacts of the forest purchases on the local tax base, preparation of a land acquisition plan for the R. J. Dorer Memorial Hardwood State Forest, and coordination of activities with the Citizen Advisory Committee and local governments.

Of the biennial appropriation, \$1.73 million has been expended to purchase 33 tracts of land, totaling 4,883 acres. Nine tracts (693 acres) have been deeded to the state. The other 24 tracts (4,190 acres) are in the early stages of processing, and successful progress will exhaust the remaining biennium balance of approximately \$1,000,000. The state anticipates purchasing 20 more tracts (about 2,500 acres) by the end of the biennium.

More than 90 percent of the state forest purchases are in the Dorer Memorial Hardwood State Forest, and most of the remaining purchases are in the Sand Dunes State Forest. Both are state forests with relatively little state forest land. The acquisition program, since its inception, has successfully and significantly increased the state forest ownership in both forests, with special benefit to the Metro and southeastern Minnesota citizens. Overall, the state forest land in Sand Dunes has been increased by 1,700 acres, to a total of 5,500 acres. State forest land in the Memorial Hardwood State Forest has increased by 23,000 acres, to a total ownership of nearly 35,000 acres. Occasional small tracts have been purchased in other state forests (where there was specific need) throughout Minnesota.

Small Landowner Management Assistance

Non-industrial private forest lands in Minnesota comprise about 7 million acres. These tax-paying holdings are owned by 150,000 small landowners.

A problem with many of the small forest ownerships is their condition. Many are in need of reforestation, and improvement of existing stands of trees.

Proper forest management is a necessary condition. Income, jobs, consumer products, exports, water, wildlife and aesthetic environment -- which affect the public well-being -- are involved.

DNR's Division of Forestry is concerned with the condition of these small forested properties and is doing something about them by helping landowners better manage their small forests.

DNR foresters provide professional forestry guidance to private landowners in the management of their forest resource. Services provided include tree replacement, stand improvement and harvesting and marketing assistance.

Private owners, generally, do not know the value of their forest resource. Foresters help in marketing, and installing proper forest practices.

In 1978, DNR foresters helped more than 4,000 landowners develop their forest properties. More than 110,000 acres of private forest land was improved.

Together, small landowners and DNR foresters are building "Forests of the Future".

Forest Products Utilization and Marketing

The forest products utilization and marketing program (F.P.U.) provides technical assistance and services designed to improve the utilization and marketing of Minnesota's forest resources. Improved utilization of harvested trees will increase the volume of usable products produced by

each tree, and reduce the volume of material left burned or otherwise wasted in the forest. Improved markets provide economic incentives to landowners, loggers and wood processors to implement improved forest management and wood utilization practices.

The use of wood as an alternate energy source was a major F.P.U. program activity during FY 78. A \$550,000 grant was obtained from the U.S. Forest Service - State and Private Forestry to construct a wood pelletizing plant which will convert chips and bark from diseased elm trees and other urban wood wastes, into industrial fuel. The Stillwater State Prison heating system will convert from coal to wood as a primary energy source when the pelletizing plant is operational.

The wood pelletizing facility will be operated by a private company which is also investing approximately \$500,000 in the plant. Stillwater Prison will consume 10,000 to 16,000 tons of wood pellets annually, and about 30,000 tons of pellets will be sold annually to private industries in the Twin Cities area. Also cooperating on this project are the Minnesota Department of Corrections, University of Minnesota Forest Products Extension personnel, and local U.S. Forest Service specialists.

The Forest Products Utilization (F.P.U.) specialists are providing forest resource data to local forest products companies and out-of-state corporations which are considering plans to expand or establish new wood processing plants. These plants would utilize aspen and low-grade hardwoods for wood products to meet the rapidly expanding markets for wood.

The harvesting of mature aspen and hardwood would provide additional habitat for game and non-game wildlife species, and contribute to improving the productivity of the state's forest resources.

The F.P.U. specialists provided -- in addition to the special activities noted -- technical assistance and information to loggers, sawmillers, dry kiln operators, rough-mill managers and wood consumers.

Sawmill clinics in Wadena, Remer and Rushford; a hardwood lumber grading short-course; and a softwood lumber grading short-course, were cooperatively conducted in FY 78 by the University of Minnesota Extension Service, and the DNR Utilization and Marketing Program. Similar clinics and short courses are planned for FY 79. A Utilization and Marketing workshop and a hardwood tree grading session are planned for DNR personnel in FY 79. The DNR, and the University of Minnesota School of Agriculture and Extension Service are cooperatively conducting a program to promote the utilization of aspen bark for cattle feed. The feeding of aspen bark to cattle will provide a use for what is presently a waste product.

Forest Inventory

Good forest resource information is essential to effective forest management and proper utilization of the forest resource. This data must be up to date, and provide reliable resource information by county units.

Funds for a study of Minnesota's total forest resource were authorized by the 1975 Legislature. This study, the Statewide Forest Inventory, is being carried out in cooperation with the North Central Forest Experiment Station of the U.S. Forest Service. The total forest resource on the more than 17 million acres of federal, state, county, and privately-owned commercial forest land in Minnesota is included in the Study.

On February 1, 1978 the last of 10,644 permanent one-acre plots was established in the state. Within the one-acre plot, measurements were made and data recorded pertaining to all vegetation and its present condition.

All collected data has been entered on computer tape and is on file. Preliminary summarizations of information have been provided, and are being studied preparatory to publishing county reports.

Another, more intensive survey -- an on-the-ground examination of all forest types on state and county lands -- is also in progress. This survey will obtain the basic information necessary for forest management decisions, which must be made for each forest type. The DNR, in cooperation with the various counties, exceeded earlier projection by completing survey in FY 78 on more than 250,000 acres of state and 50,000 acres of county tax-forfeited lands. DNR will complete 300,000 acres of state and 50,000 acres of county lands in FY 79.

County Assistance Program

The CAP was transferred in January 1978 by Executive Order, from the Iron Range Resources and Rehabilitation Board to the DNR.

Primary function of the CAP and its staff of nine foresters is to assist the Land departments in eight counties (Lake, St. Louis, Itasca, Aitkin, Crow Wing, Beltrami, Becker and Cass) that pay half the program salaries (and other counties upon specific request and projects) with the administration and management activity on tax-forfeited lands. The foresters' duties vary in scope from timber sales or tree planting to county land management promotion, public relations and educational efforts. Activities include organizing a forest inventory, determining timber cut allocations from inventory, gathering specific data such as acreages for ownership, mapping, memorial forests, assisting the counties with the Tree Growth Tax Law and conducting a basic course in aerial photography for persons lacking previous training.

During 1977 the eight counties in the program produced income of \$2,841,300 or \$1.00 per acre. Direct expenses were 45 percent, or \$1.3 million, to provide: 290,700 cords of wood products on 4,000 timber permits; sale of 30,000 acres of land; addition of 25,000 acres to memorial forests and planting of 1.3 million seedlings. The balance of the income was apportioned to: timber development or memorial forests, \$263,000; recreation development, \$190,000; County general revenue, \$435,000; School Districts, \$435,000; and Township or Villages, \$218,000.

The current County investment returned to the land amounts to 10 cents per acre. The investment level estimated to be needed is \$1.00 per acre. Approximately 50 percent is in recreational use and 50 percent in timber management.

The counties have anticipated these future demands and cannot comply under present income sources and dispersement methods.

#

MINERALS RESOURCES MANAGEMENT

The Department's Mineral Resource Management Program, conducted by the Division of Minerals, provides for the management of the ten million acres of state-owned trust fund and tax-forfeited mineral rights, environmental review of all mining proposals; evaluation of mineral potential; mineral data input in land use decisions; and the regulation of the effects of mining through development and implementation of mineland reclamation rules.

The Division of Minerals' goals are to provide equitable rental and royalty income from the exploration and development of these mineral rights for the trust funds and local taxing districts, in coordination with the overall natural resource management responsibilities of the Department. It is, therefore, no longer merely a development-oriented program; but is also addressing the growing concern over the environment.

The main goal of this Division is to carry out its trust responsibilities by implementing and regulating the exploration and development of state-owned mineral rights, within the context of the Department's overall natural resource management role. It also must provide technical support to other state agencies, its federal counterparts, and to the mineral potential counties; and handle public inquiries on mineral resources. State mineral ownership includes more than 18 percent of the Mesabi Iron Range; more than 90 percent of the 7.2 million acres of Minnesota's peatlands; and a large share of the copper-nickel resource currently under evaluation. Expanded interest in these resources--and in the potential for other mineral resources such as uranium, titanium, vanadium, gold, silver, etc.--requires continued development and analysis of inventory, economic, and environmental data necessary to establish or update mineral management policy.

The approximately 10,000,000 acres of state-owned mineral rights administered by the Minerals Division are located mostly in the northern part of the state. These include School and University Trust Fund, Acquired and Tax Forfeited mineral rights.

Under Minnesota's state mineral laws (M.S., Chapter 93), these mineral rights are not sold; but state lands believed to have mineral potential may be leased at public sale, or in certain cases, by negotiation. Royalty is paid to the state on each ton of ore mined or concentrate produced. These mineral leases also provide for annual minimum rental or royalty when no ore is mined.

The Division provides for the exploration and leasing of these mineral lands, economic and environmental review, royalty accounting, and--primarily through its field office in the iron mining district at Hibbing--engineering and inspection support to insure permit and lease compliance, evaluation of mineral potential, metallurgic research and testing, and cartographic and chemical laboratory support.

Due to the intense interest in mineral resource potential, mineral development, and the natural environment, a great deal of the Division's time must be devoted to the handling of public inquiries on mineral resources. In addition to its statutory responsibilities, the unit must also provide technical support to other state agencies, its federal counterparts, and to counties having minerals or mineral potential.

Iron Ore and Taconite

Iron ore and taconite from the Mesabi Range have dominated the mining scene in Minnesota for some 90 years, and will probably continue to do so for 200 or more years to come. The state, through its Trust Fund and Tax Forfeited mineral ownership, owns approximately 19,600 acres on the Mesabi iron formation, or approximately 18½ percent of the total.

During this biennial period, the Minerals Division has or will have administered the following numbers of iron ore and taconite leases, covering more than 13,000 acres of the iron formation:

<u>Time Period</u>	<u>No. of Leases</u>
9/1/76 to 6/30/77	As Projected
FY 78	156
FY 79 through 9/30/78	156
10/1/78 to 6/30/79	158

The Division is presently engaged in negotiations for several more leases, and it is anticipated that at least two will be completed during this biennium. When completed, the annual production capacity of all will approximate 65 million tons of taconite pellets. State-owned taconite represents a substantial portion of the reserves of these operations.

The state's rental and royalty income during this biennial period is as follows:

<u>Time Period</u>	<u>Income</u>
9/1/76 to 6/30/77	(Accomplishment as Projected)
FY 78	\$1,800,000
FY 79 through 9/30/78 . . .	\$ 700,000
Projected for 10/1/78 to 6/30/79	\$2,100,000

A 113-day steel strike which began August 1, 1977, coupled with a decreased demand for steel products, resulted in a 34 percent reduction in iron ore shipments from the previous year. This also reduced the royalty and rental income for FY 78.

It is expected that during Fiscal Year 78-79 approximately 44.7 million tons of state-owned natural iron ore and taconite will be mined in comparison with 38.4 million tons in FY 76-77, and that the resulting rental and royalty income will total approximately \$4.6 million. A total

of \$2.7 million will be distributed to the School and University Trust Funds; the remaining \$1.9 million will be returned to the counties for distribution to the local taxing districts.

During FY 78, the settlement of a lawsuit contesting the validity of the State's title to a tax-forfeited mineral property resulted in the state and federal governments recovering title to more than 27 million tons of taconite ore valued in excess of \$14 million at present royalty rates. The State's share of such future royalties is estimated to be more than \$1.5 million. The settlement involved an amendment to one of the state's leases, which was approved by the State Executive Council November 21, 1977.

Nonferrous Minerals

In addition to its iron ranges, Minnesota has several other formations that currently are receiving a great deal of attention for their nonferrous mineral potential. Since 1966, the Division has had an active exploration leasing program in the Duluth Gabbro Complex, which involved portions of St. Louis, Lake, and Cook counties in northeastern Minnesota. Exploration activities in that area have resulted in announced finds of copper-nickel mineralization which appear to have potential for possible development. Potential ore bodies are primarily copper-nickel sulphide deposits, associated in some instances with cobalt, gold, silver, platinum and other valuable minerals. These minerals are generally found finely disseminated in the Gabbro, and form large tonnages of low-grade deposits. Substantial occurrences of titanium-bearing minerals have also been found in this Gabbro Complex.

The significance of these copper-nickel deposits in the Gabbro is of major importance to the state. An estimate by the Division during this biennium indicates that about 4.4 billion tons of mineralized material with an average grade of 0.66 percent copper and 0.2 percent nickel exists in the northwestern part of the Gabbro, in Lake and St. Louis counties. This represents the largest known resource of nickel in the United States, with a combined gross copper-nickel value of more than \$80 billion. Much of these copper-nickel ores are held by exploration companies under state leases. Projections by the Division suggest that substantially larger amounts of copper-nickel and associated metals probably exist. Recently, it has also been determined that significant amounts of vanadium occur with titanium minerals in the Gabbro, a fact which is receiving increased attention.

The following numbers of copper-nickel leases, all in the Gabbro area, have been or will be administered by the Division of Minerals during the biennial period:

<u>Time Period</u>	<u>Leases in Effect</u>
9/1/76 to 6/30/77.	(Accomplishment as Projected)
FY 1978.24
FY 1979 through 9/30/78.22
10/1/78 through 6/30/79.21

AMAX Exploration, Inc. currently is conducting the largest exploration program in the Duluth Gabbro Complex. AMAX has completed a 1,728-foot exploration shaft with 3,780 feet of horizontal drifts, near Babbitt. At present, it is conducting underground drilling from the drifts in an effort to probe the mineralized area. This program will continue through 1981 when all the technical and economic findings will be studied to determine the feasibility of a mining operation. A major portion of the AMAX property is under copper-nickel lease from the State. It has been estimated that if AMAX does develop this property, the State will collect royalties equal to those collected from iron ore and taconite since the state started leasing.

The Division has entered into a cooperative agreement with AMAX Exploration Inc. to study the effects of various reclamation techniques on leaching Gabbro lean ore and tailings stockpiles. In Fiscal Year 78 a field chemist was hired, a workplan written, and a field laboratory established. Accomplishments for FY 79 through September include the instrumentation of test piles, followed by collection and analysis of leachate runoff. Gabbro tailings were transported to the field leaching site in northeastern Minnesota and will be used for constructing an experimental stockpile, in the spring of 1979. Other work to be completed during the remainder of FY 79 includes upgrading the instrumentation on the leaching piles; completion of greenhouse studies to determine optimal species and fertilization rates for field revegetation studies; and the continued collection and analysis of leachate runoff.

A Regional Copper-Nickel Study presently is being conducted under the auspices of the State Environmental Quality Board (EQB). The Division of Minerals has assisted the study team by lending staff on a full-time basis, and by contract work. Accomplishments on this program through FY 77 were as projected in the 76/77 biennial report. During FY 78, biological monitoring and mineral leaching field studies were completed and initial data analysis and report preparation begun. Data analysis and preparation of final reports has been continued in FY 79. The Biological monitoring reports are scheduled for completion by December of 1978, while all leaching reports are not expected to be completed until March or April, 1979. A Minerals staff member will continue to act in a liaison capacity between the Department and the Regional Study, through the end of the current biennium.

In 1967, interest also developed in Minnesota's Greenstone formations, which stretch extensively throughout the northern half of the state, and which constitute the host rock of much of the mineral wealth of the adjoining Canadian provinces. The Greenstone formations have potential for base and precious minerals such as zinc, lead, copper, gold, silver, etc. In Canada these formations are typified by high grade, but relatively small deposits.

Between 1968 and 1973 the DNR issued a total of 699 exploration leases, covering more than 300,000 acres, in the Greenstone formation. Although all of these leases have since been terminated, numerous requests have been made to the Division for renewed Greenstone leasing. After the completion of the EQB regional copper-nickel study, and subject to concurrence by the State Executive Council, the Division expects to conduct at least limited lease sales during the next biennium.

Recently, several geologic formations in Minnesota have received considerable interest for uranium. Most of this activity has been concentrated in Carlton and Pine counties. However, lesser activity is taking place in other areas of the state. The Division has been requested to offer state lands for uranium leasing. The Division is studying both uranium-leasing possibilities and environmental effects.

The Division is responsible for evaluating the mineral potential of the approximately ten million acres of state-administered mineral lands. Of all the natural resources in Minnesota, minerals are the most difficult and the most costly to examine and evaluate.

The following amount of iron ore, taconite, and copper-nickel exploration drilling was conducted, or is projected, for state leases:

<u>Time Period</u>	<u>Amount of Drilling</u>
9/01/76 - 6/30/77	50,900 feet
7/01/77 - 6/30/78	52,767 feet
7/01/78 - 9/30/78	6,300 feet
10/01/78 - 6/30/79	31,670 feet

This exploration activity has been closely monitored by the Division's Hibbing Field Office, and a quarter-portion of all drill core is obtained by the Division and placed on file in its drill core library. If a copper-nickel lease sale is held in 1979, it is expected that the amount of exploration drilling will increase significantly. A new drill core library building will be completed during the biennium to facilitate storage of this newly-developed drilling.

At present, the Division only has sufficient data to reasonably evaluate mineral potential on less than five percent of the state land. However, the Division is not able to stop or prevent land uses which do preclude future exploration and mining of minerals, even though adequate mineral data does not exist. State mineral leasing programs contribute a large amount of expensive mineral data, but it is also necessary for the Division to obtain data in areas not of current interest to industry.

During the past seven years, the Division has made a concentrated effort to evaluate mineral potential in response to the many land-use decisions it has been required to make. Preliminary mineral potential studies and surveys have been conducted for portions of 16 northern counties.

Minesite Study

The Minesite Study is a computer-based land information system for the copper-nickel resource area between Hoyt Lakes and the BWCA, south-east of Ely. The study area encompasses 560 square miles.

The Study was initiated in 1973 by the Division of Minerals. The program is designed to systematically analyze large quantities of natural resource data; to evaluate historical land uses; and to identify land-use capability and potential land-use conflicts within the study area.

In addition, the program will be used to identify and evaluate alternative locations for various mining facilities associated with possible copper-nickel development.

The data base development phase has been completed and two reports produced: "MINESITE Data Manual", and "MINESITE Status Report". The second phase of the project (analysis modeling) is under way. When completed, at the end of this biennium, the system will consist of approximately 30 data variables and 60 analysis models.

The techniques and systems developed in this project are useful for future policy management decisions related to resource allocation in the Northeastern Minnesota study area, and provide a model for other computer-based land information systems.

Mineland Reclamation

The Department of Natural Resources is charged with the development and administration of the state's mineland reclamation program. The Mineland Reclamation Act requires the reclamation of all currently active and any future metallic mining operations in the state. A total of 16 existing operations must comply under this law and obtain permits to mine, once rules and regulations have been established. Each permit application must include a mineland reclamation plan, for the review and approval of this unit.

During FY 78 the Department developed a preliminary draft of rules and regulations which was circulated and reviewed with other local governmental agencies, the mining industry, environmental groups, and the interested public.

The very considerable response generated by the preliminary "Draft of the Mineland Reclamation Rules" has been analyzed and revisions of the Rules are being made, in order to address a number of valid concerns that have been expressed. A final draft of the proposed rules will be completed in FY 79 for public hearing.

In addition to the development of the draft rules and regulations, the Department has been engaged in the following reclamation activities:

- * Revegetation Research. Work is being done to monitor and evaluate past and current planting programs, as well as natural revegetation, to determine why they succeed or fail.
- * Copper-nickel leaching and tailings revegetation research. (The Reclamation Act covers all metallic minerals). This research work is being conducted at the Minnimax site and is being partially supported by a \$15,000 gift from AMAX.
- * North Shore Characterization Study. The Reclamation Act requires the DNR Commissioner to develop procedures that will identify areas or types of areas which, if mined, cannot be reclaimed by present technology. The North Shore is such an area, and a method has been developed in an attempt to delineate it.

- * Mosaic/Photomontage Adaptability. This is a computer graphics system developed by the Federal Forest Service and Aerospace Corporation to enable proposed mine development and reclamation plans to be evaluated visually on area photos. Its adaptability to the Iron Range topography is being evaluated as a reclamation tool.
- * Coordination with Federal Regulations (required under Reclamation Act). The newly developed Federal reclamation provisions are being reviewed for coordination with the Department's draft reclamation rules.
- * Evaluation of mining plans and design proposals of current operations to see that forthcoming reclamation standards can be met. The Division has, and is reviewing plans of three mining companies.
- * Mine Model. A three-dimensional mine model has been developed to demonstrate objectives of reclamation rules.
- * Mineland Cleanup. The existing mineland cleanup program on the Mesabi Range (for removing abandoned and dangerous structures and debris left by past mining operators) was expanded during the biennium to the Cuyuna and Vermilion ranges.

The current Mineland Reclamation Act covers only metallic minerals and therefore does not include sand and gravel, granite quarries, etc. Due to the requests for information on non-metallic mineral reclamation, the Department is conducting a survey of the various county and municipal zoning acts related to sand and gravel development and reclamation. A report will be prepared during FY 79.

Iron Range Information System

The Iron Range Information System is a computerized data study of the Mesabi Iron Range that will provide a data base for future land use planning; mineland reclamation permit coordination; permit evaluation; and for setting policies for comprehensive resource management. During FY 77, a workplan and budget were developed and funding received for Fiscal Years 78 and 79. Initial work on compiling resource data was begun in FY 78; computer equipment was purchased, and data entry has now begun. For the remainder of the FY 79, numerous resource data variables will be entered and mapped via the computer, and a draft report prepared.

Reserve Mining Company Case

In April of 1977, the DNR and Minnesota Pollution Control Agency were directed by the Minnesota Supreme Court to issue permits for the Mile Post 7 tailings disposal system. The Department issued its overall permit in August 1977. This permit requires continuous inspection of the Mile Post 7 project while it is under construction. The basin will become operational on April 15, 1980. Such inspection is being carried out by Division of Minerals and other DNR staff.

A number of parcels of state-owned land in the Mile Post 7 project area were required by Reserve Mining for the tailings disposal system. The State of Minnesota entered into a land exchange with Reserve--in order to accommodate Reserve and to further the interests of the state, as well.

The Division of Minerals is coordinating the ongoing administration of the Department's permit, including such issues as reimbursement of expenses; the processing and administration of necessary contracts; and involvement with other state and federal agencies.

Registration of Severed Mineral Rights

Under the Registration of Severed Minerals Act, as amended in 1973, every owner of an interest in minerals owned separately from the surface of the property was required to register such interest before January 1, 1975, or such interest forfeited to the state -- in trust for the local taxing district. Such registered severed mineral interest is also subject to a tax at the rate of 25 cents per acre per year.

More than 2-3/4 million acres were registered under this Act, and of the tax generated, 80 percent goes to the local taxing districts, and the remainder is apportioned to an Indian Development Fund.

An action was brought against the state, challenging this Act. The District Court ruled that the registration provision was invalid, but that the tax provision was constitutional.

The ruling of the District Court is presently under appeal to the Supreme Court of Minnesota. Briefs and oral arguments were made in September of 1977, and a Supreme Court decision is expected soon.

Peat Resources

The Upper Great Lakes states, including Minnesota, Wisconsin and Michigan, have extensive peat areas which are virtually undeveloped. No accurate inventories of these peat lands have been made to date, but estimates indicate that these three states contain up to 15 million acres of peat. Minnesota alone contains approximately one-half of this total acreage -- approximately 90 percent of which is state-owned, with several large deposits of more than 100,000 acres occurring in the northern part of the state.

In view of the overall potential of peat and the large state ownership, the Department was engaged, during FY 76, in a one-year, \$94,000 Peat Study, funded by the Upper Great Lakes Regional Commission. The objectives of this study were to perform a preliminary environmental study of peat areas, and to assess the technology of the peat industry. The 1976 Legislature provided funds for the Division to initiate a peat inventory program, which will be necessary to evaluate the lease requests the unit now has before it, and to help in formulating a State Peat Land Policy. The 1977 Legislature provided for the continuation of such studies.

The Minnesota Peat Program currently is designed to study, sample, and map the more than seven million acres of peat resources of the state; evaluate ways of using this resource; determine the natural and social environmental impacts of using the resources; and make policy recommendations to the Legislature for the management of the state's peatlands.

This activity is coordinating a peat inventory project which is determining the quality, quantity, type, and depth of peat found in major peatlands or Northern Minnesota. It also is conducting field research on peatland wildlife, hydrology, water quality, reclamation, air quality, and forestry and vegetation, which will form the basis of assessing impacts on the natural environment. This activity also is evaluating the potential effect of various types of peatland development on the socioeconomic environment. This is being done by computer simulation of a baseline Northern Minnesota economy (1970-75) with certain development scenarios superimposed. The simulation then predicts changes resulting from peat development. The activity is also studying the feasibility of development types -- such as horticulture, agriculture, energy production, forestry, chemical-industrial use, recreation, and preservation. Lastly, based upon these studies plus staff consideration of peat taxes, royalties, and classification, policy recommendations will be prepared for Legislative consideration.

During the 77-79 Biennium, this activity conducted studies needed to make policy recommendations concerning small-scale development or peatland (horticulture, agriculture, etc.). Policy recommendations concerning small-scale development were formulated, and are to be presented to the Legislature.

During the 79-81 Biennium, the activity proposes to complete studies needed to make policy recommendations concerning large-scale development of peatland -- such as peat gasification and other energy uses.

By the end of the Biennium the peat inventory project will have completed inventory of 900,000 acres of peatland. A final report, to include maps and text, will document these findings. The capabilities of the sampling crew have increased from 300,000 acres per year to 500,000 acres per year, with experience and refinement of sampling equipment and procedure. Analyses of the peat samples will provide information on the chemical content, ash content, BTU capacity, heavy metal content, and suitability of Minnesota peat for chemical/industrial uses.

The Upper Great Lakes Regional Commission funded a 16-month Phase II peat study, completed July 31, 1978, to gather information on peatland environment, potential uses of peat and peatlands, and the socio-economic condition of peatland regions.

The National Science Foundation is funding a two-year study which started October 10, 1978 utilizing the Minnesota Peat Program activity to study the process whereby the formulation of natural resource management policy alternatives occurs.

PARKS AND RECREATION MANAGEMENT

Park Development

For the 1978-79 Biennium, the Legislature appropriated \$6,833,250 (\$2.4 million from State Parks Development account-sticker income) for park development and rehabilitation within 65 State Park units. Approximately one half of these projects were handled by park staff (force account). The balance of the projects are being handled through the Bureau of Engineering with construction contracts. These development projects are presently in various stages of completion and are anticipated to be completed by July 1, 1979.

The development and rehabilitation projects will correct some noticeable health problems, such as water and sewage problems; provide additional toilet buildings; and correct safety hazards such as exist at the Tower Soudan Mine. The park units will be aesthetically improved through extensive resource management programs for vegetation, wildlife, fisheries and soils.

Ninety percent of all park development projects qualify for Federal funding assistance, meaning that \$3,074,962 will be returned to the state.

Park Maintenance and Operation

During the 1978-79 Biennium, the Division maintained and operated 65 parks and 16 waysides under a \$10.5 million appropriation for that purpose. St. Croix State Park was dedicated in October 1978, adding an entirely new park to be maintained. In addition, 8 campgrounds and 4 interpretive centers were added to the system for maintenance.

The income from park permits, campground registration fees and other activities and materials sold, totaled \$2,282,938 for FY 78.

Annual attendance has remained close to seven million since 1971. The increase in winter use over the past several years is expected to continue.

Whitewater State Park experienced two floods during the summer of 1978. The second flood did extensive damage for which the Division received federal funds. Tower Soudan State Park remained closed during the summer of 1978 so that repairs could be made for the safety of the visitors.

Twenty-two new state park brochures were published, providing the public with current maps and pertinent information.

About 100 park managers were given 40 hours of enforcement training. They are also receiving 16 hours of on-the-job training with their respective enforcement officers.

The Division has held three annual orientation training sessions for all field personnel who have contact with the public. As a result, the Division detects greater job satisfaction among employees and fewer public conflicts.

Public hearings were held on proposed Park and Forest Rules. The approved rules are expected to be printed prior to the close of FY 79.

Many parks lost numerous elm, oak and butternut trees, leaving some picnic and campground areas without shade. Crews have removed most of the stricken trees, leveled the stumps, and have begun a shade tree replacement program.

Accessibility Program --- Special Populations

Throughout Fiscal Year 78 and FY 79 to date, the concept of equal rights in state parks and recreation areas for all individuals has continued to increase. Recent legislation (PL 90-480 Architectural Barriers Act; PL 93-112 Rehabilitation Act; PL 94-142 Education for All Children Act) involving both Federal and State levels of government laws, supported integration and full rights for all individuals -- including persons with disabilities, and the elderly.

Concerns have thus encouraged full participation by all individuals to pursue their recreational and leisure needs. Recreation, including access to, and useability of outdoor recreation facilities and programs, has now become a right, rather than a privilege.

The Department of Natural Resources' Accessibility Program has operated on a budget of \$724,000 for FY 78-79. A grant was received from the Federal Economic Development Administration for \$524,000. The Minnesota Department of Administration also allocated \$200,000 to the program for FY 78-79. The Federal grant was appropriated to the DNR for the elimination of physical barriers within State Parks. The state appropriation was also designated for the remodeling and rehabilitation of DNR facilities to insure easier physical access to structural facilities.

These funds have been utilized for the elimination of physical barriers throughout 38 state parks and a few DNR headquarters office buildings. Specific allocations include such projects as accessible picnic tables, nature and hiking trails and swimming areas, as well as accessible vault toilets and sanitation buildings. All designated projects will be completed by June 30, 1979.

It is projected that with the increased emphasis of providing access to and useability of outdoor recreation facilities for all individuals, it will become necessary for funds to be utilized for the vital areas of educational/recreational interpretive programming; dissemination of information to potential users, and related to the delivery of outdoor programs for special populations; and for in-service training of all staff involved in providing physical access to and useability of Minnesota's outdoor recreation areas.

The DNR has also served throughout this Biennium as a liaison to public and private agencies. The accessibility program has been assisting numerous individuals in their efforts to provide unlimited opportunities for all individuals to enjoy Minnesota's natural resources.

The concerns of the accessibility program have become a humanistic approach: individuals should have available to them numerous recreational choices. The Minnesota Department of Natural Resources' challenge, then, lies in providing total accessibility and useability; insuring the freedom of use to everyone, not only persons with disabilities and the elderly.

Public Access

Throughout Minnesota there are approximately 1,717 public accesses under all ownerships which have been acquired, developed and maintained primarily so that the public might have access to good fishing lakes. Of these, the Division maintained 257 public accesses at a cost of \$86,185. In addition, eight parcels were acquired at a cost of \$76,694; and nine sites were developed at a cost of \$12,290.

The responsibility for this program was recently transferred from the Division of Enforcement to the Division of Parks and Recreation.

Trails Program

Minnesota's trail system consists of a network totaling nearly 8,500 miles.

The main arteries are the corridor trails which are basically for year-around multiple use. All 11 have been specifically authorized by the Legislature, and provide several treadways within a 100-foot right-of-way. These trails total 1,235 miles.

Acquisition appropriation of the corridor trails in Fiscal Years 77, 78 and 79 totaled \$3.8 million. As of Oct. 1978 approximately 80 percent of this appropriation had been expended or was allotted for specific projects. The remaining funds should be allocated as soon as appraisals are completed.

State Trail construction for Fiscal Years 77, 78, and 79 is as follows:

Current Corridor Trail System

<u>NAME</u>	<u>COUNTIES</u>	<u>LENGTH OF TRAIL MILES</u>	<u>MILEAGE COMPLETED</u>
Casey Jones	Pipestone and Murray	37	14
Heartland	Cass and Hubbard	48	27
Minnesota Valley	Hennepin, Dakota, Scott, Carver, Sibley, Nicollet and LeSueur	72	34
Minnesota-Wisconsin	Ramsey, Anoka, Washington, Chisago, Pine, Carlton and St. Louis	210	100

Current Corridor Trail System (continued)

<u>NAME</u>	<u>COUNTIES</u>	<u>LENGTH OF TRAIL MILES</u>	<u>MILEAGE COMPLETED</u>
Luce Line	Hennepin, McLeod, Kandiyohi and Chippewa	104	18
Root River	Fillmore and Houston	50	--
Sakatah Singing Hills	Blue Earth, LeSueur and Rice	42	26
Taconite	St. Louis and Itasca	110	70
Douglas	Olmsted and Goodhue	12	12
Glacial Lakes	Kandiyohi, Pope and Douglas	100	--
Arrowhead	St. Louis, Lake, Cook and Koochiching	<u>450</u>	<u>85</u>
	<u>Totals</u>	1,235	386

Governor's Program

<u>UNIT</u>	<u>REHABILITATION MILEAGE</u>	<u>NEW MILEAGE 78-79</u>	<u>TOTAL MILEAGE</u>
<u>REGION I</u>			
Maplewood State Park	5	15.0	20.0
Lake Bemidji State Park	3	1.0	4.0
Lake Bronson State Park	0	5.5	5.5
Hayes Lake State Park	<u>0</u>	<u>6.0</u>	<u>6.0</u>
<u>Subtotal</u>	8	27.5	35.5
<u>REGION II</u>			
Jay Cooke State Park	10	25.0	35.0
Scenic State Park	0	10.0	10.0
Gooseberry State Park	5	7.0	12.0
Thistledew State Forest	12	6.0	18.0
Remote Lake State Forest	13	0.0	13.0

Governor's Program (continued)

<u>UNIT</u>	<u>REHABILITATION MILEAGE</u>	<u>NEW MILEAGE 78-79</u>	<u>TOTAL MILEAGE</u>
<u>REGION II (cont'd)</u>			
Fond du Lac State Forest	0	12.0	12.0
Woodland State Forest	0	20.0	20.0
Wealthwood State Forest	0	8.0	8.0
Golden Anniversary State Forest	<u>0</u>	<u>12.0</u>	<u>12.0</u>
<u>Subtotal</u>	40	100.0	140.0
<u>REGION III</u>			
St. Croix Wild River State Park	0	30.0	30.0
Lake Maria State Park	5	9.0	14.0
Chengwatana State Forest	0	20.0	20.0
Rock Lake State Forest	8	0.0	8.0
Spider Lake State Forest	-	18.0	18.0
Washburn Lake Solitude Area	<u>11</u>	<u>6.0</u>	<u>17.0</u>
<u>Subtotal</u>	24	83.0	107.0
<u>REGION IV</u>			
Camden State Park	4.2	6.0	10.2
Minneopa State Park	3.5	2.0	5.5
Sibley State Park	<u>5.0</u>	<u>6.0</u>	<u>11.0</u>
<u>Subtotal</u>	12.7	14.0	26.7

Governor's Program (continued)

<u>UNIT</u>	<u>REHABILITATION MILEAGE</u>	<u>NEW MILEAGE 78-79</u>	<u>TOTAL MILEAGE</u>
<u>REGION V</u>			
Forestville State Park	5.7	0.0	5.7
Frontenac State Park	3.0	0.0	3.0
Whitewater State Park	4.0	0.0	4.0
O. L. Kipp State Park	<u>0.0</u>	<u>8.7</u>	<u>8.7</u>
<u>Subtotal</u>	12.7	8.7	21.4
<u>REGION VI</u>			
Fort Snelling State Park	5.0	12.0	17.0
Afton State Park	6.0	2.0	8.0
William O'Brien State Park	<u>12.0</u>	<u>0.0</u>	<u>12.0</u>
<u>Subtotal</u>	<u>23.0</u>	<u>14.0</u>	<u>37.0</u>
<u>Grand Total</u>	120.4	247.2	367.6

Maintenance appropriations have increased from \$295,000 in FY 77 to \$390,000 for each of Fiscal Years 78 and 79. These include mileage and inflation increases. The funds are used on corridor, state park and state forest trails for hiking, biking, skiing, snowmobiling and horseback riding maintenance.

Trail Assistance Program

Primary objectives for the Minnesota Trail Assistance Program include promoting cooperation between trail users, local units of government, private landowners and the Department of Natural Resources.

The program provides funding to establish important trail connections between cities, counties, recreational areas, and state corridor trails.

Safe, well-maintained recreational trails are established where trail user organizations, local units of government and private landowners indicate they are needed.

The Trail Assistance Program was transferred to Comprehensive Planning and Programming Nov. 13, 1977, and returned to the Division of Parks and Recreation in October 1978.

Grants-In-Aid Projects By County: 1977 & 1978

	<u>New</u>	<u>Miles Maintained</u>		<u>No. of Projects</u>	1978	1978
		1977	1978		State Cost	Total Cost
1. Aitkin		384	388	6	\$ 47,922	\$ 73,726
2. Anoka		67	78	2	15,886	24,440
3. Becker		205	205	1	20,718	31,874
4. Beltrami	10	50	68	3	17,811	27,402
5. Blue Earth		36	36	1	0	0
6. Carlton		241	272	6	34,406	52,778
7. Carver			4	1	1,724	2,652
8. Cass	23	268	364	10	41,970	64,569
9. Chisago		122	152	4	20,700	31,846
10. Cook	50	34	44	2	3,090	4,754
11. Crow Wing	12	336	336	7	0	0
12. Dakota	20	48	149	7	32,284	49,468
13. Dodge		89	89	2	800	1,231
14. Douglas	60	164	202	4	27,110	41,707
15. Faribault		20	20	1	0	0
16. Fillmore		78	43	1	0	0
17. Freeborn		168	173	1	3,445	5,300
18. Hennepin		157	211	7	71,023	109,266
19. Houston		310	300	4	15,892	24,449
20. Isanti	20	123	135	4	23,211	35,709
21. Itasca	70	216	241	10	45,940	70,016
22. Kandiyohi		50	110	2	20,450	31,462
23. Koochiching		19	19	1	6,825	10,500
24. Lake		147	160	5	14,679	22,583
25. Lake of the Woods		34	34	1	4,028	6,197
26. Lyon		0	15	1	5,720	8,800

Grants-In-Aid Projects By County (continued)

	<u>New</u>	<u>Miles Maintained</u>		<u>No. of</u>	<u>1978</u>	<u>1978</u>
		<u>1977</u>	<u>1978</u>	<u>Projects</u>	<u>State</u>	<u>Total</u>
					<u>Cost</u>	<u>Costs</u>
27. Mahnommen	35	51	106	3	\$ 19,398	\$ 29,842
28. Meeker		153	155	1	15,112	23,249
29. Mille Lacs		68	88	3	7,180	11,046
30. Morrison	25	0	245	3	35,555	54,700
31. Mower		192	148	2	390	600
32. Olmsted		57	53	4	5,330	8,200
33. Otter Tail	30	152	153	2	20,596	31,680
34. Pennington		64	64	1	3,478	5,351
35. Pine		65	65	2	9,230	14,200
36. Pope	10	0	21	2	5,830	8,969
37. St. Louis		69	100	4	26,283	40,435
38. Scott	20	36	57	2	8,319	12,798
39. Sherburne	12	40	43	1	7,735	11,900
40. Stearns		48.5	83	6	10,554	16,227
41. Steele		59	59	1	4,475	6,885
42. Todd	70	0	60	1	11,732	18,049
43. Wabasha		100	100	1	3,000	4,615
44. Wadena		95	96	1	9,100	14,000
45. Waseca		96	96	1	0	0
46. Washington		58	63	4	9,300	14,308
47. Winona		95	90	1	10,400	16,000
48. Wright		120	135	3	6,000	9,230
<u>Totals</u>						
Snowmobile	410	4,810	5,673	118	\$ 699,743	\$1,076,528
Ski Touring	82	334	392	38	68,191	104,909
Equestrian	25	0	0	0	6,311	9,710

Youth Programs Office

The Youth Conservation Corps is thriving at an exceptional rate in Minnesota. The federal government, in showing its endorsement of DNR's program, has continued to increase the state grant appropriation each year. (The federal grant is on an 80/20 federal/state matching basis).

In the summer of 1977 the Youth Programs Office employed 210 young people between the ages of 15 - 18. (This compares with 40 in 1975, the initial year). About 160 of the YCC'ers worked in the residential (live-in-camp) programs, with 80 at each of the 2 five-week sessions. In each session there were 20 young people at the Sundog Center near Bemidji; 30 at the Shores of St. Andrews Camp, adjacent to Sibley State Park; and 30 at Camp Foley, near Pine River.

In addition, 50 YCC'ers were hired in the non-residential (live-at-home, commute-to-work) program in 1 eight-week session. They were at the following locations: Twenty at Fort Snelling State Park, 20 at Whitewater State Park, and 10 at O. L. Kipp State Park.

In the summer of 1978 the Youth Programs Office was again able to add positions to the YCC program, bringing the total to 270 corps members. With the exception of the addition of a 60-person (30 per session) program at Camp Hastings North near Cook, Minnesota, program locations were the same as in 1977.

This program has made it possible to accomplish considerable work for the DNR and some local units of government. In addition to the work they do, YCC's receive a minimum of 10 hours per week of environmental education. It provides an excellent opportunity to educate the decision makers of tomorrow on the necessity of good conservation practices and what it takes to accomplish those goals.

At this time it is difficult to estimate what amount of reallocation dollars this program can expect to earn with its program development for the summer of 1979. However, it is anticipated that the program will remain, at least, at the 1978 level.

In July 1978 the program was approved to receive a grant for a new program, the Young Adult Conservation Corps (YACC), funded 100 percent by a federal grant. This is a work program for 16 - 23 year-old people who are out of school and unemployed. This work is available to them for up to 12 months, to accomplish projects of a public nature. By June 30, 1979 the Youth Programs Office hopes to have employed a minimum of 200 young people for year-round work, which will also help to accomplish much for the Department.

Presently, the crews are working out of a residential project of 26 enrollees adjacent to Itasca State Park; and various sized non-residential crews are at work, or planned for in northeastern, central and southeastern Minnesota and the Twin Cities Metropolitan areas. A second residential program is planned for northeastern Minnesota.

Scientific and Natural Areas Program

The SNA program entered into the FY 78-79 Biennium with its first substantial acquisition budget from RESOURCE 2000, totaling \$538,000. These funds will add the following Scientific and Natural Areas to the program:

Pennington Orchid Bog, Beltrami County, 107 acres; Iron Springs Bog, Clearwater Co., 160 acres; Boot Lake, Anoka Co., 300 acres; Hastings, Dakota Co., 40 acres; and Green Water Lake, Becker Co., 840 acres.

In addition, five tracts near St. Cloud were received by a free lease from The Nature Conservancy. One site (Wacouta SNA) near Red Wing was leased to the Department free from the Reichert family. Another received was the 220-acre Wolsfeld Woods near Long Lake, Hennepin County, notably one of the most valuable gifts to the State in recent years, valued at \$750,000. These projects have had strong local support and have generated considerable excitement in the scientific and educational communities. Green Water Lake in Becker County is expected to be acquired during FY 79 as a bargain sale from the landowner.

The program piloted a cooperative venture by The Nature Conservancy (T.N.C.) and Department of Natural Resources to inventory and manage SNAs using college interns and volunteers. This program proved to be very successful and was enthusiastically received by the local communities where the SNAs were located. The Nature Conservancy paid the salary of the interns during the biennium.

State Park plans developed during this Biennium provide for SNA units within seven parks.

The Wild, Scenic and Recreational River plans provide for two more SNAs within the Mississippi Scenic and Recreational River.

Canoe and Boating Route Program

Site Development

The Canoe and Boating Route Program (C.B.R.P.) has recently been switched from the Bureau of Planning to the Division of Parks and Recreation. Working through the Regional Department of Natural Resources' staff, the C.B.R.P. develops recreational management plans, acquires land and leases and develops recreational sites along the State's 18 designated canoe and boating route rivers. There is a continuing program of planning, development and maintenance of existing facilities along the designated rivers.

Public Services

The River Level Reporting Service has been improved with new, updated information. Public information services via telephone, letter and news releases has reached an all-time high. A new revised edition of the Canoe and Boating Brochure was printed. All 18 designated rivers are now mapped

and copies available for free public distribution. Some maps are outdated, others are out of stock. In FY 79 all maps will be reviewed and, where necessary will be reproduced. A new revised edition of the Canoe brochure, "A Gathering of Waters," has been published. A new 25-minute slide presentation has been produced, depicting the role of the 18 Canoe and Boating routes in the State. A total of \$100,000 was appropriated to the Canoe and Boating Route Program by the Governor's Office through the Aesthetic Environment Program, a part of the federal anti-recession program. This money was used to hire local people in the communities along the rivers to do a clean-up project. More than 2,000 miles of river bank has been cleared to date.

Upper St. Croix Project

The Federal Bureau of Outdoor Recreation on September 24, 1976 announced funding assistance for the Upper St. Croix Project totaling \$4,003,000. These funds enabled acquisition of land and development of recreational facilities in accordance with the Department's Resource Management Plan for the Upper St. Croix -- which encompasses St. Croix and St. Croix Wild River State parks, and the St. Croix and Chengwatana State forests.

Campgrounds, primitive hiking and canoe campsites, trail systems and day-use facilities were completed in the project area. St. Croix Wild River State Park was officially opened October 1, 1978. These four units are expected to attract more than a million visitors annually.

Northern States Power Company, which is in the process of donating 13,800 acres of land within the project area, has completed donation of 8,500 acres valued at \$4,003,000. Remaining donations are to be completed prior to 1981.

Interpretive Services

Interpretive Services are being provided this Biennium in 24 of the 65 State Parks, reaching approximately one-third of the park visitors, who gain greater understanding and respect for park resources. Interpretive activities include: display materials, slide shows, film presentations and hikes. During the last two years the Interpretive Program has received invaluable assistance from the Minnesota Humanities Council, Minnesota Poetry Outloud, Minnesota Historical Society, individuals of the Science Museum, Universities of Minnesota, and others.

#

WATER RESOURCES MANAGEMENT

The Division of Waters presently consists of six functional units: Hydrology Section, Development Section, Dam Safety Section; and Flood Plain and Shoreland Section -- which contains the administratively-assigned Public Waters program, the Hydrographic Services Unit, and the Administrative Services Unit.

The present Central Office permanent staff complement consists of 32 professional positions, 12 para-professional and six clerical positions. In addition, there are 18 professional positions assigned to Regional and Area offices within the six Department Regions.

Flood Plain and Shoreland Management Section

Shoreland Management

During FY 78-79 there has been continued assistance to counties in administering the 85 county shoreland management ordinances in effect. Section staff assisted 20 municipalities in adopting shoreland ordinances that complied with state standards, and were working with numerous other communities in developing ordinances. Another 15 to 20 ordinances are expected to be adopted by the end of FY 79.

Flood Plain Management

During FY 78, a total of 20 state-approved flood plain ordinances were adopted by Minnesota counties and cities. As of October 1, 1978 an additional ten ordinances have been adopted; for a total of 100 state-approved flood plain ordinances in effect. By the end of FY 79, another 30 ordinances are expected to be adopted. As each ordinance is adopted, the Flood Plain Management staff has been required to devote considerably more time in assisting communities in administering existing ordinances.

Eighty new Flood Insurance Studies were initiated during FY 78 by the Federal Insurance Administration, along with 60 new studies in FY 79. Each study necessitates considerable staff involvement, and eventually will result in adoption or amendment of a flood plain management ordinance.

Central Office and Regional staff had substantial involvement in the aftermaths and disaster relief following major floods in the Red River Valley (April 1978), the Twin Cities (August 1977 and June and July 1978), and in Rochester and Austin (July 1978). Staff assisted in the relief effort and gathered considerable data concerning flooding characteristics.

In FY 79, "Sample Flood Plain Management Ordinance for Local Units of Government" was published.

Wild and Scenic Rivers Land Use

Responsibilities for implementation of the land use responsibilities for the State Wild and Scenic Rivers Program were transferred to the

Division of Waters in August 1977. The process of establishing a closer coordination between all those Department of Natural Resources programs involved in regulating land use has been initiated. Staff have worked with communities on state designated rivers, resulting in the adoption (prior to October 1, 1978) of 12 city and county ordinances. It is estimated that during the remainder of FY 79 some 17 additional ordinances will be adopted.

Lower St. Croix Riverway

Ten cities and counties adopted ordinances during FY 78 that comply with NR 2200 regulation. Division staff now are assisting these communities in administering the ordinances.

Public Waters Program

Pursuant to Minnesota Statutes 105.37, 105.391, and 105.392, the DNR is charged with the responsibility for implementing a Public Waters Inventory and Classification Program, and a Water Bank Program. These programs are intended to identify waters serving beneficial public purposes which are subject to regulation under M.S. Chapter 105, including wetlands. Beneficial public purposes may include water supply, recharge or ground water strata, floodwater retention, nutrient entrapment, recreation, public navigation, wildlife habitat and scientific and natural areas.

The law directs the Department to carry out the inventory and classification of waterbasins in coordination with the counties and provides funding for the counties to undertake the inventory and classification of watercourses, in coordination with the Department.

Rules have been promulgated relating to the Water Bank Program, which upon completion of appropriate public waters designation provide a means of compensating landowners for preserving existing wetlands suitable as good agricultural land.

The DNR (as of October 1, 1978) has completed, in all counties, preliminary classification of water basins as public waters. Final discussions concerning designation of waterbasins as public waters have been initiated with 20 counties, by the Department. Hearings on designation of public waters and delegation of regulatory authority for Class III Watercourses have been held in two counties, but because of concerns expressed over certain of the proposed designations, the hearing examiner continued the hearing in one county, and ordered a new hearing in one other county.

Due to its controversial nature, the Public Waters Program underwent extensive review and critique within the Department. As a result, the Department entered into a contract with an outside consultant to identify, classify and document criteria used to determine a beneficial public purpose in regard to waterbasins. The study, to be completed by the end of calendar year 1978, will provide increased objectivity in the inventory, classification and designation of public waters.

Projecting through Fiscal Years 79 and 80, at least 28 hearings are anticipated relative to designation of public waters.

Watershed District Functions

The Division prepared four Director's reports on watershed district projects and five reports on changes of boundaries petitions. One Director's report on revision of an Overall Plan was prepared. Several watershed district project hearings and managers' meetings were attended--regarding review of overall plans, project proposals, and District rules and regulations.

As of October 1, 1978 the Division was involved in five watershed district actions. It is anticipated that another six watershed district matters will come before the Division of Waters prior to June 30, 1979.

Development Section

Regulations

Applications for permits to change the course, current, or cross-section of public waters and for appropriation of waters of the state reached an all-time high in FY 77 as a result of the drought. Of the 3,982 applications received, 2,441 had been finalized at year's end. Since 2,035 of these applications were for water appropriation and 1,878 were for irrigation, staff time that had originally been allocated to drafting rules for issuance of water appropriation permits was directed to the more immediate problems of handling irrigation and other drought-related requests for water use.

In FY 78 (and FY 79 to October 1) applications for permits of all types dropped back to a more normal level of 2,221. Only 325 irrigation requests (of 451 water use requests) are included in this total. Hence in FY 78, a citizen committee was formed to assist the Division in preparing rules to allocation of water; and a first draft was prepared. The second draft was completed during the first quarter of FY 79, and it is expected that rules will be taken to hearing during the last quarter of FY 79, and promulgated shortly thereafter.

Following six public meetings and three hearings, the rules for the issuance of public waters permits became effective June 1, 1978.

Staff time has since been directed through a citizen education program, toward effective implementation of the rules. Five pamphlets have been prepared explaining different aspects of the rules, as they relate to common types of projects. Staffers have participated in programs for professional groups and the general public, to explain the applicability and content of the rules.

Regional offices now process most permit applications for public waters permits, which are then transferred to the Central Office for final review. Application forms and other procedures currently are being revised to both simplify and clarify application procedures and requirements and to provide guidelines for evaluating applications. It is

expected that revised forms for both types of permit activities will be completed during the remainder of FY 79 and that procedural manuals will then be adopted.

Public Drainage Functions

As of October 1, 1978 the staff had reviewed and analyzed 44 public drainage projects as required under Minnesota Statutes Chapter 106. These were prepared as Director's reports.

It is anticipated that an additional 60 reports will be prepared during the remainder of FY 79.

Hydrographic Unit

Field Surveys and Investigations

During FY 78, the Hydrographic Crew completed a total of 102 surveys in 41 counties. The majority of these surveys involved investigations of hydrologic, hydraulic, and topographic conditions around lakes. Topographic maps were prepared from 35 of the above-referenced surveys. From July 1 to October 1, 1978 a total of 34 requisitions were prepared for surveys by the Hydrographic Unit. It is anticipated that an additional 120 surveys will be required for the period October 1, 1978 to June 30, 1979.

During FY 78 a total of 131 investigations (and necessary maintenance) were conducted at state-owned dams. From May 8 to September 15, 1978 an additional 73 such investigations were conducted. It is anticipated that for the remainder of the biennium an additional 115 inspections will be required.

Lake Gaging Activities

A total of 89 lake gaging stations were established by the Hydrographic Unit during FY 78. This activity involved 3,500 miles of travel, and 130 hours. Maintenance of the gaging stations and recording the data from gage observers is a continuing activity.

Hydrology Section

The Hydrology Section conducts investigations and studies which provide for the collection, analysis, retrieval, interpretation and dissemination of technical data and facts on climate; and the availability, distribution and utilization of ground and surface water. These are for use by sections of the Division, other public agencies and the public. The Hydrology Section is comprised of the Ground Water Group, Lake Hydrologist, Stream Hydrologist, the State Climatologist, and Hydrologic Systems support.

Ground Water

The Ground Water Group activities included publication of two Division of Waters technical papers: No. 5 - "Ground Water and Aquifer Tests" and No. 6 - "Geology and Water Supply Potential of the Anoka Sand-Plain Aquifer, Minnesota". Ground water training activities included ground water related presentations at eight training sessions and seminar conferences.

In support of the Division ground water management and appropriation program, 21 aquifer tests were conducted and monitored and 60 aquifer tests were analyzed. A total of 140 ground water technical requests were provided. These included ground water irrigation permit review, review of well interference complaints, and preparation and review of papers for the Water Planning Board.

Major ground water related projects underway include mapping of high capacity wells (irrigation and municipal) and observation wells; determination of aquifer hydrologic parameters; and determination of ground water availability, occurrence and use for a demonstration project of the Data Management Work Group for Irrigation, as part of the State water planning effort coordinated by the Water Planning Board.

Sponsored as part of the cooperative program between the Division and the U.S. Geological Survey, the following ground-water studies were completed:

- * "A Hydrogeologic Reconnaissance of the Sand-Plain Aquifers in Minnesota"
- * "Pelican River Sand-Plain Planning Study"

The following ground-water studies have been initiated:

- * "Assessment of Surficial Aquifers in Todd County, Minnesota"
- * "Water Resources Development in the Western Part of the Buffalo Creek Watershed"
- * "Ground Water for Irrigation in Parts of Big Stone County"
- * "Availability of Ground Water from Shallow Aquifers in Extreme Southwestern Minnesota"
- * "An Appraisal of Water in the Surficial Aquifer of the Pelican River Sands Area, West Central Minnesota"

Lakes

The Lake Hydrologist performed a wide variety of hydrologic, informational, and administrative services -- including 25 individual hydrologic studies and technical evaluations conducted at the request of DNR Central Office and Regional staff. These studies included lake level analysis, hydrologic modeling, water budget analysis, data collection, and the preparation of testimony for legal proceedings. One such study resulted in the publication of Division of Waters Technical Publication No. 7, - "The Hydrologic Feasibility of Alternatives for Raising and Maintaining Big Kandiyo Lake."

Hearings were held concerning high water levels experienced on Big Marine Lake, Big Carnelian Lake and Little Carnelian Lake. A Commissioner's Order was issued establishing Ordinary High Water Elevations for each of the three lakes; a second Commissioner's Order was prepared establishing

control elevations for Big Marine and Big Carnelian Lakes, and authorizing Washington County to undertake appropriate lake control structures consistent with the Commissioner's Order, and M.S. 105.42.

Approximately 50 informational and administrative service requests were handled. These included the drafting of lake improvement district rules; participating on committees treating aeration system policy and lake protection levels; developing improved lake data acquisition procedures; a lake summary data base; administering of the lake improvement grant-in-aid program; and representing the Division at public hearings and meetings. Numerous routine inquiries from DNR staff, other governmental agencies, industry, consultants and the general public were responded to on a daily basis.

The Lake Hydrologist has responded, as a source of technical reference and consultation in surface water hydrology, to a variety of DNR and Pollution Control Agency staff and water resources consultants.

Streams

As of October 1, 1978 a total of 30 requests and advisories (consisting of six major, seven intermediate and 17 minor technical services) were accommodated by the Stream Hydrologist. Three studies were completed, including a hydrologic evaluation of Lake Bronson Reservoir; flooding due to dike on the Root River near Houston; and regulatory flood level along the Holman Airfield for the Metropolitan Airport Commission. Three studies are in progress: Ditch No. 75 Freeborn County; Ditch No. 71 Le Sueur County; and protected low flow of Minnesota streams. Of the seven intermediate requests which involved hydraulic solutions, six are completed and one is in progress. The minor services included review of reports, comments on application of research grants, request for information, inhouse consultations, and miscellaneous others.

Climate

The State Climatologist has established and continued to operate during the Biennium the reporting precipitation network across the state.

Rainfall maps were prepared for the intense, severe summer storm occurrences during 1978, which caused significant flooding in the southeastern part of the state.

Snow depth maps were prepared and distributed at weekly intervals during the winter and early spring of 1977 and 1978. Lake ice maps were prepared and made available during the spring of 1978.

The Climatologist participated in development of a program for collecting soil moisture data -- in cooperation with the Minnesota Department of Agriculture, the State Planning Agency, and the Agriculture Extension Service of the University of Minnesota -- and DNR entered into an agreement to jointly fund a soil moisture network.

In response to Federal Legislation passed during the 1978 session, the State Climatologist is developing the alternatives for a State Climate Program, involving a state-federal effort in cooperation with the

Minnesota Department of Agriculture and the University of Minnesota.

The State Climatologist continues to complete applied climatologic studies for state and local agencies, and to cooperate with University research interests.

Data

Activities of the Hydrology Section also have included implementation of a hydrologic data base in coordination with the Ground Water Group, other units within the Division and Department, and other state agencies. Their efforts include: computerization of the data, creation of a system for using the data, and analysis of the data. Efforts were started in FY 78 by designing data capture systems for reported pumpage and irrigation permit information, and providing an initial outline of the data bases.

Through October 1, 1978 the data capture program was expanded to include municipal water use, all permitted use in 1976, and outside agency information. An analysis aimed at determining data error and information gaps in Division of Waters records also was initiated. Twelve state agencies have been included in the efforts in the past year, and many of these agencies' needs have been considered in the hydrologic data system design. Prototype data systems are now operational.

In the remaining months of FY 79, the present 35,000 cards of information will be entered into the data system, and an additional 50,000 cards of information are planned to be captured and entered during FY 79. Documentation of the data base should provide, by the end of FY 79, easy access to the information by both Division of Waters and non-Division personnel.

Underground Storage of Natural Gas

During the past biennium, the Minnesota Gas Company (Minnegasco) underground gas storage project near Waterville, Minnesota continued as the only project of its kind in the state. The project began operation in 1968 shortly after the Department issued a permit to the company to displace ground water from the Mt. Simon sandstone formations (a ground water aquifer) by the injection of natural gas. The maximum amount of gas currently authorized in the storage structure is five billion cubic feet, and the project continues to be considered experimental in nature.

The company has recently requested approval to increase the storage inventory, by stages, to 10 billion cubic feet of gas. A public hearing was held on October 2, 1978 regarding this request. The hearing also dealt with the addition to the permit of a fee schedule relating to costs of monitoring the project. It is anticipated that disposition of this matter will be made during FY 79.

Dam Safety Section

Chapter 779, Laws of 1978, established a statewide program for the inspection of dams throughout the state, in order to determine the potential hazards to public health, safety and welfare; and the conditions of dams. This includes the inventory, characterization,

classification, and examination of structural and hydraulic capacity.

The inspection of High Hazard dams, which pose potential hazards to life, health, and major property damage, are conducted in cooperation with the federal government under a combined State and National Dam Safety program. There are approximately 1,200 existing dams in Minnesota, of which an estimated 100-150 are in the high hazard class. Accurate numbers of dams and their hazard classes will not be available until all dams have been inventoried; expected to be completed by 1981.

An indeterminate number of new dams built each year will be classified in respect to potential hazard, and construction will be monitored, inspected, and subject to permit and work approvals.

In furtherance of the law, the Division established a Dam Safety Section including a Section administrator, dam safety engineer and four permanent professional staff.

The major objectives of the Dam Safety Section are to:

1. Inventory, characterize, classify and inspect all existing dams in Minnesota (estimate approximately 1,200) by January, 1981.
2. Supervise the construction of new dams built each year: by issuing permits, monitoring construction, and granting detailed work approvals to insure safely-constructed and maintained dams--with maximum reduction in hazards and risks to health, safety and welfare.
3. Insure that all dams are: maintained in a safe condition, operated according to approved plans, and monitored periodically to assure continuing safeguards to health, safety and welfare.
4. Establish emergency procedures and warning systems against the advent of dam failure.
5. Supervise transfer of ownership and abandonment of dams.

Another responsibility of the program involves assistance to local governments. Legislation provides grants-in-aid for repair and reconstruction of publicly-owned dams--in the interests of public health, safety and welfare. A prioritized report is required for publicly-owned dams needing repair or reconstruction. Priorities are based on hazards to life and property, age and type of dam, present and future uses of the dam and the importance to the state resources program. There are approximately 600 dams owned by the state and local governments in Minnesota.

The Dam Safety Section inspects publicly-owned dams in need of repair or reconstruction; identifies the hazards to life and property; assembles background facts on the dams; reviews engineering plans and costs of repair or reconstruction; and provides the Legislature with a priority list and the estimated state share of costs for their consideration.

Grants will be made to local governments whose dams are approved for assistance by the Legislature.

As of October 1, 1979 the Section inventoried, characterized and classified 100 dams; inspected 25 high-hazard dams, under contract with consultants; and supervised the construction of five new dams in the state.

It is expected that the Section will (by October 1, 1979) inventory 300 dams, inspect 25 and supervise construction of ten dams.

During FY 1980-1981, an additional 800 dams are proposed for inventory; 65 high-hazard dams are proposed for inspection; and about 20 new dam constructions may be supervised.

#

ENFORCEMENT

The Division of Enforcement functions to protect and preserve Minnesota's basic resources--water, land, air and wildlife--for the pleasure, health and safety of the public. This is accomplished by enforcing State statutes, rules and regulations and training Minnesota's youth in the safe and proper use of firearms, explosive ammunition, bows and arrows and snowmobiles. Conservation officers also participate in extensive public relations work by assisting local citizens, sportsmen clubs, schools, civic groups and other organizations with conservation programs and problems.

Among the objectives of the Division are: to insure a safe, uncontaminated supply of water and air; to assure equal opportunity and success to hunters and fishermen; and to promote safe use of watercraft, all-terrain vehicles and snowmobiles without adverse effect on the natural resources and environment.

	<u>Accomplishments</u>				
	<u>1976</u>	<u>1977</u>	<u>Projected 1978</u>	<u>Projected 1979</u>	<u>Projected 1980</u>
Number of Arrests	9,415	8,904	9,200	9,200	9,200
Dismissal Rate	1.3%	2.5%	1%	1%	1%
Number of Big Game Animals Confiscated	6,982	7,979	8,000	8,000	8,000
Percent Sold as Perishable Product	75%	75%	75%	75%	75%
<hr/>					
Total Number of Youth Trained in Firearm Safety	458,568	479,602	500,000	520,000	540,000
Percent of 12-year old population trained	35%	35% (Est.)	35%	35%	35%
Number of Snowmobile Training Classes	512	385	385	385	385
Total Number of Youth Trained	155,310	164,531	174,000	183,000	192,000

This Division enforces rules and regulations for the use of state parks and forests, campgrounds, trail systems and wild and scenic rivers. To date, some 500,000 youths have been trained in the safe use and care of firearms, explosive ammunition and bows and arrows. This program has gained national recognition. Other states and provinces have modeled their programs, based on Minnesota's pioneering efforts.

Conservation officers initiated the first comprehensive aerial survey and mapping of bald eagle and osprey nests, have successfully investigated and prosecuted pollution cases, and searched for and/or rescued lost hunters and hikers.

These achievements have not gone unnoticed. It is seldom that a year goes by without an instance of a conservation officer being honored for heroic or "above-the-call-of-duty" actions. In 1978, the Department singled out a conservation officer pilot and a conservation officer for saving a life; a conservation officer supervisor and three officers were honored for meritorious service during the Rochester flood. Another conservation officer was publicly recognized for his year-around efforts with an award presented during the Alexandria Sportsmen's Club Appreciation Day.

The rate of turnover among conservation officers, due to retirements and sudden death, creates a replacement problem; since the Division of Enforcement's present complement does not authorize hiring until a vacancy exists. Since it requires about a year to train a new officer to "field efficiency," the Division is requesting of the 1979 Legislature positions and funding for a 15-member trainee squad each biennium. With proper training, an officer will be available and ready to transfer immediately to an "open" station. This will eliminate situations that find areas of the state remaining without enforcement coverage for as long as a year. It will also create help for high use areas such as the annual smelt run, and the pheasant season.

Conservation officers are alerted to the needs of the physically disabled and issue them special use permits, as authorized by law, so that they also may enjoy Minnesota's natural resources.

#

PLANNING AND RESEARCH

Headed by the Assistant Commissioner for Planning, this office consists of two bureaus: Planning Services and Review, and Planning and Research.

Planning Services and Review

The major activities conducted by this Bureau include environmental review, federal aid administration and special projects planning. During the past two years the latter has included participation in the Coastal Zone Management program, the Great River Environmental Team (GREAT), the Duluth-Superior Harbor study and the Mississippi River issues--including Lock and Dam 26 and Critical Areas Planning.

As a result of reorganization, several additional functions were included in this Bureau from November 1977 to July 1978. These activities included the shore land and floodplain regulation unit and the land use controls section of the Wild and Scenic Rivers planning unit. Also included was the Federal Relations function, which served as a liaison between DNR and federal agency personnel involved with various projects.

Following is a summary of the activities and accomplishments of units comprising the Bureau of Planning Services and Review as of October 1, 1978.

Environmental Review

The Environmental Review Section coordinates the Department's review and response on a wide variety of plans and project proposals.

The principal work of this activity evolves from Federal and State requirements that necessitate preparation and review of environmental documents. During the Biennium, a total of 402 documents were submitted to the Department for review. A total of 158 Environmental Quality Board (EQB) items included three power plant proposals, a 500 Kv transmission line from the Twin Cities to the Canadian border, four pipelines, five major ditch projects, two marinas on the St. Croix, and the Roseau River Flood Control Project.

The Bureau was responsible for the preparation of environmental impact statements for three of the pipelines and the flood control project. Three documents remain to be completed before June 30, 1979. Sixty additional EQB project documents are anticipated through June 1979.

Review of projects and plans under Federal requirements (National Environmental Policy Act) included 34 documents from the U.S. Army Corps of Engineers for projects such as Lock and Dam 26, Roseau River and Rochester flood control projects and various dredging and barge terminal facilities.

Documents on highway projects totalled 143 and included I-35E in St. Paul (Blackhawk Lake crossing), the Shakopee Bypass (T.H. 101), I-94 (Brooklyn Center), segments of Trunk Highway 10, the Northtown Corridor, the Mn/DOT Transportation Plan, numerous upgradings and bridge replacements. The Bureau also handled plans for Voyageurs National Park, the use of herbicides in Chippewa and Superior National forests, federal roadless area studies and the use of off-road vehicles on public (federal) lands.

Departmental Review also was requested, by various Regional Development commissions and on 14 land use planning components.

Ninety additional documents are anticipated to be submitted through June 1979, including bridge crossings for the Minnesota Valley and new plans for the Superior National Forest.

A new activity for this Section involves reviewing DNR management plans and policies prior to release to the public. Thirteen proposals were reviewed through September 1978. The Section is also coordinating the review of Water Planning Board activities pertaining to DNR.

The Environmental Review activity is conducted through the interdisciplinary mechanism of the Program and Environmental Review Team (PERT) which consists of DNR's Division Directors and Bureau Administrators and the Executive Director of the Soil and Water Conservation Board. PERT is chaired by the Administrator of the DNR Bureau of Planning Services and Review. The Environmental Review Section serves as staff to PERT.

Departmental positions on significant or controversial issues are acted on by PERT at monthly meetings. PERT recommendations are then forwarded to the Commissioner of Natural Resources for final decision. Through PERT, the DNR is assured that the broad range of natural resource concerns have adequately been considered and handled.

Special Studies Planning

Studies and issues in progress during the Biennium included the Great River Environmental Action Team (GREAT I), Mississippi River Critical Area Planning, Mississippi River Lock and Dam 26 legislation, and regulation of Corps of Engineers dredging operations under Section 404t of the Clean Water Act of 1977.

Participation in GREAT I has resulted in decreased adverse environmental impacts on Upper Mississippi River Resources resulting from Corps of Engineers maintenance dredging. The percent of dredged spoil was reduced by 36 percent in 1977 and 21 percent in 1978, from volumes dredged (before GREAT I) in 1974. The percentage of the total volume dredged and used for some beneficial purpose was 54 percent in 1977 and 49 percent in 1978. The comparative figure for the pre-GREAT I period was 15 percent.

During the Biennium, nine sites were constructed as a result of GREAT I coordination, to prevent dredged spoil from entering wetlands. Planning personnel influenced preparation of the GREAT I Interim Status Report (1977) to reflect Department concerns. Planning personnel will continue to provide input to preparation of the final GREAT I Report. Draft Floodplain Management Appendix to the final report was prepared in September 1978.

A Department management plan for the Mississippi River Metropolitan Critical Area was prepared in October 1978 as required by Governor's designation order.

Planning personnel provided input to Congressional delegation concerning debate on federal Lock and Dam 26 and Mississippi River Master Planning legislation. Legislation passed was favorable to Department policy.

Planning personnel during FY 78 developed a policy to guide Department regulation of Corps of Engineers maintenance dredging, under authority of federal Clean Water Act of 1977 (Section 404t).

Other projected accomplishments for FY 79 include development of a Mississippi River barge fleet plan, in cooperation with the inter-agency task force.

Coastal Zone Management (CZM) Program

The CZM Program has been conducted by the State Planning Agency and is intended to provide a long-range management program for the coastal resources of Lake Superior. The DNR's involvement in the process has been to provide technical advice and input to program development and to review program products to insure that the Department viewpoint is represented.

During the study, the Bureau completed and published an outdoor research project "The North Shore Recreation Study," to improve planning for North Shore parks as a system, and relate the parks to other recreation facilities in the area.

The Bureau worked with the Arrowhead Regional Development Commission and the Metropolitan Interstate Committee to draft a Duluth-Superior Harbor Plan. This plan has long been needed to better assess the need for, and environmental effects of future harbor dredging.

Grants and Aid Programming

This unit is responsible for the administration of various federal grants-in-aid programs; primarily the Land and Water Conservation Fund (LAWCON) Program for state agency acquisition and development of outdoor recreation facilities; including parks, trails, state forests and others. The unit also has been instrumental in obtaining additional federal funds for the Department from such sources as the U.S. Department of Commerce. The following table represents activity of the Land and Water Conservation Fund Program for the two-year period from October 1, 1976 through September 30, 1978:

Land and Water Conservation Fund:

Active State Agency and Contingency Reserve projects totalled 178.

Projects and Amendments Approved: 140 projects/amendments totalled \$10,307,016 (federal share)*

Acquisition	48 project/amendments	\$3,526,038
Development	84 project/amendments	2,429,729
Acquisition & Dev.	5 project/amendments	4,225,850
Planning	3 project/amendments	125,699

*This figure represents \$1,750,000 of Contingency Reserve money obligated on the Upper St. Croix Scenic Riverway project, and \$550,300 of Contingency Reserve money obligated on two local unit of government projects.

Reimbursements Received:

Acquisition	\$4,004,565
Development	1,470,202
Planning	<u>11,119</u>
Total Reimbursements	\$5,485,886

In addition, \$524,000 was obtained from the Local Public Works Capitol Development and Investment Program to develop facilities within state parks, for the handicapped.

It is anticipated that an additional \$2 million in Federal LAWCON funds will be obligated, and \$2.5 million in LAWCON reimbursements collected by June 30, 1979.

Policy Planning

This activity includes Outdoor Recreation Planning and Suitability Analysis/Policy Planning (Long-range).

Major accomplishments during FY 78-79 included completion of a statewide outdoor recreation participation and needs survey, compilation of DNR and county land records, an updated land ownership/classification record listing, a draft capability analysis of forest productivity for the state and a draft wilderness policy paper.

Accomplishments also included development of a state ownership map, long-range system development plan, land use and cover manual, planning and data summaries, a process for evaluating DNR residences, statutory summaries and computerized listings, inventory pilots for wildlife management areas and landscape regions, and a statewide cross-country ski touring analysis. Policy issues handled included the management of timber and recreation in the BWCA, softwood alternatives relative to the BWCA, DNR buildings, pesticides, and scientific and natural areas.

Between October 1, 1978 and June 30, 1979 identification and analysis of land use conflicts will be undertaken. In addition, analysis of the recreation survey data will be completed and the information incorporated into the new 1979 "State Comprehensive Outdoor Recreation Plan" (SCORP). The new SCORP is being developed and adapted to conform to federal changes in philosophy and requirements. A statewide inventory of public-administered trails, and development of Department policy for units of the outdoor recreation system, as well as other issues, will also be finalized.

Development of an atlas of resources/issues, scenic amenity analysis, and a public land ownership map and report is underway, and will be completed by June 30, 1979.

Work on a state agency-wide land record system; wildlife, fish, and water clarity analysis; statewide recreation system coordination; and a metropolitan recreation coordination program will be partially completed by the end of FY 79.

Water Policy Planning

This important policy planning work resulted in the completion during FY 78-79 of numerous reports, surveys and related actions. These included specific contributions to the Upper Mississippi River Basin Commission's efforts as follows:

FY 77 Program Report, FY 78 Priorities Report, and the Twin Cities Level "b" Report. The State Framework Water Plan undertaking included the initiation of: public meetings on statewide water planning, statewide watershed mapping project and water data availability surveys.

This State Water Plan effort also resulted in completion of reports on "State Water Management Analysis, Phase I," "Water Appropriations in Minnesota--1976," and "Benchmark Report on Water Resources in Minnesota." Other reports completed were: "Analysis of Natural Highwater Marks in Minnesota," and "An Analysis of Instream Flow Needs in Minnesota."

During the remainder of FY 79, the Water Policy Planning Project will continue to execute its planning responsibilities for the Upper Mississippi River Basin Commission (UMRBC) planning process and the State Framework Water Plan. Data will be gathered, analyzed, recorded and reviewed for the UMRBC FY 78 Program Report, FY 79 Priorities Report; and Comprehensive, Coordinated Joint Plan Subregional Reports. In addition, the Water Policy Planning Project will continue to coordinate DNR review of all framework water planning publications and will play the major role in analyzing and writing Technical Papers in the following areas:

Instream Flows and Major Flooding in Minnesota, Current and Future Demand-Supply Conflicts, Statewide Water Management Analysis, and State Water Data Availability Survey.

The Water Policy Planning Project will complete its state watershed mapping effort, which will delineate a single set of height-of-land boundaries for all major and minor watersheds within the State of Minnesota.

Bureau of Planning and Research

Parks Planning

Nineteen park management plans were completed and approved during FY 78-79 by the State Planning Agency in accordance with the Outdoor

Recreation Act of 1975. These plans have been developed with extensive public involvement, so that a consensus is reached on just how each specific park will be developed and managed. These 19 parks are Afton, Camden, Father Hennepin, Forestville, Fort Snelling, Frontenac, Gooseberry, Hayes Lake, Interstate, Jay Cooke, Lake Bemidji, Lake Bronson, Lake Maria, Maplewood, Minneopa, O.L. Kipp, Scenic, Sibley, and Whitewater.

The final printing and distribution of these parks' plans will be completed by early 1979. Work is underway on nine additional parks plans scheduled for completion by June 30, 1979. In addition, a coordinated effort for planning the Minnesota River Valley Recreation Area -- with the Federal Fish and Wildlife Service, neighboring counties and communities -- is in progress, for completion by fall 1979.

Rivers Planning

During the 1978-79 Biennium the Rivers Section prepared management plans and held hearings on the Minnesota River (Lac qui Parle to Franklin) and the Rum and Crow Wing rivers. The Minnesota and Rum rivers have been designated components of the Wild and Scenic Rivers system. Plans have been prepared and hearings will be scheduled for the Cloquet and St. Louis rivers. Work with local citizens advisory councils is under way on the Cannon River, and the Minnesota River (Franklin to Le Sueur). Preliminary studies are nearly complete on the Snake River and the North Fork Crow River -- Wright and Hennepin counties.

Scenic easements have been purchased on the Kettle River (Pine County), Mississippi River (St. Cloud to Anoka), and North Fork Crow River (Meeker County). Land acquisition has begun on the Minnesota River (Lac qui Parle to Franklin) and the Rum River.

In addition to management plans and associated informational materials, Rivers Section staff have prepared and published a new informational brochure, "Minnesota's Wild and Scenic Rivers"; a comprehensive, 106-page guide to canoeing in Minnesota, "A Gathering of Waters;" a series of 30 canoe route maps on the 18 state canoe and boating route rivers; and an informational brochure on the canoe and boating route program, "Minnesota Canoe Trails," now in its second printing.

Trails Planning

State Forest trail plans were completed and approved during the Biennium by the State Planning Agency as follows: Pillsbury, Savannah, George Washington, Golden Anniversary, Foot Hills, Wealthwood, and Land O'Lakes state forests. The Heartland State Trail Plan was completed and approved by the State Planning Agency.

Plans for eight State Forest Trails are scheduled for completion, and approval by the State Planning Agency during the remainder of FY 79. These are Fondulac, Burntside, Kabetogama (Fields Lake), Kabetogama (Ash River Falls), Paul Bunyan, Cloquet Valley, Dorer Memorial Hardwood, and Finland state forests.

Also, plans for three state trails are scheduled for completion, and State Planning Agency approval, as follows: Luce Line, St. Croix (Afton-Hastings), and Douglas. The plan for the Taconite Trail is expected to

be completed and submitted to the State Planning Agency before June 30, 1979.

Wildlife Management Area Planning

Management plans for the nine wildlife management areas which have resident managers were required by the 1975 Outdoor Recreation Act. Five of these were completed and approved in late 1977, as follows: Carlos Avery, Mille Lacs, Lac qui Parle, Talcot Lake, and Whitewater.

Work on two additional plans, for the Roseau River and Red Lake Wildlife Management areas, will be nearing completion by June 30, 1979. The statewide Wildlife Management areas' management policies also are scheduled for completion by that date.

#

SOIL and WATER CONSERVATION BOARD

State statutes charge the Soil and Water Conservation Board (SWCB) with providing administrative leadership for Minnesota's 92 Soil and Water Conservation Districts and their 460 elected officials. The authorities of the Board and individual districts were altered significantly by the 1977 Legislature. Most important among these changes are the new roles and responsibilities in the area of water quality protection. In meeting these new statutory responsibilities the Board has expanded its training programs and developed additional support and promotional materials.

Board staff are planning a series of training sessions for the 250 Soil and Water Conservation District employees, to be conducted during the final months of Fiscal Year 79.

Water Quality Protection

In examining the new District and Board responsibilities in the area of water quality protection, we find current efforts centered in three program areas: 1. Demonstration of effective means of controlling lakeshore, streambank and roadside erosion; 2. cost-sharing, with land occupiers, for the installation of soil and water conservation practices; and 3. planning for control of agricultural non-point sources of pollution.

The Board provides grants to local units of government to sponsor lakeshore, streambank and roadside erosion control demonstration projects. This program received initial funding for the 1976-77 Biennium from the Legislative Commission on Minnesota Resources (L.C.M.R.).

The Sediment and Erosion Control Demonstration Program has been very well received, and the initial \$300,000 appropriation from L.C.M.R. generated \$1.6 million in federal matching funds. Due to a late start on the program, no conclusions could be drawn on the effectiveness of lakeshore, streambank and roadside projects in controlling sediment. With this in mind, the SWCB went back to the LCMR to request an additional biennium of funding. The L.C.M.R. provided \$501,000 for the 1978-79 Biennium. Within the first year, all these funds were obligated to 24 projects generating \$1.4 million in local and federal matching. An additional \$700,000 in requests was received by the SWCB. As a result of several projects turnbacks, these applications will be reviewed, and reallocation of funds will be made. Priority will be given to those projects receiving federal matching funds.

Much of the success of this program results from the State becoming involved in what traditionally has been a federal-local concern. Erosion control of lakes, streams and roads is very costly. Even with federal funds, many important projects could not be put on the land because of the limited availability of local funds. The State's involvement is helping to change this perspective.

Cost-Share Program

The 1977 Legislature amended Chapter 40, MRS to create the Minnesota Cost-Share Program. The Chapter 40 amendments included a cost-share appropriation of \$3 million for controlling soil erosion, sedimentation and related water quality problems. Of this total, approximately \$2.4 million was allocated for cost-sharing with land occupiers on permanent, non-production-oriented practices to control soil erosion and sedimentation, and to protect water quality.

A provision to assist Districts in the technical and administrative aspects of this program was also included. This involves grants to Districts for hiring the technicians and administrative personnel necessary to implement the program. For this purpose, the State Board provided \$300,000 in technical and \$150,000 in administrative grants.

The Minnesota Soil and Water Conservation Board Cost-Share Program is the only District-administered program of its kind in the nation. Soil and Water Conservation Districts apply to the State Board for funds. The Board then awards grants to the Districts based on the information contained on their applications, and priorities identified in their long-range plans. Upon receipt of the grants, District Boards are responsible for local administration.

By the end of FY 79, the State Board will have insured that all 92 District long-range plans are in compliance with the requirements set forth in Chapter 40, and will have completed development of its Program Plan. This plan will be coordinated as closely as possible with the statewide framework water resources plan, and the statewide water quality management plan. The plan will be used by the Board in decisions to allocate any additional funds to districts.

Minnesota's 92 Soil and Water Conservation Districts requested nearly \$13 million in cost-share assistance money, while only \$3 million was available. This clearly illustrates the need for accelerated soil and water conservation efforts.

The State Board will be continually monitoring the program to insure its compliance with the intent of the legislation. Subsequent reallocations may be necessary to meet demands, and to insure the most efficient use of state funds.

Non-Point Pollution

Additional impetus to soil and water conservation efforts is provided by the national efforts to control non-point sources of pollution. The Minnesota Pollution Control Agency (MPCA) has the lead responsibility for the program in Minnesota.

However, the SWCB has been involved in the State Water Quality Management Planning Program. An Inter-Agency Agreement with the MPCA in the amount of \$310,500 has enabled the Board to direct a large portion of the agriculturally-related and rural non-point source work.

It is projected that the SWCB will have submitted all final reports and products, and will have fulfilled the requirements of the Inter-Agency Agreement with MPCA, by April 1, 1979. MPCA will then combine the results of the Board effort with other elements of the planning program to develop a comprehensive water quality management plan for Minnesota.

Flood Control

The Board is continuing its flood control efforts in southwestern Minnesota through expanded cooperation with local units of government. Using special appropriations, the Board has entered into contracts with local governmental units in Study Area II of the Southern Minnesota Rivers Basin, for construction of flood control structures.

More than 300,000 acres of agricultural land are subject to periodic flooding and damage in Study Area II. One large structure near Walnut Grove is nearing completion, while a second structure located in Lincoln County is nearing the construction phase. The Board is authorized to provide 75 percent of the construction costs and has hired a professional engineer to carry out project design work and assist the local Action Committee in program administration. It is estimated that 81 structures are necessary to effectively control the flooding problem in Study Area II.

The Board will continue to fund one or two projects each year with available state funds, while offering support for current efforts to attract federal monies.

Rainfall Monitoring

The SWCB and SWCD's have begun implementing a new program for the State of Minnesota: a long-term rural rainfall monitoring program. Using a grant from the Governor's Rural Development Council, the SWCB purchased 600 rain gauges to provide for a network of one gauge every 12 miles across the state. The gauges were distributed to SWCDs who locate interested landowners willing to make continual readings. SWCDs began placing gauges the summer of 1978 and the system is expected to be completed by the spring of 1979.

Some of the benefits this network will give local people are: downstream effects of weather modification, rates and times for herbicide and pesticide application, and more precise information for engineering designs for erosion and sediment control structures.

This network will satisfy several elements of the National Climate Program Act of 1978 (PL 95-367). This Act provides for grants to states for planning and implementation of a state climate program.

Minnesota has become a national leader in rainfall monitoring and can claim the most comprehensive monitoring system in the nation.

#

INFORMATION AND EDUCATION

The Bureau of Information and Education is accountable, and reports directly to the Commissioner's office.

Authorized I and E complement is 15 professional and clerical workers.* In addition, five staff positions provide support services for the federally funded Boat and Water Safety Education program.

*(Note: On a per capita basis, the Bureau has the smallest I and E staff in the United States. Source: national survey, American Assn. for Conservation Information, an affiliation of 46 states, four Canadian provinces.)

Primary Bureau responsibilities include:

(1) Three programs mandated by the Legislature: statewide Environmental Education, voluntary Adult Hunter Education, and Boat and Water Safety Education.

(2) Responding to Minnesota citizens' right and need to know; which encompasses the programs, policies, goals and accomplishments of six major DNR disciplines, and their related activities, as well as conveying to the public accurate, objective information on Department authorities and overall resource positions and concerns.

Bureau functions, designed to complement Department objectives, and summary accomplishments:

News Section

Prepares, edits and disseminates to 375 Minnesota newspapers, as well as to wire services, radio and television media, more than 300 regular and special news releases, annually. As necessary, develops features on special subject areas, press conferences; responds to media informational inquiries and provides news clip services from Central to Regional offices. (The Department does not have Regional I and E positions.)

Radio: produces 52 weekly, 5-minute radio programs broadcast by 52 Minnesota stations; average annual production of 52 radio spot announcements available electronically to all radio stations in state.

News-informational publications: "The Communicator", for DNR employees; "Environmental Focus", an in-depth report on resource concerns, for conservation organizations.

Publications Section

Produces The Minnesota Volunteer magazine, circulation* 80,000; reader index 360,000. Extensively used for educational purposes in Minnesota classrooms; (21 percent of circulation dedicated to Minnesota schools; also circulated to all state and school libraries.)

(*Periodic, comprehensive survey of circulation will be conducted January-February 1979. Subscriber verification required to continue subscription. Designed to accommodate extensive waiting list.)

Summary of publication production, FY 78: 40 DNR Reports (1,000 each); 50,000 State Parks Guides; 20 State Parks Maps, plus interpretive text; 50,000 Wildlife Management Area Guides (two-year supply for cost-saving); 10,000 copies DNR Public Information publication; 5 Minnesota Heritage Series and Orienteering support units for environmental education; Minnesota Symbols publication; 300,000 copies of snowmobile regulations.

Section serves as DNR Publications Liaison; was instrumental in developing publications guidelines for State government.

I and E current average annual public informational literature distribution: 100,000 pieces in response to mail, telephone, walk-in requests.

Boat and Water Safety Education

Program mandated by Minnesota and federal law for all youths, 13 through 18 years, who operate watercraft powered by motors of over 24 horsepower. Since Jan. 1, 1975 more than 35,000 youths have been certified via courses developed and administered by Bureau Section, in cooperation with DNR Regions, Sheriffs offices, and other safety-related agencies.

In FY 78, safety education material distributed totalled 80,065 copies; watercraft operator's permits, 5,453; personnel trained, 143; 12 monthly boat and water safety newsletters distributed; 300,000 watercraft law pamphlets distributed; 82 water-related fatalities recorded (the lowest since records have been kept). This program received first place International Award, 1978. Section supervisor was recently assigned additional responsibility: DNR Boating Law Administrator.

Environmental Education

Conservation Education Act 1976 (Sect. 84.025, M.S. 1976, Sect. 126.111) gives Bureau primary responsibility for statewide curriculum materials development, teacher inservice training, statewide orienteering, and technical Environmental Education advice to school districts. In addition, the Bureau by Legislative Act (1978) has responsibility for implementing formal, voluntary Adult Hunter Education program.

Since inception of education program (1970) more than 28,000 teachers from 336 districts throughout Minnesota have received inservice training. Both primary and secondary education units have been developed and are being utilized statewide. Currently (FY 79) Adult Hunter Education program is being implemented on statewide basis. (The E.E. program received 2nd place International Award, 1978.)

Audio-Visual Section

Produces annually, 13 half-hour public service TV programs carried by six statewide commercial TV stations and three satellite outlets.

(Received 2nd place International Award, 1978.)

Provides technical services for all disciplines, DNR Regions; produces audio-visual support units for environmental education and training programs; produces, or assists disciplines in producing public informational slide series, scripts, film strips.

Via film loan library annually distributes (an average of) 4,150 films for a combined audience in excess of 300,000. Films are also extensively used for educational and training purposes, and interpretive services programs.

The Bureau of I and E coordinates the Annual Migratory Waterfowl Stamp Competition; designs stamp from winning artist's entry, and coordinates printing of 300,000 copies.

General Support: I and E provides technical support and advice for all disciplines; annually provides chairperson and general supervision for Conservation Building, Minnesota State Fair. (Estimated visitors: 800,000-plus.)

#

LEGAL

Legal matters of the DNR are handled by a Deputy Attorney General and assistants appointed by the State Attorney General. Among the services provided during the Biennium were the following:

*Litigation in Federal Courts (including District Courts, Courts of Appeal, and the Supreme Court) and state District Courts and tribunals other than district courts consisting of 90 cases, with 150 closed.

*Acquisition of lands for the Department consisting of 292 tracts for the Division of Fish and Wildlife (wetlands, spawning areas, and public accesses to lakes); 199 for Parks and Recreation; legal work on 331 parcels acquired by the Department of Administration for Parks and Trails; for a total of 822 tracts for which abstracts were examined, title opinions written and deeds prepared.

*Various legal services necessary for the preparation and accomplishment of 91 public hearings before the Commissioner of Natural Resources.

*Collection of 81 delinquent timber accounts.

*Disposition of 24 legislative claims.

*Completion of 9 of 32 pending land exchanges.

*Approval as to form and execution of 4,457 documents including various contracts, permits, deeds, leases, licenses and federal aid documents.

*Preparation of 151 Commissioner's Orders.

*Preparation of 11 formal Attorney General's Opinions; and numerous written advisory opinions to the various agencies and offices served by the staff.

In addition to these specific, quantifiable legal services, the Legal Bureau staff has provided services to the Department in connection with the drafting of 55 legislative bills for introduction in the 1977 and 1978 Legislative Sessions; the drafting of rules and regulations relating to wild and scenic rivers, captive wild animal exhibits, mined land reclamation, the Environmental Quality Board, land exchanges, parks and campgrounds, snowmobile use, snowmobile noise, the State Water Bank, and Red River diking; appearances before legislative commissions and committees; preparation of pamphlets containing the laws administered by DNR (such as the handbook of Game and Fish laws); and drafting, amendment and administration of the several hundred mineral leases currently in effect.

The staff also provided legal services to the State Soil and Water Conservation Commission, the Land Exchange Board and the State Executive Council.

REGIONAL ADMINISTRATION

Regional Administration provides a wide variety of services at the field level for the DNR's natural resource programs, its employees and the general public. This activity serves a multi-purpose role as it provides support through the functions of business management, field services (equipment, supplies and facilities), engineering, information dissemination and land-related activities.

Such a variety of support services allows:

- * The natural resource manager more time for this activity
- * The coordination of inter-divisional programs
- * Internal natural resource management program monitoring at the field level.
- * Greater involvement of the public

This activity is carried on statewide through each of the six Regional Headquarters; located in Bemidji, Grand Rapids, Brainerd, New Ulm, Rochester and St. Paul. The Regional Administrator is the Department's chief spokesman within his respective Region.

During the first year of the Biennium, the Region IV (New Ulm) Office Headquarters building was completed on the 79-acre tract donated to the Department by the City of New Ulm and Benson County. Also during the Biennium, the Region VI (St. Paul) building was remodeled into Region-Area Headquarters.

During the Biennium there was a marked improvement in the consolidating and utilization of Regional offices and facilities, which resulted in energy conservation and improved services to the public.

Additional office and field equipment was placed into multi-discipline pools, resulting in improved utilization.

An Executive Order placed the Minnesota Aesthetic Environment Program in the DNR in FY 78. Through the coordinated efforts of the Department, most of the counties and numerous volunteers became involved of abandoned autos and dilapidated buildings, stream cleanup and community beautification.

Regional personnel were involved in 418 public-participation meetings during the Biennium. Twenty-six Regional personnel were trained to provide emergency service assistance in the event of a natural disaster.

During FY 78: Region I (Bemidji), Region V (Rochester) and Region VI (St. Paul) -- in addition to selected specialists from the other Regions and DNR Central Office -- provided 450 man-days of service following floods and tornadoes.

Architectural planning and engineering services got under way during the Biennium for the new Regional Headquarters complex in Region II (Grand Rapids) and for a shop-warehouse building at the Region I Headquarters site at Bemidji. It is anticipated that these two buildings will be completed in FY 80. Studies are currently under way for a consolidated Regional-Area office at Region III (Brainerd).

Regional Administrators will continue to emphasize public involvement in local and statewide natural resource programs, through the collection and dissemination of information.

#

LAND

Acquisition and Exchange Section

The Bureau of Land's Acquisition and Exchange Section has two basic functions:

Land acquisition involves the acquiring of land for state parks, trails, forest management, game management, fish management, public access, scenic areas, and other purposes of the Department. This involves obtaining the rights to the land whether it is in fee title, easement, lease, gift or other category. To carry out the acquisition, the Section is responsible for obtaining appraisals; negotiating with land owners; handling relocation problems; obtaining surveys; and working with legal staff, private interest groups, and local political subdivisions. This includes maintaining files on all land acquisition transactions, whether in process or completed, and preparing progress reports and other reports relative to the land acquisition program.

As of June 30, 1978, rights (fee title, easement, lease, gift, etc.) were acquired in 489 parcels of land totaling 38,552.32 acres at a cost of \$10,030,768.26.

Land exchange involves working with all disciplines of the Department, Regional Administrators, counties, federal government, corporations, and private individuals. Approximately 70 exchange proposals are received per biennium, which are reviewed to determine whether they are in the best interest of the state, and feasible as well as legally possible. Land exchange provides the only real means of adjusting state ownership patterns; consequently, exchange proposals are carefully reviewed. Proposals having merit are reviewed by the Regional Administrator and his staff for recommendation to the Land Exchange Board, which is the final authority on all land exchanges.

During FY 78 and FY 79, 17 land exchanges were completed--involving 1,992.87 acres valued at \$178,001.57.

Records, Leases, & Sales Section

Records

The primary responsibility of this Unit is to provide ownership status and other pertinent data to all who request it, for each parcel of state owned DNR administered land. This land comprises approximately 95 percent of the state owned, state administered land. The records are kept in abstracts, maps, card files and a data processing system, which covers all the foregoing lands, plus tax-forfeited land in all counties which administer significant acreage. The state ownership records contain 5,231,000 acres owned, and 3,488,000 acres which have been sold. Tax forfeited land totals approximately 2,900,000 acres of which 2,855,000 acres are on the data processing file.

The DNR Field Offices, Regions and Areas are provided annually with updated sets of microfiche which list every description of land which is either all or partly state owned DNR administered, and the tax-forfeited land which is state owned, county administered.

Lieu tax payments from Game Lands to the counties are calculated by this Unit. Payments for 1976 and 1977 totaled \$289,723.00. Payments to Chisago and St. Louis counties from special legislation for park land acquisition are also calculated, with \$61,424.00 having been certified for payment during the Biennium.

State Land Leases

The purpose of leasing land is to provide a means for the public to make use of State Lands for private or commercial purposes when by law or by policy the Department is restricted in the sale of the land.

DNR's Bureau of Land is charged with responsibility for the administration of the surface leasing of state lands. (State land is defined as those lands which are under the control of the Commissioner of Natural Resources.)

State lands are leased for various purposes, the most common being for: utility rights-of-way, lakeshore and hunting cabin sites, agricultural purposes, gravel removal and roadways. Before any leases are issued, future development of the land is considered.

As of June 30, 1978 the Bureau of Land was administering a total of 8,085 leases. This is an increase of 2,300 leases from the previous biennium. Revenue from state land leases amounted to almost \$982,000.00. Revenue increased 70 percent from the previous biennium. This increase is due to an expanded lease program, updating lease fees, collecting 50-year fees for utility crossings, and increasing lakeshore fees to more realistic values.

State Land Sales

The purpose of sale of state lands is to provide for disposal of state lands that are considered better suited for private development and are surplus to state needs for conservation purposes.

Trust Fund land sales in FY 78-79 were held in two counties, and totaled 482 acres, plus 9 platted lots. Total income from these trust fund land sales, plus previously existing land sale contracts, was \$116,203.

Consolidated Conservation Area land sales and existing land sale contracts brought in \$244,831 in the Biennium.

Condemnations on state owned Department of Natural Resources administered land brought in \$158,663.

Total income from disposition of land was \$519,697.

Public sentiment at the present time dictates a marked reduction in the sale of "state land." The Department has complied with the wishes of the public and drastically reduced the acreage of land being offered for sale. Neither the attitude of the public, nor that of the Department is expected to change significantly in the next biennium.

Gross revenue for the sale, lease, and granting of easements on state land through the Bureau of Land was \$1,501,430 for the Biennium.

From the revenue received in the first quarter of Fiscal Year 79 it is conservative to state that revenue for FY 80-81 will significantly exceed the FY 78-79 totals.

DNR LAND INTERESTS ACQUIRED

JULY 1, 1976 to JUNE 30, 1978

Public Access Areas	22	61.61	\$ 139,160.00
Fisheries Areas	103	588.37	436,604.00
Forestry Areas	41	4,196.60	1,212,141.67
Wildlife Management Areas	145	19,312.67	3,624,865.05
Parks and Recreation Areas	178	14,393.07	4,617,997.54
Totals	489	38,552.32	\$10,030,768.26

LAND EXCHANGES COMPLETED; JULY 1, 1976 - JUNE 30, 1977

Exchange No.	Name	Class A,B,C	State		County		Private		Federal		Date File Completed
			Acres	Value	Acres	Value	Acres	Value	Acres	Value	
341	Henry J. Teiken, Jr.	A	7	840			10	\$ 850			8-10-76
B52	Seaman Paper Co., & Cass Co.	B			240	\$24,468.60	240	24,936.71			8-9-76
293	Caleb Tentis	A	8.5	406			3.5	418			9-22-76
B56	Boise Cascade & Koochiching	B			10	650.00	10	388.70			9-22-76
316	Hulda Fern	A	160	7,962			160	8,014			12-27-76
326	Donald Landin	A	7	315			7	315			12-27-76
350	Vern Goetzinger	A	2.40	600			2.40	600			1-3-76
B54	Delbert Anderson & Itasca	B			20	4,075.00	36	4,075			2-23-77
335	John & David Lund	A	40	1,196			60	1,200			3-11-77
B57	Howard Flategraff & Cass County	B			80	8,565.25	80	8,676.99			4-8-77
354	Boise Cascade	C	2.05	4,800			3.19	4,800			6-20-77
B55	Topeka Land Co. & Itasca County	B			185	20,941.50	326.30	21,000			6-13-77

Class "A" Land

Total exchanges completed 6
 Total acreage of state land exchanged 224.90
 Total value of state land exchanged \$11,319
 Total acreage of private land exchanged 242.90
 Total value of private land exchanged \$11,397

Class "B" Land

Total exchanges completed 5
 Total acreage of county land exchanged 535.00
 Total value of county land exchanged \$58,700.35
 Total acreage of private land exchanged 692.30
 Total value of private land exchanged \$59,077.40

Class "A&C" Land

Total Exchanges Completed None

Class "C" Land

Total exchanges completed 1
 Total acreage of state land exchanged 2.05
 Total value of state land exchanged \$4,800.00
 Total acreage of private land exchanged 3.19
 Total value of private land exchanged \$4,800.00

State-Federal Land

Total exchanges completed None

LAND EXCHANGES COMPLETED; JULY 1, 1977 - JUNE 30, 1978

Exchange No.	Name	Class A,B,C	State		County		Private		Federal		Date File Completed
			Acres	Value	Acres	Value	Acres	Value	Acres	Value	
B60	Crow Wing Properties & Cass County	B			80	\$7,295.94	80	\$7,351.38			1-13-78
R58	Arthur Tieden & Hubbard County	B			11	1,189.80	20	1,321.80			3-10-78
B62	Oakley Robinson & Aitkin County	B			39.2	4,560.50	40	2,916.40			7-24-78
B64	Gary Bjerke & Clearwater County	B			10	1,403.00	10	1,403.00			7-24-78
B59	John Silta & Itasca County	B			1.11	222.00	1.22	244.00			10-14-77

Class "A" Land

Total exchanges completed

None

Class "B" Land

Total exchanged completed 5
 Total acreage of county land exchanged 141.31
 Total value of county land exchanged \$14,671.24
 Total acreage of private land exchanged 151.22
 Total value of private land exchanged \$13,236.58

Class "A&C" Land

Total exchanges completed

None

Class "C" Land

Total exchanged completed

None

State-Federal Land

Total exchanges completed

None

ENGINEERING

The Bureau of Engineering, comprising a staff of professional engineers, land surveyors and landscape architects supported by architectural and engineering technicians, clerical and stenographic personnel, provides professional service support for DNR programs. These include: feasibility studies on proposed developments; designs, plans, and specifications for a wide variety of natural resource developments; conduct of land and topographic surveys for state lands and lands proposed for acquisition; preparation of property plats and legal descriptions for land acquisition; and providing graphic services for the preparation of maps, signs, charts and displays.

The Bureau achieved the objectives as set forth in the 1976-77 Biennial Report for the period of September 1, 1976 to June 30, 1977. During the current biennium, from July 1, 1977 to October 1, 1978 the Bureau has had 177 projects under construction at a value of more than \$2.8 million. For the remainder of the current biennium the Bureau is projecting to have 140 additional projects under construction, at an estimated value in excess of \$5 million.

In addition to the construction work, the Bureau contemplates providing the requested professional services on more than 400 other projects and programs for the Department during the biennium; for land acquisition surveys, graphic services, feasibility studies, and others. By October 1, 1978 the Bureau had completed 107 land surveys for the DNR and contemplates completing 75 additional by the end of the biennium.

Some of the more significant projects and programs that the Bureau has been involved in this biennium are as follows:

*Completion of the development of facilities at the St. Croix Wild Rivers State Park at a cost in excess of \$1.5 million. The park was opened to the public on October 1, 1978.

*Development of accessibility facilities for the handicapped in State Parks. More than \$750,000 in state and federal funds was utilized to improve handicapped accessibility in 40 state parks. Included in the program was improved accessibility to sanitation facilities, development of new trails, handicapped-useable picnic tables and elimination of architectural barriers.

*Continued progress was effected in conducting land surveys for the acquisition of lands under the Resource 2000 program.

*Provided the mapping and graphics for the printing of about 60 park maps, 9 forest maps and 7 corridor trail maps. These are published by the DNR for use by the public.

The Bureau of Engineering is continuing to improve its professional services to the Department; and thus to the citizens of the state.

#

FINANCIAL MANAGEMENT

The Bureau of Financial Management provides the following support services to the operations and management of the Department: general accounting, accounts payable and receivable, auditing, budget control and preparation, complement control, financial advice and consultation, payroll, revenue forecasting, reports distribution and other services.

Accomplishments and Performance Indicators

	<u>F.Y. 1978</u>	<u>F.Y. 1979</u>
Annual Spending Plans (coordinate preparation - APID's)	170	170
Cost Centers Analyzed (AID's)	930	1,000
Invoices Processed (paid)	19,700	20,500
Payroll (employees per pay period)	2,500	2,500
Receipts (all sources)	\$ 30,913,302	\$ 34,478,148
Direct Appropriations		
General Operations and Management	\$ 44,419,708	\$ 45,786,449
Other/Supplemental	5,045,000 (1)	470,000
LCMR	9,458,059 (1)	1,828,809 (1)
Resource 2000 Land Acquisition	28,865,148 (2)	-
Capital Budget	3,300,840 (3)	-
<u>Total</u>	<u>\$ 91,088,755</u>	<u>\$ 48,085,258</u>

(1) Biennial Appropriations

(2) Includes \$3,565,148 balance forward from 1975 session.

(3) Includes \$2,579,950 appropriation to Commissioner of Administration for DNR projects.

Authorized Complement
Maintained (total):

General	853	847 (3)
Game and Fish	484	478 (3)
Special Revenue	18	18
Gift and Deposits	2	2
Federal	42	40
<u>Total</u>	<u>1,399</u>	<u>1,385</u>

(3) Reflects 2% complement reduction (27 positions) in compliance with the Governor's Task Force on Waste and Mismanagement.

Federal Indirect Cost Rate None 31.3% (4)

(4) The DNR Bureau of Financial Management successfully negotiated with the U.S. Department of the Interior, Office of Audit and Investigation, for an approved indirect cost rate of 31.3% for all divisions within the Department. This rate is effective for the period from July 1, 1978 through June 30, 1979.

PERSONNEL

The decentralization of certain Bureaus' functional responsibilities to the Regions was accomplished to the extent possible--as projected during the 1976-77 Biennium. This delegation of authority to Regional Business Management has improved the personnel services to the Department and its employees as anticipated, particularly in the timeliness of the flow of personnel transactions. Efforts toward further refinement of the Department's system of processing personnel transactions will continue, with particular emphasis on greater utilization of computer procedures.

A significant portion of the Bureau's staff time continues to be devoted to labor relations matters. The Bureau was instrumental in conducting negotiations with the Conservation Officer's Association for a new contract covering the terms and conditions of employment for its members for the two-year period beginning July 1, 1977. Negotiations for a supplemental contract with Council No. 6 in conjunction with the union's master contract with the State were conducted during this same period. The Personnel Director represented the Department on the State Negotiating Team during the new master contract negotiations. Extensive training for Department managers and supervisors on administering the provisions of the new contracts was conducted prior to their effective date of July 1, 1977. In addition, further training in corrective discipline and the handling of grievances was held for managers and supervisors, during the first year of the new contract.

Negotiations currently are under way for the master and supplemental agreement with Council No. 6, as well as the agreement with the Conservation Officer's Association for the two-year period beginning July 1, 1979. Once the contracts have been ratified, training on administering the new agreements will be conducted for Department managers and supervisors; probably during the months of May and June, 1979.

The DNR Training Section, which was in its infancy at the time of the last Biennial Report, has shown impressive growth and now is a viable activity influencing every employee of the Department. Prior to Fiscal Year 1978, Training Orders were developed and approved covering Training Plans, Policies, and Procedures. These orders were promulgated and implemented via Training Board representatives covering each Discipline within each Region.

During Fiscal Year 1978 the Training Board proved unquestionably their value in a wide variety of ways, ranging from developing and conducting orientation sessions to identification of training required for advancement. Administrative changes also improved the effectiveness of training during this period. Through the development of the DNR Training Center at William Mitchell College of Law, access is assured to cost efficient training space for any type session. This was made possible by budgetary adjustment, which made leasing of space possible while simultaneously providing funding for courses. These funds allowed DNR Training to provide more than 6,000 hours of Supervisory training and nearly 3,000 hours of clerical training, beyond that offered by the Department of Personnel. An additional 32,000-plus hours of technical training were provided the Disciplines during Fiscal Year 1978.

The thrust of DNR Training will continue in four distinct directions: Management/supervisory Training, Technical Training, Efficiency Training and Career Development.

AFFIRMATIVE ACTION

The Department's Affirmative Action Program showed dramatic and positive results during the Biennium.

Prior to the appointment of an Affirmative Action Officer (January 1977) a fourth quarter report in 1976 showed DNR ranking 21st in affirmative action compliance among 22 major State departments and agencies. At that time, DNR had 18 minorities, or 1.5 percent of the Department's off-season workforce of 1,205; and 178 females, or 14.7 percent of the workforce.

By the first and second quarters of 1978 the affirmative action program showed significant proportionate gains in minority and female employees; peaking at 197 minorities, or 6.2 percent of the total workforce; and 949 females, or 30 percent of the DNR workforce.

At the beginning of 1977 a programmatic approach to affirmative action was established, based on management by objective and resulting in the sharing of the responsibilities of affirmative action compliance with unit managers and supervisors. For the first time, unit managers were rated on their affirmative action compliance, by the Commissioner of Natural Resources, greatly accelerating individualized management and supervisory interest in affirmative action.

New affirmative action policies and procedures were developed by the Affirmative Action Director in early 1978, approved by the Commissioner and engineered by the Special Assistant to the Commissioner, who in January 1978 assumed direct supervision responsibility for the Affirmative Action Director. The affirmative action functions were transferred from the Bureau of Personnel to Administration, with more direct authority from the Commissioner's Office.

The new affirmative action policies and procedures established rigid checks and balances in compliance; with appropriate rewards and penalties. All DNR unit managers were required to prepare and submit for approval a annual affirmative action plan. New interviewing procedures and guidelines were established. Accelerated emphasis was placed on pre-service, on-the-job training, internships and in-service training programs. Stronger emphasis was placed on outstate recruitment, covering major colleges and universities with large minority and female enrollments. DNR managers and supervisors assumed more responsibility for minority and female recruitment. Activities of the Affirmative Action Committee were increased, with a redefinition of its roles and responsibilities. Affirmative action became a major criteria for promotions and achievement awards for all DNR managers and supervisors. Also, greater emphasis was placed on participation in career clinics and job fairs, to increase minority and female youths' interest in natural resources careers; and recruitment of minorities and female youth in the Department's Youth Conservation Corps (YCC) program was accelerated to provide early exposure to natural resource functions.

These efforts resulted in the qualitative improvement of females and minority status employees as reflected by categorical increases in job classifications. The affirmative action report for the third quarter of 1978 showed significant increases in the percentages of females and minorities employed in management, supervisory, professional, technical, office, operative, labor and service positions; and in training status. Totals for the third quarter of 1978 showed 641 females, or 24.7 percent of the Department total workforce of 2,229; and 98, or 3.8 percent minorities in the workforce.

Further emphasis and acceleration of affirmative action is reflected in the development by the Affirmative Action Director and Affirmative Action Committee, and approved by the Equal Opportunity Division of the State Department of Personnel, of a new Department-wide comprehensive affirmative action plan concurrent with the statewide affirmative action plan required by Minnesota Statutes 1978, Chapter 708.

Original goals for DNR's affirmative action program--four percent by job classification for minorities in the Metro Area, two percent by job classification in outstate, 5.6 percent for females in management, 22 percent supervisory and 29 percent professional--were not reached as of October 1978. These will be pursued during the remainder of FY 79.

Projected plans include human relations training for all staff employees to improve the race and sex working climate, and interviewing training for all persons involved in this activity on a regular basis.

COMMUNITY LIAISON

During the Biennium, the Department's Community Liaison Officer has worked with the Red Lake Indian Reservation; the Minnesota Chippewa Tribe, comprised of the Mille Lacs, White Earth, Leech Lake, Fond du Lac, Grand Portage, and Bois Forte (Nett Lake) Reservations; and the Upper and Lower Sioux communities.

The monitoring of the Leech Lake-DNR Agreement continues, which includes the upgrading and maintenance of enforcement equipment and the continuing training and upgrading of enforcement officers.

A new project, a netting survey of walleye of the Leech Lake area, is under way; as well as the development of cooperative forestry and wildlife management plans with the DNR.

The program to assist in providing identification cards for tribal members is being extended to all reservations, including the Sioux communities, and plans are in progress to provide definitive markings for reservation areas.

Other projects in the planning stages include a standardized marking and tagging system of all animals trapped on reservation lands, and the cross-deputization by the State of all certified Indian Conservation Officers.

FIELD SERVICES

The Bureau of Field Services provides support for all department personnel in the areas of equipment and supply purchase; equipment fabrication, maintenance, repair and disposal; building maintenance and repair, coordination of new buildings and building disposal; acquisition of Federal Excess and Surplus Property and coordination of the Safety Program.

Field Services provides expertise and purchases products for 1,434 personnel, located statewide. The activity places priority on providing expertise in the numerous areas of service in order to minimize the amount of time resource managers spend on support.

Activity objectives include:

- *Purchase, maintain, repair and dispose of equipment on a continuing basis. Reduce number of passenger carrying vehicles.
- *Upgrade equipment by routing replacement of first action and emergency type units down through the organization and thereby disposing of the poorest.
- *Acquire Federal Excess and State Surplus property for eligible programs.
- *Provide service in the areas of building construction, maintenance and disposal.
- *Reduce number of buildings.
- *Coordinate the Department Safety Program.
- *Modernize the Forestry short-wave radio system to tie in the Department, in the interest of mutual aid between disciplines for forest fire suppression and law enforcement activities.
- *Improve consumable inventory control.

Field Services accomplishments during the Biennium included:

Passenger carrying vehicles reduced by 30 in FY 79; self-propelled equipment upgraded (by relocating replacements within the DNR) reduced by 45 in FY 78; 40 in FY 79, with 60 projected for remainder for FY 79.

Reduction of buildings: Residences, 4 in FY 78; 3 in FY 79; 11 projected for remainder of FY 79. Offices, warehouses, garages: 15 in FY 78; 20 in FY 79; 107 projected for remainder of FY 79.

Buildings acquired incidental to purchase of land: 130 in FY 78; 69 in FY 79 with 107 projected for remainder of FY 79.

Other significant accomplishments during the Biennium:

- *Evaluated and rated all self-propelled vehicles annually to determine condition, mileage and need.
- *Conducted five equipment auction sales to dispose of used and surplus.
- *Acquired Federal Excess and State Surplus property for eligible programs, including rural fire protection.

- *Evaluated all Department-owned buildings and developed print out to provide data relating to type, location, size, occupants, use and need.
- *Conducted Task Force Study on Department buildings for recommendations on need, consolidation and/or disposal possibilities.
- *Maintained six Regional Safety Committees.
- *Purchased 316 short-wave radios as per legislative intent to implement part of Forestry needs in Region I (Bemidji), Region II (Grand Rapids) and Region III (Brainerd).
- *Improved perpetual inventory card system and disposed of consumable surplus items.

LICENSING

DNR's License Center is located at 625 N. Robert St., St. Paul. The Center's counter service averages about 200 customers per day; and as high as 500 during peak periods. Game, Fish, Boat licenses and Snowmobile registrations, park stickers, duck stamps and Leech Lake stamps are sold at the counter. Hours are 8 a.m. to 5 p.m. and a full staff is maintained during the lunch hour to provide better service to the public.

The addition of 10 new Deputy Registrars, who act as agents of DNR in the registration of boats and snowmobiles, brings the total to 147 throughout the state. When applications are made through Deputy Registrars, the individual is given a 30-day permit to operate the boat or snowmobile until the License Center processes the applications. Reports are submitted daily to the Center and it requires about 10 days to process and mail back registrations and licenses to owners along with a copy of the current laws and regulations. Approximately 200,000 boat licenses and 80,000 snowmobile registrations are processed annually.

The License Center distributes all fish and wildlife licenses for the DNR. They are shipped to the 87 county auditors, then distributed by them to the 3,400 agents throughout the state. Improvement has continued on computer programs, insuring more rapid service to the public and accurate audit trails as required by public examiners.

The Center produces approximately \$18 million in annual revenue: \$14 million from fish and wildlife licenses; \$4 million from snowmobile registrations and boat licenses. This is an increase of nearly \$7 million in the past two years.

At the present time, Minnesota ranks first in the nation in snowmobile registration, third in boat licensing, and seventh in the number of game and fish licenses issued. It ranks first in the number of non-resident licensed anglers.

MANAGEMENT INFORMATION SYSTEMS

In addition to monitoring, maintaining and updating more than 50 continuing computer applications during FY 78 and FY 79, the Bureau of Management Information Systems assisted in preparing a long-range computer plan for the Department. The Bureau monitored the computerized portion

for the selection of moose, turkey and antlerless permits; representing a combined total of some 200,000 entries. The Bureau also developed a new system for the LAWCON (Land and Water Conservation) Project Accounting, to be used for federal reimbursement.

During the remainder of FY 79, the Bureau anticipates (in addition to the 50 as of October 1, 1979) four additional computer applications to monitor, maintain and update. One of these will involve the Fish and Wildlife Accounting System.

The Bureau also anticipates researching new methods of handling the selection process of moose, antlerless deer and wild turkey permits to more efficiently handle the increased volume of entries. The anticipated planning will be within the present budget restraints.

RECORDS AND OFFICE SERVICES

Office Services was assigned the project of the Governor's Forms Reduction Program in April 1977. By June 3, 1977, Phase I was accomplished; 1,736 forms were collected from all DNR disciplines and sent to the Forms Control Unit, together with data input sheets for 1,573 forms. A total of 163 forms were eliminated immediately and work began on the 1,573 forms.

Mail deliveries were increased from two to three daily to provide more efficient service to the Third Floor-Centennial. A bulk mail pickup system was developed from Central Office to Regions and Regions to St. Paul, to effect a cost savings in postage.

There were 1,956 additions to the Department's non-expendable inventory, 936 deletions and 1,910 internal transfers.

The Section began a biennial mail survey cost analysis in FY 78 to assist Department disciplines in postal budgeting. The Section operated a state vehicle at minimum cost to the State by objectively reviewing daily usage.

Phases II and III of the Governor's Forms Reduction Program were completed in FY 78 with 184 additional forms deleted.

A total of 2,133 items were added to the Department's non-expendable inventory, 946 deleted, and 1,393 internal transfers made.

Operation I.D. (the marking of DNR sensitive equipment) was completed in FY 78. All sensitive equipment properly marked can now be specifically identified to DNR should it be necessary.

The total number of items on the non-expendable inventory as of October 1, 1978 was 27,021 and included 328 additions. A total of 317 items were transferred internally and 264 deleted.

The mail pickup and delivery to the Space Center Building was increased from one to three per day. The mail survey analysis has been continued in FY 79.

A survey was made on incoming telephone calls at the DNR Centennial Building Reception Desk. An average of 330 calls are received per day, and as many as 449 calls were answered in one day by one person.

It is anticipated that the mail survey analysis will be completed by June 30, 1979. The Department will then know what amounts of postage are used by each Division and Bureau for the 1978-1979 biennium. Results of this survey will be used for budgeting purposes.

The Records and Office Services Section anticipates monitoring of all new forms initiated by DNR and continuing the forms reduction program by combining forms and working with the Forms Control Unit of the Department of Administration.

Monitoring of copy machine usage will continue, and instructions and training on the use of the two Xerox machines in the Centennial Building will be intensified in order to comply with the Governor's request to reduce the number of copies made, by 14 percent.

Office Services will continue to provide the essential services and assistance to the various units of DNR, and provide informational assistance to the public.

#

