ANNUAL PERFORMANCE REPORT

1994

MINNESOTA DEPARTMENT OF NATURAL RESOURCES

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Department of Natural Resources

AGENCY SUMMARY

AGENCY: Natural Resources, Department of

MISSION:

The mission of the Minnesota Department of Natural Resources is to work with the people of Minnesota to manage the state's diverse natural resources for a sustainable quality of life.

Table 1:

Program	Estimated Expenditures[1] ($ in Thousands)	Percent of Total	FTE Staff Positions	Percent of Total
Mineral Resources Management	$5,661	.03	70.2	.03
Water Resources Management	$8,601	.05	129.6	.05
Forest Management	$39,383	.21	514.3	.20
Parks and Recreation Management	$26,024	.14	423.7	.17
Trails and Waterways Management	$12,169	.06	114.2	.04
Fish and Wildlife Management	$45,627	.24	660.2	.26
Enforcement of Natural Resource Laws &	$15,042	.08	202.1	.08
Operations Support	$35,980	.19	446.8	.17
Totals	$188,487	100.0	2,561.1	100.0

[1]Note: excludes internal revolving accounts.

ORGANIZATION:

The Department of Natural Resources is organized into seven (7) programmatic areas: Mineral Resources Management, Water Resources Management, Forest Management, Parks and Recreation Management, Trails and Waterways Management, Fish and Wildlife Management, and Enforcement of Natural Resource Laws and Rules. These seven programs are supported by nine administrative bureaus under Operations Support.

DNR is the major land management state agency, administering 94% of all state-owned land administered by state agencies. This includes ownership of 12 million acres i mineral rights and 5.3 million acres of land for parks, wildlife areas, public water accesses, scientific and natural areas, state trails, and state forests. These lands provide wildlife habitat and recreational opportunities and play an important role in supporting resource industries. DNR also administers state-owned navigable waters and submerged land and is charged with maintaining surface water and ground water supplies that meet long-term requirements for basic use, environmental protection, and economic production.

Activities regulated by the department include hunting, trapping, and fishing; boating; snowmobiling; wild rice gathering; mineral exploration, mining, and reclamation; dredging, filling, and draining protected waters and wetlands; constructing and maintaining dams; appropriating and using surface and ground waters; establishing lake levels; developing shorelands, floodplains, and the shores of wild, scenic, and recreational rivers; permitting and licensing private game farms, fish hatcheries, roadside zoo operations, and open burning.

In addition the agency creates safe opportunities to utilize resources to provide economic return. It provides forest fire protection to billions of dollars' worth of private and public timber, as well as private property, in forested areas encompassing 45 million acres. It develops and disseminates information on recreational travel and educational materials on natural resource subjects. It provides assistance to local governments, organizations, and individuals on natural resource matters such as forest management, wildlife habitat improvement, and trail development.

The programs of the DNR affect all Minnesota citizens, present and future, as well as large numbers of travelers from other states and nations. Department operations interact directly and indirectly with local and regional governments, the federal government, other state agencies, members of the state's business community, and millions of private citizens.

WAYS TO IMPROVE PROGRAM OUTCOMES:

The DNR has adopted an ecosystem-based framework for natural resource management. This methodology is a collaborative process of managing whole interconnected systems of natural resources. The approach requires that DNR work in interdisciplinary teams with strong public participation to develop and implement sustainability goals for entire ecological systems. This is different from the previous models of "competing multiple uses," where programs work in isolation to improve individual resources.

Sustainability is the expected outcome of all resource management activities. Sustainability requires DNR to protect and restore natural systems so that their resource can be used indefinitely by present and future generations. Sustainability requires DNR to reconcile human needs and demands with the capacity of ecosystems to meet those demand.

(Directions for Natural Resources, Minnesota DNR Strategic Plan, April, 1994.)

As the DNR moves further into ecosystems-based resource management, statutory and regulatory requirements that advance "competing multiple uses" will be recommended for modification as appropriate. An example would be identifying incentives and disincentives for private land management in support of sustainable resource goals.

The DNR will also examine how the Annual Performance Report can be used to illustrate the interdisciplinary goals of the department vs. portraying programmatic goals and objectives in isolation of one another.

Toward this end, the department is participating in the Environmental Indicators Task Force, appointed by the Environmental Quality Board in 1993. With support of the Legislative Commission on Minnesota Resources the Task Force has developed an initiative to "develop environmental [illegible]s that monitor the health of Minnesota's resources, its ecosystems, and its

environment." (MN Environmental Indicators Task Force Report, June, 1994.) Products from this initiative will be completed in June, 1997. The DNR will move toward using this type of indicator to guide our performance in ecosystems-based resource management for sustainability.

The DNR will continue to pursue statutory and regulatory changes that will improve its efficiency and flexibility to respond to changing needs, such as increased delegation authority for human resource and administrative activities and budget flexibility to enhance interdisciplinary team work in resource management.

SUMMARY

AGENCY: **Natural Resources, Department of**
PROGRAM: **01 - Mineral Resources Management**

EXPENDITURES AND STAFFING (F.Y. 1994)

	($ in Thousands)
Total Expenditures:	$ **5,661**
From State Funds	$ 5,618
From Federal Funds	$ 43
Number of FTE Staff:	70.2

PROGRAM GOALS:

- As fiduciary trust fund manager, to lease iron ore, taconite, non-ferrous metallic minerals, and industrial minerals assets of the state with the approval of the executive council (Minn. St. Ch. 84.027, subd. 2; 92.50; 93.14; 93.16; 93.19; 93.192; 93.25; 93.335; 93.283; 93.285; and 93.55 and Minn. Const. Art. XI, Secs. 8 and 9).

- In recognition of the effects of mining on the environment, to provide for the reclamation of certain lands hereafter subjected to the mining (Minn. St. Ch. 93.44-.51).

- To provide for the diversification of the state's mineral economy through long-term support of mineral exploration, evaluation, development, production, and commercialization and to investigate environmental issues associated with mineral development (Minn. St. Ch. 93.001, Laws of Minnesota 1993, Ch. 172 sect. 5, subd. 2 and Minn. St. Ch. 93.002).

- To improve continuously the administration of legislative mandates and services delivered to clients and to the public. (No specific statutory authorization.)

DESCRIPTION OF SERVICES:

The Division of Minerals' Mineral Resources Management Program exists to manage the state's mineral assets and to ensure all stages of mining, from initial exploration through development and operation to eventual mine closure, generate environmentally acceptable outcomes and equitable income for the state and its citizens.

The assets managed include:

- over 12 million acres of state-owned school trust and tax-forfeited mineral rights (including 18% of the Mesabi Iron Range mineral rights);
- surface and mineral rights on 8 million acres of state-owned land for peat, industrial minerals and construction materials.

The Division of Minerals is the trust agent for the Permanent School Fund and the University Trust Fund and is responsible for regulating environmentally sound mineral development to provide equitable rental and royalty income to the trust funds,

the general revenue fund, and local taxing districts. Through the Mineland Reclamation Act, the program has statewide authority to regulate mineland reclamation, metallic mineral development, and peat mining to insure that minelands are reclaimed to provide stable and hazard-free areas suitable for future use. The program also has statewide authority to regulate mineral exploration through the Exploratory Boring Law.

The division's Iron Ore Cooperative Research and Mineral Diversification Program support applied research in cooperation with the minerals industry and the University of Minnesota to identify and develop new technologies and value-added processes that will assist the industry in maintaining its global competitiveness. The division's Cooperative Environmental Research Program identifies and investigates environmental issues associated with mineral development. The division also identifies new resources and areas of high mineral potential to attract new industry that will provide additional employment opportunities in the state and further diversify the state's rural economy.

These responsibilities contribute directly to the growth of prosperity in rural Minnesota through the creation of high-wage mining jobs, and accompanying ancillary services, and to the long-term environmental enhancement of state lands through reclamation of areas impacted by mining.

PROGRAM DRIVERS:

- **A Threatened Taconite Industry.** Reduced demand for Minnesota taconite pellets resulting from imported pellets, steel produced by minimills utilizing scrap, and the restructuring of the global economy is threatening the vitality of the state's taconite industry. The loss of about 10,000 mining jobs in the last decade and the recent idling of National Steel Pellet Company, illustrate increasing pressure on the industry to cut costs and increase productivity in order to survive in an increasingly competitive global marketplace. Because it is in the state's best interest to assist this industry, many of the division's programs are focused on applied research directed at increasing plant efficiency and reducing production costs.

- **Reduced Non-ferrous Metallic Exploration in North America.** A depressed North American metals industry is the result of decisions of large multinational metals companies to focus exploration efforts in Latin America and developing countries elsewhere. The result has been a dramatic reduction of exploration for metals in Minnesota. Until this trend is reversed, the likelihood of a discovery in Minnesota -- and its accompanying development -- will be significantly reduced. The challenge for Minnesota is to once again attract the exploration industry to the state -- as occurred in the late nineteen-eighties. Given Minnesota's excellent geological potential for base and precious metals and for industrial minerals, the division is continuing to focus on innovative strategies to attract exploration dollars. Strategies include streamlining leasing methods and constant efforts to collect, organize, and distribute mineral potential information utilizing state-of-the-art technology.

- **Increasing Environmental Awareness.** In order to operate in Minnesota, the mining industry must assure environmentally sound operations and must comply with increasingly stringent environmental regulations mandated by state and federal law. Although the state's mining industry has a sound environmental record, the division must continue to support a strong environmental research program to fully address problems as they arise. The division will continue to focus research on such topics as mineland reclamation and characterization and prediction of mine wastes to maintain environmentally acceptable outcomes from mining.

- **Industrial Minerals.** In Minnesota, industrial mining is regulated by local units of government, most often through county, township, or municipal conditional land use permits. As demand for industrial minerals increases, local units of government are becoming more involved in developing environmentally sound mining permits and meaningful reclamation of the land for subsequent uses. Local governments are increasingly seeking assistance from the division's resource and reclamation professionals. Currently, the division is unable to meet the demand for technical assistance; demand is expected to continue as the need for construction aggregate remains high and the state's demographic patterns continue to evolve.

AGENCY: Natural Resources, Department of
PROGRAM: Mineral Resources Management

OBJECTIVE, MEASURE

Objective 1: Negotiate mineral leases with exploration companies and the mining industry to provide fair and equitable rental and royalty revenue to the state's trust funds.

Measure (1): Revenue in thousands of dollars (Outcome).

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Rental & royalty	$6,094.4	$6,404.1	$5,117.0 e	$4,861.0 e	$5,000.0 e	$5,000.0 e

DEFINITION, RATIONALE, DATA SOURCE:

Revenue consists of rental and royalty income from state iron ore and taconite mining leases and state peat leases. Revenue also includes rental payments from non-ferrous metallic minerals leases, all of which are in the exploration stage. The rentals are paid to maintain the leases in effect, and the royalties are paid upon removal of ore and peat from the leased lands. See Figure 1.

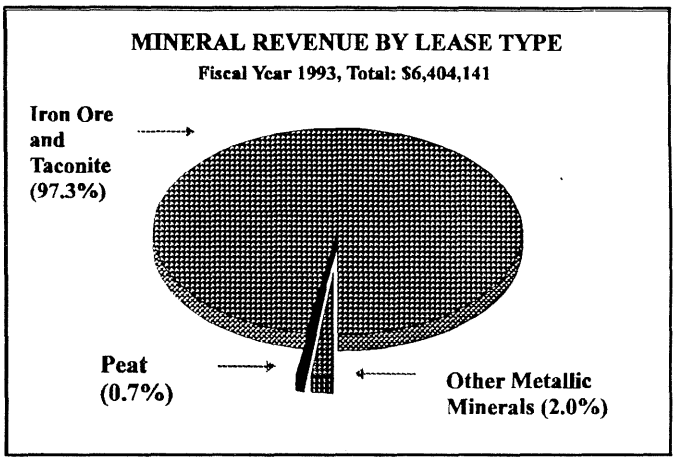

Figure 1. Mineral Revenue by Lease Type

The Department of Natural Resources has authority to lease the mineral rights for state trust fund lands, tax forfeited lands, consolidated conservation lands, other state acquired lands, and forfeited and nonregistered severed mineral interests (Minnesota Statutes ch. 93). These lands total approximately 12 million acres (24% of the land area of the state). The department is responsible for about 94% of the mineral rights owned by the state.

To determine "fair and equitable" royalty rates for iron ore and taconite leases, the department compares its royalty rates with those in the marketplace, assuming the efficiency (by implication fairness) of that market. As leases are renegotiated with taconite companies (many fifty-year leases are currently expiring), the department staff analyzes royalty rates received by private fee owners (non-public minerals rights owners) in much the same manner as the real estate industry uses analyses of comparable sales to determine the value of residential property. The outcome is negotiated royalty rates for state-owned iron ore and taconite are comparable with those received by the private sector. Another measure of what is fair and equitable in regard to taconite leases is to examine the level of production on state-owned lands on the Mesabi Iron Range against the production on the entire Mesabi Iron Range. For the last four calendar years, 1990 through 1993, approximately 18% of the total production has been on state-owned lands (state mineral ownership on the Mesabi Iron Range is about 18%).

To determine fair and equitable royalty rates for non-ferrous mineral leases, the department also uses the marketplace as a measure. Leases to explore, mine, and remove metallic minerals owned by the state are issued only upon public lease sale in which the lease goes to the highest bidder, provided that bidder is qualified to hold the lease.

Revenue is a direct measure of income derived from leasing of state lands. Revenue from school, swampland, and internal improvement trust lands is credited to the permanent school fund, which was established by the state constitution. Revenue from university trust land is credited to the permanent university fund, which was established by the Territorial Act and recognized by the state constitution. The principals of these funds are perpetual and inviolate forever. Net interest and dividends from the permanent school fund are distributed to school districts throughout the state, and net interest and dividends from the permanent university fund are distributed to the university for endowed mineral research, endowed scholar-

ships, and endowed chairs.

Eighty percent of the revenue from leasing of tax forfeited lands and tax forfeited severed mineral interests are returned to the counties in which the leased lands and mineral rights lie, and twenty percent is deposited in the state's general fund. The eighty percent is distributed based on the following formula: 3/9 to the county, 2/9 to the town or city, and 4/9 to the school district. Fifty percent of the revenue from consolidated conservation area lands is distributed to the counties in which the leased lands and minerals lie, and fifty percent is credited to the general fund of the state. For other acquired lands, the specific distribution will vary by land type. Please see Figure 2 for the revenue distribution by fund for the review period. Note: Figure 2 does not include any revenue deposited into the taconite iron ore special advance royalty account. This revenue cannot be distributed by land class until mining occurs.

Records maintained by the Bureau of Financial Management, Department of Natural Resources.

DISCUSSION OF PAST PERFORMANCE:

Although rental and royalty rates have varied widely during the mining history of Minnesota, over 80% of the principal of the permanent school fund, valued at $417 million in May, 1994, is from revenues from state mineral leases and from certain previously dedicated mining taxes. (The Department of Natural Resources does not receive any operations or management costs from the Permanent School Fund or Permanent University Fund for the administration of these mineral rights.)

PLAN TO ACHIEVE TARGETS:

N/A.

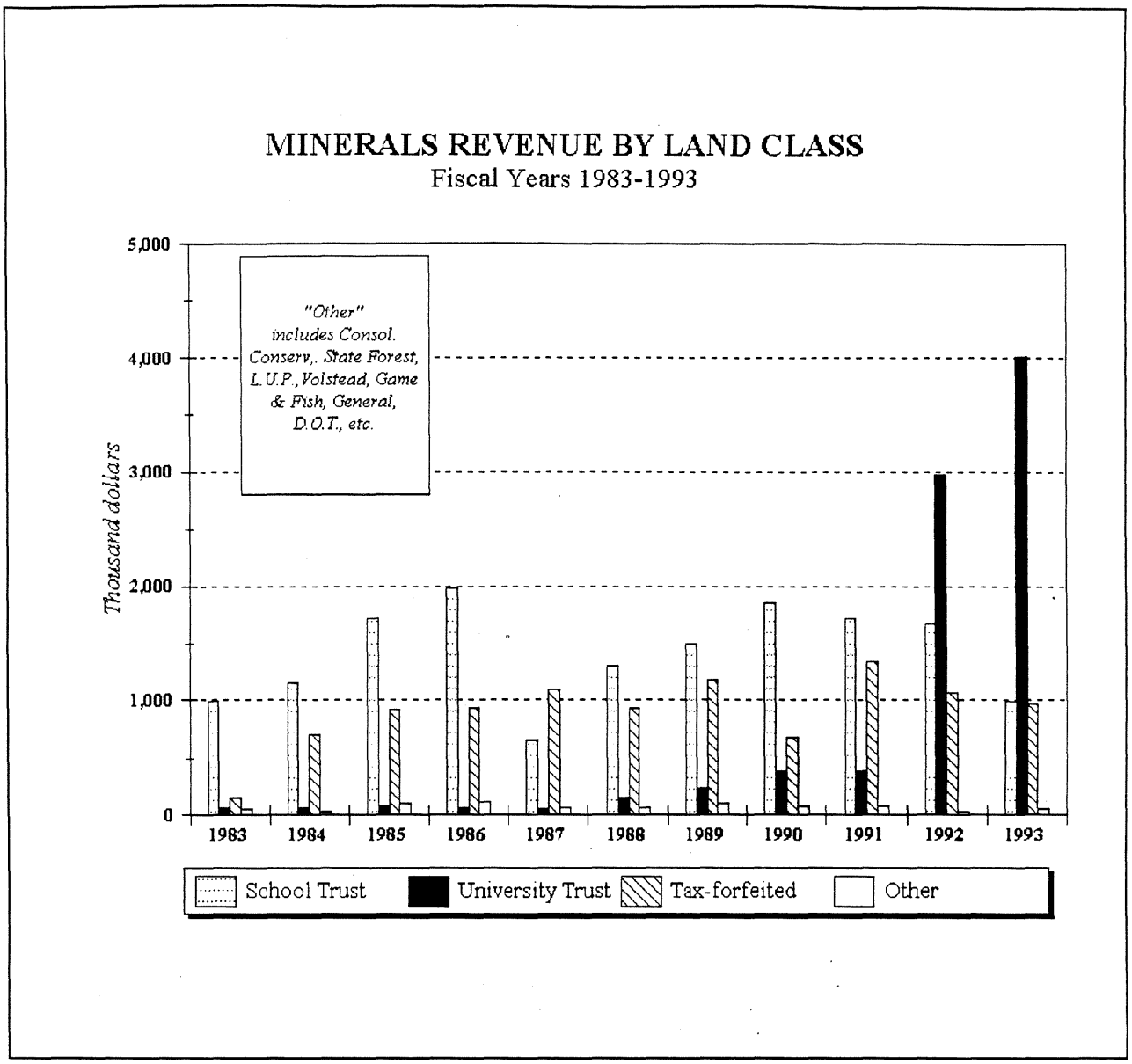

Figure 2. Minerals Revenue by Land Class

OTHER FACTORS AFFECTING PERFORMANCE:

The world economy and the demand for steel directly impact the demand for the state's iron ore and taconite (i.e., taconite pellets). Taconite pellets produced from state-owned assets must compete in price and quality with iron ore produced elsewhere in the world and by other parties in Minnesota and in the U.S. The revenue the state receives from mining state-owned lands also varies according to the specific mining plans for each company -- as the companies respond to the demand for pellets -- and the economic stability of individual mining companies. The cost of producing pellets is also affected by the costs of labor, power, transportation, and the taconite resources that each mining company incurs.

Revenue streams from the non-ferrous metallic industry are dependent on exploration or the development of a commercial deposit of metallic minerals and the determination that it could be mined in an environmentally sound manner. The metal industry in North America is currently depressed; therefore, any immediate, dramatic increase in non-ferrous metallic revenue is unlikely. State-owned peat assets also compete in quality and price with peat owned by other parties in Minnesota and elsewhere in the U.S.

Objective 2: Manage mineland reclamation and reclamation research.

Measure (1): Reclamation parameters.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Acres available for seed	478	464	500e	600e	600e	600e
Acres seeded	478	464	500e	n/a	n/a	n/a
Acres available for temporary seed	461	610	800e	800e	800e	800e
Acres temporary seeded	461	610	800e	n/a	n/a	n/a
Acrs reclaimed in 10 yr	363	279	220e	322e	436e	537e
Acrs mtg. 10yr standard	322	279	220e	n/a	n/a	n/a
Permits applied for	0	0	1	n/a	n/a	n/a
Permits granted	0	0	1	n/a	n/a	n/a

Note: Data received in a calendar year basis. Acres seeded or reclaimed obtained by averaging appropriate two calendar years to obtain fiscal year estimate.

DEFINITION, RATIONALE, DATA SOURCE:

The Mineland Reclamation Program pertains only to lands disturbed by iron ore, taconite, non-ferrous and peat mining after 1980; therefore, the measures listed above apply only to current mining operations and individual mining plans. The measures are tracked through the division's geographic information system. The actual acres listed are determined by map and photo interpretation and field inspections using global positioning systems.

The division's Mineland Reclamation Program issues permits to mine and permit modifications to mining companies and assures that reclamation standards are met through an on-going compliance program. The reclamation program also conducts mineland research on topics such as revegetation of mine tailings, water quality mitigation, mine waste characterization, and mine waste stabilization to control erosion and provide subsequent land uses. Incorporation of research results to regulatory program is important to the effective mitigation of impacts from mining. Field studies do not provide immediate results as four to five years data is needed to draw reasonable conclusions.

Mineland Reclamation Program, Division of Minerals, Minnesota Department of Natural Resources.

DISCUSSION OF PAST PERFORMANCE:

Unanticipated changes in mining plans can greatly affect amounts of lands scheduled for disturbance and reclamation. These unanticipated changes result from changing market conditions, ore grades, and operating costs. Cooperative funding from other regulatory sources and industry is not always available and can result in delays in study implementation.

PLAN TO ACHIEVE TARGETS:

N/A.

OTHER FACTORS AFFECTING PERFORMANCE:

In some cases, the acquisition of matching funds from non-state sources.

Objective 3: Maintain a strong and viable mining industry.

Measure (1): Mineral leasing and mineral lease management activity in acres (Outputs).

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Acres Leased						
Active taconite/ iron ore leases	2,600.00	2,480.85	2,480.85	2,480.00 e	2,500.00 e	2,500.00 e
Inactive taconite/ iron ore leases	6,443.04	6,892.25	7,052.25	7,052.00 e	7,000.00 e	7,000.00 e
Active peat leases	2,500.11	2,540.11	2,540.11	2,700.00 e	2,800.00 e	2,900.00 e
Industrial minerals leases	--	--	--	500.00 e	1,000.00 e	1,000.00 e
Metallic minerals leases (exploration)	53,856.00	66,886.79	34,199.23	25,000.00 e	50,000.00 e	50,000.00 e
Total mineral Lease acreage	65,400.00	78,800.00	46,272.44	37,732.00 e	63,300.00 e	63,400.00 e

DEFINITION, RATIONALE, DATA SOURCE:

The number of acres under lease includes the acreage of new mineral leases and acreage of amendments to existing lease agreements. Because the number of acres leased changes during the year, the mid-year date of January 2 was selected as the reporting date.

The acreage of state leases in effect is a broad measure of the vitality of the minerals industry because of the state's significant land-ownership position. The measure is one of the only measures in the public domain that reflects the extent of mineral industry activity in the state even though the majority of the state's ownership occurs in northern Minnesota.

Mineral Leasing & Mineral Rights Section, Division of Minerals, Department of Natural Resources.

DISCUSSION OF PAST PERFORMANCE:

The recent decrease in metallic exploration, indicated by the significant drop in metallic minerals lease acreage between F.Y. 1993 and F.Y. 1994, is a reflection of the depressed state of the metals industry in North America. Four years prior to the reporting period, the acreage of metallic minerals leases was about eight-fold (199,000 acres) the current total. As the general economy improves, the division expects to see a modest upturn in exploration activity in the state.

PLAN TO ACHIEVE TARGETS:

A focus of the division is to identify area of high non-ferrous metallic mineral potential to attract new industry to explore in the state. As part of this effort, the division is exploring innovative, state-of-the-art methods of publishing and distributing mineral potential data for exploration companies worldwide and is investigating administrative changes to the non-ferrous metallic minerals lease to fulfill the same ends. Through these means, coupled with improvement in the national economy, the division anticipates a gradual upturn in metallic mineral leasing.

OTHER FACTORS AFFECTING PERFORMANCE:

The factors affecting this objective are similar to those stated in Objective 1.

Measure (2): Exploration activity (industry indicators and outcome).

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Exploration Drill Holes						
number	51	76	100e	125e	125e	125e
feet	4,485	8,751	10,000e	15,000e	15,000e	15,000e
Drill core sampled						
feet	2,140	1,000	1,000e	1,000e	1,000e	1,000e
Geophysical survey*						
line miles	77	64	100e	100e	150e	150e
Mineral prospects						
occurrences identified	9	10	10	10e	10e	10e

* calendar year 1992 & 1993

DEFINITION, RATIONALE, DATA SOURCE:

The measure of exploration activity, a second measure of industry strength, is best defined by the collective measures of exploration holes drilled, footage of holes drilled, drill core sampled, line miles of geophysical grids, and mineral prospects and occurrences identified.

There is a direct relationship between the discovery of new mineral deposits and the efforts of exploration firms; however, there is no single measure to determine the extent of exploration activity since much of the activity occurs on private lands.

These data are collected as a result of the Exploratory Boring Law. The registration of explorers, governed by Minnesota Rules, chapter 4727, requires anyone engaged in exploratory boring to be registered with the Division of Minerals, Minnesota Department of Natural Resources. The explorer must also notify the Division of Minerals prior to commencing an exploratory boring program and submit information on the location of each hole drilled. The number of drill cores sampled is tabulated by the Division of Minerals based on outside use of the division's Drill Core Library in Hibbing, MN. The core library is the state repository for all drill core extracted in Minnesota and is utilized by exploration companies to examine the nature of the rocks, including mineralization, and to acquire rock samples. The number of prospects, occurrences, and geophysical and geochemical anomalies identified in the state is based on publicly funded research projects.

Geoscience Information and Mineral Potential sections, Division of Minerals, Minnesota Department of Natural Resources.

DISCUSSION OF PAST PERFORMANCE:

Because the data reported above begins for F.Y. 1992, it portrays the recent downturn in exploration in the state. Exploration activity in four calendar years preceding that point was significantly greater. During that period, an average of 126 exploration holes, averaging about 38,000 feet, were drilled each year.

PLAN TO ACHIEVE TARGETS:

A focus of the division is to identify areas of high non-ferrous metallic mineral potential to attract new industry to explore in the state. As part of this effort, the division is exploring innovative, state-of-the-art methods of publishing and distributing mineral potential data to exploration companies worldwide and is investigating administrative changes to the non-ferrous metallic minerals lease to fulfill the same ends. Through these means, coupled with improvement in the national economy, the division anticipates a gradual upturn in metallic mineral leasing.

OTHER FACTORS AFFECTING PERFORMANCE:

Similar to the economic factors that affect Objective 1, and Objective 3a, the U.S. and global economy directly affect exploration activity in Minnesota. During the last few years, non-metallic exploration in the U.S. and Canada has decreased dramatically as multinational metal companies have redirected their exploration dollars to Latin America and other developing countries. The reasons for greater exploration investment in these countries include enhanced mineral availability, less

stringent environmental regulations, liberalization of mining incentives, and other policy changes. It is difficult to predict exactly when this trend will reverse. In Minnesota, however, the overall level of exploration activity has remained somewhat constant, in spite of lower levels of non-ferrous exploration, due to increased exploration for industrial minerals.

Measure (3): Minerals research

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Iron Ore Cooperative Research Program						
Projects	7	11	19	10e	15e	15e
State appropriation (in thousands)	$325.0	$325.0	$311.0	$311.0	n/a	n/a
Non-state matching funds (in thousands)	$116.0	$140.0	$158.0	$200.0e	$250.0e	$250.0e
Mineral Diversification						
Projects	23	17	7	7e	7e	7e
State appropriation (in thousands)	$286.5	$941.0	$375.0	$375.0	n/a	n/a
Envrnmntl Research						
Projects	n/a	n/a	3	4e	6e	6e
Non-state matching funds (in thousands)	n/a	n/a	--	$55.0	$30.0e	$30.0e

DEFINITION, RATIONALE, DATA SOURCE:

Most of the department's mineral research falls under the umbrella of the Iron Ore Cooperative Research, Minerals Diversification, and Cooperative Environmental Research programs.

The Iron Ore Cooperative Research Program is a joint undertaking in which the public and private sectors have pooled resources to assist the taconite industry's efforts to remain competitive in an increasingly difficult global marketplace. The research funded by this program is directed exclusively toward projects that can be of immediate benefit to the industry -- either by reducing production costs or improving plant efficiencies.

The Minerals Diversification Program provides for the diversification of the state's mineral economy through long-term support of mineral exploration, development, production, and commercialization. The objectives of the program are to improve Minnesota's iron industry, encourage exploration and the development of the non-ferrous metallic minerals industry, enhance the state's industrial minerals industry, and ensure that mineral development satisfies the highest environmental quality standards.

In 1993, the Minnesota Legislature provided funds to initiate a Cooperative Environmental Research Program to fund environmental research related to the minerals industry. The program will function similar to the Iron Ore Cooperative Research program in that the research projects will require matching non-state funds. Research priorities will be set by the Mineral Coordinating Committee of the Minerals Diversification Program, whose membership was expanded to include the Minnesota Pollution Agency as a voting member and the U.S. Bureau of Mines and the U.S. Environmental Protection Agency as ad hoc members.

Division of Minerals, Minnesota Department of Natural Resources.

DISCUSSION OF PAST PERFORMANCE:

Since the inception of the Iron Ore Cooperative Research Program in 1987, fifty-five projects have been initiated. Currently, there are twenty-three projects in progress. Of the completed projects, sixteen undertaken at the pilot-scale level have been continued as full-scale plant trials by the industry. Four of these -- digital image analysis of particle size and rod mill to ball mill conversion, being two examples -- have already resulted in, or soon will result in, the succesful outcomes of permanent plant modifications. When operational, these modifications will provide long term benefits to the plants by reducing operating costs and increasing plant efficiency.

The Minerals Diversification Program has resulted in a better understanding of Minnesota's geology and mineral potential through increased geologic drilling and mapping and specific studies evaluating diverse industrial mineral resources such as sand and gravel, dimension stone, ilmenite, and kaolin clay. The industrial minerals studies have resulted in three new mineral leases and two new quarries in the state and have coincided with an increased interest on the part of several companies to further investigate mineral resources in Minnesota.

PLAN TO ACHIEVE TARGETS:

The division convenes a number of advisory groups to determine research priorities and track the progress of the various research projects as they proceed.

OTHER FACTORS AFFECTING PERFORMANCE:

A gradual erosion of legislative support has reduced Minerals Diversification funding to less than half of what it was in the F.Y. 1990-91 biennial budget. In some cases acquisition of matching funds has been difficult.

Objective 4: Continuously improve the administration of the Mineral Resources program.

Measure (1): Selected efficient adjustments (Outcome).

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Satellite offices and laboratory closed	--	--	1	1	n/a	n/a
Staff reductions	4	3	3	--	n/a	n/a
Fleet reduction	28	26	21	--	n/a	n/a

DEFINITION, RATIONALE, DATA SOURCE:

Collectively, these measures can be defined as means to make continuous improvements in management efficiency through innovation, constant attention to change, and the need to work within appropriated budgets. The measures listed above encompass a few of the broad array of actions that the division has taken to improve and streamline the administration of Mineral Resources Management Program.

The Division of Minerals recognizes a need to become more innovative and efficient in order to provide critical services in a period of budgetary restraint while continuing to effectively manage the state's mineral assets and to help keep Minnesota's mineral industry competitive.

Division of Minerals, Minnesota Department of Natural Resources.

DISCUSSION OF PAST PERFORMANCE:

Improvements in efficiency include: consolidating offices; reducing and cross-training staff; reducing fleet; eliminating programs; increasing the number of non-ferrous metallic lease sales held annually; increasing the use of computer technology in data management; installing geographic information systems in order to analyze and graphically depict information for

leases, land ownership, reclamation permits, research programs, mineral potential and geology; utilizing Global Positioning Systems to improve data accuracy; developing low-cost exploration methods; and assisting the industry, where possible, in substituting computer-based modeling for extensive, costly in-plant experimentation.

PLAN TO ACHIEVE TARGETS:

Continue to focus on the efficient administration of the program.

OTHER FACTORS AFFECTING PERFORMANCE:

N/A.

SUMMARY

AGENCY: Natural Resources, Department of
PROGRAM: 02 - Water Resources Management

EXPENDITURES AND STAFFING (F.Y. 1994)		
	($ in Thousands)	
Total Expenditures:	$	**8,601**
From State Funds	$	8,288
From Federal Funds	$	313
Number of FTE Staff:		129.6

PROGRAM GOALS:

The mission of the Division of Waters is to provide leadership in the cooperative management of activities affecting Minnesota's water resources to promote resource protection while allowing reasonable use.

To conserve and use water resources of the state in the best interests of its people, and to promote the public health, safety, and welfare: (1) by identifying public waters subject to the control of the state; (2) to the extent provided by controlling the appropriation and use of waters of the state; and (3) by controlling and supervising activity that changes or will change the course, current, or cross section of public waters. M.S. 103A.201.

To preserve the wetlands of the state to conserve surface waters, maintain and improve water quality, preserve wildlife habitat, reduce runoff, provide for floodwater retention, reduce stream sedimentation, contribute to improved subsurface moisture, enhance the natural beauty of the landscape, and promote comprehensive and total water management planning. M.S. 103A.202.

To develop and manage water resources to assure an adequate supply to meet long-range seasonal requirements for domestic, municipal, industrial, agricultural, fish and wildlife, recreational, power, navigation, and quality control purposes from waters of the state. M.S. 103G.265.

To prevent the unwise use and development of shoreland and floodplain areas to protect health and safety, prevent property damage, preserve and enhance water quality, preserve the economic and natural environmental values and retain the scenic, recreational, historic and scientific values. M.S. 103A.207, M.S. 103F.201, M.S. 103F.305.

DESCRIPTION OF SERVICES:

The Water Resources Management Program has a variety of interrelated activities that work toward the fulfillment of the mission and goals:

Ground and Surface Water Appropriation or Diversion

Monitoring and regulating the amount of water used for commercial, industrial, municipal, agricultural, and other purposes, restricting withdrawals when necessary during drought conditions to ensure adequate supplies for in-stream flow needs and

other higher priority uses.

Dam Safety

Reducing the risk of loss of life or injury associated with the presence of dams on state waterways through a program of inspection, repair, reconstruction, or removal of dams, and grants to local governments for the same purposes.

Construction in Protected Waters and Wetlands

Preventing degradation of streams, lakes and protected wetlands by regulating development activities in these waterbodies through a permit system; preventing destruction and loss of wetlands through implementation of the Wetlands Conservation Act; and responding to surface water problems that arise, such as fluctuating lake levels and conflicts among uses of the water surface, by providing statewide standards and policy development.

Technical Ground and Surface Water Analyses

Conducting investigations that collect, analyze and interpret data on climate, ground water and surface water, adding to and maintaining systems that provide crucial information to guide state and local water policy-making; providing water resources information and technical assistance to local units of government in development of water plans that detail local roles in regulation of water and land use; and preventing degradation of ground water supplies by providing standards for assessing geologic sensitivity to pollution and applying those criteria throughout the state and continuing development of county ground water atlases.

Land Use Management

Guiding the development of shoreland and floodplain areas, including wild and scenic rivers, through statewide rules and ordinances administered by local governments that seek to prevent erosion, non-point and point source contamination, flood damages and maintain scenic and fish/wildlife habitat values; and reducing the risk of loss of life, injury and property damage associated with floods through regulation, provision of grants for projects to avoid flood damage and coordination of governmental response during major flood events.

BACKGROUND INFORMATION:

The Division of Waters is responsible for managing the water resources of the state including 11,842 lakes totalling 4,705,801 acres; 10,029 protected wetlands totalling 1.2 million acres; 6,564 rivers and streams totalling 92,000 miles; and an estimate of over 22 million acre-feet of ground water. The Division currently processes about 1,350 permits each year to prevent degradation of these resources. This means that about 1,100 protected waters permits are issued and about 250 appropriation permits are processed each year.

The current amount of water used in Minnesota each year totals almost 3.2 billion gallons per day (gpd). This is broken down into public and rural water supply of .8 billion gpd, irrigation at about .2 billion gpd and industrial and power production at about 2.2 billion gpd.

The division accomplishes a lot of its land use management activities by working with and through local government units. Currently about 470 communities administer floodplain zoning ordinances and participate in the National Flood Insurance Program; 208 communities have adopted updated shoreland management ordinances; and 60 communities participate in the wild and scenic rivers management program.

One key to managing our water resources is adequate data and this is accomplished in Minnesota by establishing observation programs for ground water, lake levels, stream flow and precipitation. There are currently 700 observation wells measured, 700 lake gages established, 105 stream gages in watersheds around the state and about 1,600 precipitation observation points.

PROGRAM DRIVERS:

- Climatic Events
  Flood and drought events are the two climatic situations that generate extreme amounts of workload within the Division and the Department that can not be adequately planned for or anticipated. When these climatic events are particularly severe or extend over a long period of time many other normal program activities virtually come to a halt at least on a temporary basis. The flooding that occurred in the summer of 1993 was a good example of the disruption caused by extreme climatic events and the effects on workload are still being felt during the summer of 1994.

- Habitat Maintenance
  A major function of the protected waters permit program has become the preservation or maintenance of fish and wildlife habitat as people continue to conduct activities that have potential impacts on water resources. In some cases the minimization of habitat destruction is the only reason that permits are still required for some activities. Some classes of protected waters permits could reasonably be delegated to a lower level of government or deregulated entirely if standards and monitoring programs could be established for fish and wildlife habitat preservation. There are activities however that can have significant irreversible impacts on fish and wildlife habitat and these need to remain under permit in order to minimize the damage.

- Public Health and Safety
  Some permit and land use regulation activities exist primarily because of concerns over health and safety. Some examples are unsafe dams, bridges that cause flood stage increases, development of areas that are periodically inundated by flood waters, and development of small lots where there is not enough separation of water supply wells and individual sewage systems. These are areas where peoples health and in some cases lives are at stake if staff in the Division, either directly or indirectly, do not do a good job of program implementation.

- Local Water Planning
  Over the last 10 years local government units of all types have become increasingly involved in water resources planning and management. This emphasis has opened up new opportunities for cooperative water resource planning and management that did not exist to any great degree in the past. This has created new demands for water resources data and analyzed information but it may also lead to a situation where more water resources management can occur at the local level with state support rather than being directly managed by the state. The Division of Waters is committed to working with local government units to enhance their capability for water resources planning and management.

AGENCY: Natural Resources, Department of
PROGRAM: Water Resources Management

OBJECTIVE, MEASURE

Ground and Surface Water Appropriation or Diversion

Objective 1: Stabilize total water withdrawals by 2000 through improvements in water use efficiencies.

Measure (1): Total water use in billion gallons (calendar year).

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	1,132	1,000				
Targets			1,100	1,100		

DEFINITION, RATIONALE, DATA SOURCE:

Permitted appropriators are required to report water use to the DNR each year.

Total annual water withdrawal data provide a general indicator of water use trends. Recent legislation requires communities to employ demand reduction measures before submitting requests to construct new water supply wells or increases to authorized water volumes. Demand reduction measures include an evaluation of conservation rate structures and a public education program that may include a toilet and showerhead retrofit program. These changes, along with new Federal manufacturing standards for water efficient plumbing fixtures, should improve water use efficiencies by 2000.

State water use data base.

DISCUSSION OF PAST PERFORMANCE:

Water use in the past has generally been increasing because there has been very little emphasis on water conservation, once-through heating and cooling were fairly common, and droughts would create new interest in establishing permanent or supplemental water supplies.

PLAN TO ACHIEVE TARGETS:

Recent legislation requiring public water suppliers to develop water conservation plans and requiring the elimination of once-through heating and cooling systems will help to stabilize total water use. The Division will monitor the situation annually and provide technical assistance to appropriators to reduce and stabilize total water use.

OTHER FACTORS AFFECTING PERFORMANCE:

Objective 2: All public water suppliers serving more than 1,000 persons will have water emergency and conservation plans to insure that sufficient water supplies are available for future growth. There are 337 public water suppliers that must submit plans for approval.

Measure (1): Cumulative no. of plans submitted for DNR approval.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	30	40				
Targets			50	150		

DEFINITION, RATIONALE, DATA SOURCE:

Water emergency and conservation plans must include supply and demand reduction measures, alternative sources of water and allocation priorities for use in an emergency. Water emergency and conservation plans will help prepare communities for short-term water shortages and also improve long-term water use efficiencies. There are 337 public water suppliers serving more than 1,000 persons, but the Department will also encourage smaller systems to develop plans.

Water Appropriation Program Manager.

DISCUSSION OF PAST PERFORMANCE:

Until recently there was not a lot of incentive for public water suppliers to conserve water because in many cases the more water sold, the more money made. Several droughts have shown that even communities with good water supplies can have problems or cause problems for others. Water conservation plans can also reduce the large capitol expenditures for new wells and water towers.

PLAN TO ACHIEVE TARGETS:

The Division will provide technical assistance to public water suppliers to insure that conservation plans are developed.

OTHER FACTORS AFFECTING PERFORMANCE:

Objective 3: Once-through heating and cooling systems using in excess of five million gallons per year will gradually be converted to water efficient alternatives by 2010 to make water available for other uses.

Measure (1): Total water use by once-through systems in billions of gallons/year & total number of once-through cooling systems remaining in operation.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	11/96	10/95				
Targets			10/75	6/38		

DEFINITION, RATIONALE, DATA SOURCE:

A "once-through system" is a space heating, ventilating, air conditioning (HVAC), or refrigeration system used for any type of temperature or humidity control application, utilizing groundwater, that circulates through the system and is then discharged without reusing it for a higher priority purpose (M.S. 103G.005, Subd. 13a).

Once-through systems must be converted by the end of the design life for the equipment. The Department has amended all once-through system permits to include conversion dates that range from 1995 to 2010. Conversion of once-through systems to water efficient alternatives will save approximately 11 billion gallons of groundwater per year.

Data base for Water Appropriation Permits.

DISCUSSION OF PAST PERFORMANCE:

Appropriation permits for once-through users have already been modified to insure that systems are converted. The number of once-through users is already coming down.

PLAN TO ACHIEVE TARGETS:

The annual water use report will be used to monitor the conversion of once-through systems. Technical assistance will be provided if requested but for most companies it is a question of when they want to make the capital investment for conversion.

OTHER FACTORS AFFECTING PERFORMANCE:

Dam Safety

Objective 4: Inspect 100% of the high hazard dams in the state annually and insure that they are in a safe operating condition.

Measure (1): Percentage of high hazard dams inspected annually.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	100%	100%				
Targets			100%	100%		

DEFINITION, RATIONALE, DATA SOURCE:

Dams are divided into three categories of low, medium, and high hazard. High hazard dams have potential for loss of life and disruption of services if they should fail. There are 40 federal and non-federal high hazard dams in the state at this time. This number will fluctuate slightly as new dams are built, as old dams are removed, and as development conditions change downstream from dams.

It is important to frequently inspect high hazard dams and to repair them to insure that they don't fail possibly causing loss of life and disruption of services.

DNR Division of Waters Dam Inventory.

DISCUSSION OF PAST PERFORMANCE:

All high-hazard dams have been inspected annually, and this is the highest priority within the program.

PLAN TO ACHIEVE TARGETS:

The division plans to continue to inspect all high-hazard dams annually under the existing program. It is and will continue to be the highest priority activity in the dam safety program.

OTHER FACTORS AFFECTING PERFORMANCE:

Construction in Protected Waters and Wetlands

Objective 5: Protected waters permit applications will be evaluated to minimize or eliminate the negative impacts of construction activities on water quality and fish and wildlife habitat.

Measure (1): Total number of protected waters permit applications evaluated each year.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	996	1,029				
Targets			1,094	1,100	1,100	

DEFINITION, RATIONALE, DATA SOURCE:

Protected waters permits are required for most activities conducted below the ordinary high water elevation of protected waters and wetlands.

It is very difficult to measure the effectiveness of the protected waters permit program because of the many types of activities that require permits and because the effects of the projects are usually very site specific. The fact that permits are applied for means that field hydrologists have an opportunity to discuss the project with the applicant and with other government agencies. This provides an opportunity to make modifications to the proposed project to reduce negative environmental impacts or to deny the permit if the proposed project is unreasonable or has too many negative impacts. Efforts are underway to identify measures that better define the effectiveness of this program.

DNR Division of Waters Permit Index Database.

DISCUSSION OF PAST PERFORMANCE:

The amount of permit activity varies a lot with climatic factors, interest rates and proposed program changes.

PLAN TO ACHIEVE TARGETS:

The processing of protected waters permit applications is a very high priority because of public safety and habitat preservation concerns, and the fact that the construction season is relatively short.

OTHER FACTORS AFFECTING PERFORMANCE:

Objective 6: The current number of acres of protected wetlands remaining in the state will be maintained as a part of the state's "no net loss" of wetlands policy.

Measure (1): Millions of acres of protected wetlands remaining.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	1.2	1.2				
Targets			1.2	1.2	1.2	

DEFINITION, RATIONALE, DATA SOURCE:

Protected wetlands include wetland type 3, 4, and 5 as defined in U.S. Fish and Wildlife Service Circular 39 that are greater than 2½ acres in incorporated areas and greater than 10 acres in unincorporated areas.

The State has established a policy of no net loss of wetlands. Approximately 1.2 million acres of the 7.9 million acres of remaining wetlands are classified as protected wetlands. Activities in protected wetlands are regulated by the DNR. Other wetlands are protected by other local and federal agencies. When the acreage of wetlands is impacted by construction activity, mitigation (or the creation of new wetland areas) is required to offset the loss.

U.S. Fish and Wildlife Service Circular 39, DNR Protected Waters Inventory.

DISCUSSION OF PAST PERFORMANCE:

The distant past performance was not good since many wetlands were drained or filled. In recent years performance has been good. Even when wetlands are modified, mitigation is required to help maintain or expand the wetland acreage base.

PLAN TO ACHIEVE TARGETS:

The Division will carefully review all applications to modify, drain or fill protected wetlands. The Division will also work closely with other wetland management agencies to insure that the no-net-loss policy is achieved.

OTHER FACTORS AFFECTING PERFORMANCE:

Technical Ground Water and Surface Water Analyses

Objective 7: County atlases or regional studies that map the geology and hydrogeology will be completed for all counties by 2020 to better understand the interaction among ground water and surface water availability and water withdrawals.

Measure (1): Cumulative number of counties with hydrogeologic studies completed.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	7	8				
Targets			12	13		

DEFINITION, RATIONALE, DATA SOURCE:

Hydrogeologic studies are quantitative evaluations of the geology and hydrology of aquifers and their potential to supply water.

Information about availability of ground water is needed for planning and decision-making at all levels of government.

Geologic maps, hydrologic tests and field data collection, models.

DISCUSSION OF PAST PERFORMANCE:

During the last four years the county atlas and regional studies program was accelerated in order to complete studies in seven more counties, and this accelerated pace was proposed to continue. The funding for the program is proposed by the LCMR to be switched to the general fund.

PLAN TO ACHIEVE TARGETS:

The only way this activity can meet its objectives is if it is fully funded by the legislature. Partial funding will reduce the number of counties to be studied proportionately, and no funding will mean the elimination of the activity.

OTHER FACTORS AFFECTING PERFORMANCE:

Objective 8: The observation well network will contain wells in major water supply aquifers across the state by the year 2000 to monitor the interaction among precipitation, ground water levels and withdrawals.

Measure (1): Number of wells being measured/number of counties participating.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	640/72	624/59				
Targets			628/61	700/70		

DEFINITION, RATIONALE, DATA SOURCE:

Observation wells are unpumped wells maintained for purposes of periodic measurement of static water levels in aquifers.

Measurements of water levels in aquifers document the responses of aquifers to climatic conditions or to pumping. Changes in water level alert managers to the response of an aquifer to stress.

OBWELL Database.

DISCUSSION OF PAST PERFORMANCE:

The activity has been primarily stable until recently when new interest at the state and local levels have resulted in increases in numbers of wells and expansion of coverage.

PLAN TO ACHIEVE TARGETS:

Local interest to assist in collecting data and better ability to computerize well data will result in an expansion of the program within current budget constraints.

OTHER FACTORS AFFECTING PERFORMANCE:

Objective 9: The number of lake level and streamflow gages supported by the Division will increase to provide more complete coverage of watersheds statewide and to monitor the interaction among precipitation, surface water levels or flows, ground water levels and withdrawals particularly as they apply to high and low flow/level situations. The eventual objective is to establish a network of approximately 1,100 gages.

Measure (1): Number of lake level and streamflow gages.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	669	686				
Targets			700	710		

DEFINITION, RATIONALE, DATA SOURCE:

Lake level elevations are computed from lake gage readings provided by local volunteers. Lake gages are distributed and calibrated each spring by Division staff. Streamflow and volume data are collected and distributed by the United States Geological Survey via a cooperative funding program with the Division of Waters. Streamflow gages are distributed statewide and locations determined through consultations with other federal, state, and local agencies. A probable maximum number of lake gages that can be handled is about 1000 with about 100 permanent streamflow gages.

Historic and current lake level and streamflow information is important to comprehensive and successful water management activities and provide invaluable information during times of flooding and drought. It is important that statewide coverage and long term continuous level records be maintained.

Volunteer network of citizen lake gage readers, U.S. Geological Survey, Department of the Interior and Division of Waters gaging network, Lakes DB database.

DISCUSSION OF PAST PERFORMANCE:

The number of lake level gaging sites has been steadily increasing in recent years due to local interest and ability to computerize and analyze more data. The number of stream flow gaging sites is generally declining due to the high cost of establishing and maintaining the gages.

PLAN TO ACHIEVE TARGETS:

The lake level and stream flow gaging programs will continue to show modest growth as local volunteers and local governments become interested and are willing to donate time and/or funds to operate or read the gages. It is a very popular program on lakes where most of the growth is occurring.

OTHER FACTORS AFFECTING PERFORMANCE:

Land Use Management

Objective 10: All local governments implementing DNR land use (shoreland, floodplain, and Wild and Scenic Rivers) management programs shall receive training on these programs every five years.

Measure (1): No. of communities that sent representatives to DNR-sponsored land use training programs annually.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	83	244				
Targets			35	53		

DEFINITION, RATIONALE, DATA SOURCE:

Each community participating in one of the DNR land use programs needs to receive training about the programs to encourage proper administration and enforcement and to promote program continuity within the community.

There is a fairly high degree of turnover among staff and elected officials in local governments. By encouraging all participating local governments to send representatives to DNR-sponsored training at least once every five years, the DNR can develop contacts and promote administration and enforcement of DNR land use programs.

Records of attendance at DNR-sponsored training sessions maintained in DNR training files.

DISCUSSION OF PAST PERFORMANCE:

In recent years there has been a lot of interest in providing training to local government officials but it has come in spurts so that many are trained one year and few the next.

PLAN TO ACHIEVE TARGETS:

The Division wishes to establish an annual training program for local government officials so that about 20% of the officials are trained each year. This will make it a regularly scheduled activity with a fixed amount of staff time and budget needed each year.

OTHER FACTORS AFFECTING PERFORMANCE:

Objective 11: The number of structures subject to flooding in 1990 will be reduced by 25% by the year 2000.

Measure (1): Number of structures subject to flooding.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	16,500	16,100				
Targets			15,500	13,300		

DEFINITION, RATIONALE, DATA SOURCE:

Structures subject to flooding include all structures (homes and businesses) that have been constructed in designated special flood hazard areas that have not been appropriately elevated or floodproofed.

A survey was conducted during the late 1970's to determine how many structures were located in designated flood hazard areas. The number determined at the time was approximately 17,000 structures. This number probably continued to rise for a while until most significantly flooded communities joined the National Flood Insurance Program (NFIP). New structures in these communities must be properly elevated or floodproofed to protect them from flooding.

Since that time fires, natural disasters, flood control projects and active acquisition programs have started to reduce the number of structures subject to flooding in designated special flood hazard areas. The number of structures subject to flooding should continue to go down.

Estimates made by the DNR Division of Waters. Efforts are underway for a more thorough inventory of structures in flood prone areas but this effort will take several more years to complete.

DISCUSSION OF PAST PERFORMANCE:

There are a small number of structures that have been constructed in violation of local zoning ordinances that are not properly elevated or floodproofed. Many of the structures that have been acquired or that have been protected by flood control projects have been assisted by grants to local government units under the Flood Hazard Mitigation Grant Program.

PLAN TO ACHIEVE TARGETS:

The plan is to continue to promote local floodplain management activities and to solicit flood hazard mitigation grant proposals from local governments. To date grant requests have always exceeded the amount of money available. One significant factor in determining priorities for grants is whether the proposed project will remove homes from the floodplain or provide a significant amount of flood protection. No additional funds are needed to meet the objective but the objective could be surpassed with the availability of additional grant funds.

OTHER FACTORS AFFECTING PERFORMANCE:

Objective 12: Approximately 1/4 of the 370 communities enrolled in the National Flood Insurance Program that have significant flooding problems will be contacted each year to monitor the administration of and provide assistance in the implementation of their floodplain management ordinances.

Measure (1): Number of communities contacted each year to provide assistance.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	61	73				
Targets			60	90		

DEFINITION, RATIONALE, DATA SOURCE:

Of the 472 communities in Minnesota enrolled in the National Flood Insurance Program 371 have special flood hazards and are required to adopt local floodplain zoning ordinances that meet minimum state and federal requirements. The requirements ensure that new structures in special flood hazard areas are properly elevated so they will not be subject to flood damage.

The requirements of floodplain zoning ordinances are very complex and there is a need for periodic contact with the local government units to provide training, assistance, advice, monitoring of past actions and make sure they know who to call if they have problems or questions. The floodplain management program will not be effective if these contacts or meetings are discontinued.

Spreadsheet files located in the Division of Waters and workplans filed with the Federal Emergency Management Agency.

DISCUSSION OF PAST PERFORMANCE:

Over the last few years there has been increasing emphasis on one-on-one assistance to communities administering floodplain management ordinances. Three factors have influenced the level of success in recent years. The first is that when intensive training programs have been put on, the emphasis on one-on-one community assistance is temporarily reduced. A second factor is the availability of staff resources. Due to leaves of absence or mobility assignments this program has been somewhat understaffed at several occasions in recent years. The third factor is that the Federal Emergency Management Agency has been making it a higher priority in its state cooperative programs.

PLAN TO ACHIEVE TARGETS:

The Division's goal for several years has been to contact each participating community at least once every four years. With both the state and the federal emphasis on more community assistance, the momentum is there to see that it happens. No additional funds are requested to implement the objective.

OTHER FACTORS AFFECTING PERFORMANCE:

Objective 13: The number of communities administering upgraded shoreland ordinances which will reduce substandard sewage systems will increase to 278 out of approximately 600 potential shoreland communities by the year 2000.

Measure (1): Cumulative no. of communities working toward reduction of substandard sewage systems in shoreland areas.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	43	109				
Targets			158	208		

DEFINITION, RATIONALE, DATA SOURCE:

The DNR has identified 606 communities that potentially need to adopt shoreland ordinances. Only 278 are likely to be targeted for adoption under the current program.

The communities have shoreland and water resources that could be impacted by uncontrolled development of the shoreland areas. Only the very high priority communities have been notified to adopt shoreland ordinances to date. Communities that do adopt ordinances will administer provisions that require new septic systems, establish building and other setbacks and restrict vegetation removal.

DNR inventory of shoreland communities.

DISCUSSION OF PAST PERFORMANCE:

Only communities that have large amounts of shoreland have been targeted to adopt ordinances so far. It is felt that additional communities cannot be handled without increasing staff resources.

PLAN TO ACHIEVE TARGETS:

Seventy ordinances are projected to be adopted over the next 4 years. This is estimated to be all that can be handled with existing staff when you look at the training and technical assistance that needs to be provided to communities that have already adopted ordinances.

OTHER FACTORS AFFECTING PERFORMANCE:

Objective 14: Approximately 1/10 of the 60 current communities administering Wild and Scenic Rivers ordinances will receive a training session and a detailed evaluation of their administration of and compliance with their ordinances each year.

Measure (1): Number of communities evaluated each year.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	1	0				
Targets			6	7		

DEFINITION, RATIONALE, DATA SOURCE:

Sixty counties or incorporated areas are located along state designated Wild and Scenic Rivers. These include portions of the Cannon, Rum, St. Croix, Minnesota, North Fork Crow, Mississippi and Kettle Rivers.

Although this program is limited in scope it is essential to protect these river segments from overdevelopment. It is

frequently difficult for communities to resist the desire for future development so the DNR helps by conducting one-on-one meetings with local government officials to provide training, assistance and advice and to monitor the administration of and compliance with Wild and Scenic Rivers zoning ordinances.

Division of Waters' files.

DISCUSSION OF PAST PERFORMANCE:

In the past concentrated technical assistance and training was only provided to communities that requested the assistance.

PLAN TO ACHIEVE TARGETS:

The target is to provide assistance to all of the communities along a river segment so that there is a combination of one-on-one community assistance and training as well as assistance to small groups of communities along a given river segment. This approach will optimize the amount of assistance that can be provided.

SUMMARY

AGENCY: Natural Resources, Department of
PROGRAM: 03 - Forest Management

EXPENDITURES AND STAFFING (F.Y. 1994)

	($ in Thousands)
Total Expenditures:	$ **39,383**
From State Funds	$ 36,479
From Federal Funds	$ 2,904
Number of FTE Staff:	514.3

PROGRAM GOALS:

- To provide a long-term, sustainable yield of forest resources from state forest lands (M.S. 89.002, M.S. 89.21, M.S. 89.36-89.37, M.S. 89.71, M.S. 90, M.S. 86A). Forest resources include timber and other forest crops, fish and wildlife habitat, clean water, recreation, rare and distinctive flora and fauna, air, soil, and educational, aesthetic and historic values.

- To improve the health and productivity of other public and private forest (including community forest) lands (M.S. 88.79, M.S. 89.01, M.S. 89.37, M.S. 89.51-89.59, M.S. 282.04, M.S. 282.131, M.S. 282.14).

- To protect life, property, and natural resources from wildfires (M.S. 88).

- To provide a meaningful natural resource work and educational experience for unemployed youth and young adults while accomplishing significant natural resource conservation/management work (1992 Laws of MN, Chapter 513, Article 2, Section 20; and 1989 Laws of MN, Chapter 335, Article 1, Section 84.98).

DESCRIPTION OF SERVICES:

The Forest Management Program exists to maintain and improve the health and productivity of Minnesota's forests so they can produce a wide variety of forest outputs, values, and opportunities to meet the needs of current and future generations of Minnesotans; protect the lives, property, and natural resources of Minnesota citizens from wildfire; and provide a meaningful natural resource work and educational experience for unemployed youth and young adults.

The Forest Management activity provides for the management of 3.2 million acres of state-owned land within the boundaries of 57 state forests and 1.3 million acres of other state-owned lands for sustainable levels of resource outputs, uses, and opportunities. This activity also provides technical forest management and cost-share assistance to other public and private landowners; monitors the health, growth and composition of Minnesota's forests; provides forest resource information to forest land managers and users; produces tree and shrub seedlings for planting on public and private lands; and coordinates the development and delivery of forestry related environmental education materials. Specific activities include:

- Forest vegetation management planning for 4.5 million acres of state forest lands. Forest vegetation management planning directs state land timber sales and harvesting, reforestation, and timber stand improvement.
- Maintenance and operation of the 2,064 mile state forest road system that provides access to state forest lands for public use and resource management, and to several million acres of federal, county, and private forest lands.
- Maintenance and operation of 46 state forest campgrounds (with nearly 1,000 campsites), 44 day-use areas, and 1,200 miles of recreational trails.
- Enforcement of state forest rules and regulations.
- Forest Stewardship planning, technical, and cost-share assistance for non-industrial private forest landowners.
- Technical urban forestry and cost-share assistance to Minnesota communities.
- Maintenance and analysis of the management-level forest resource inventory for DNR administered lands, and a statewide forest inventory that encompasses all land ownerships.
- Development, implementation, and monitoring of water quality and wetland Best Management Practices for forest management.
- Development of a statewide ecological classification system (ECS) to support ecosystem-based management.
- Development of forest soils interpretations and delivery of management assistance for forest managers.
- Forest pest population monitoring and evaluation on forest lands in the state, and the development and communication of pest management guidelines to forest landowners, industry, and other units of government.
- Remote sensing products and services (e.g., aerial photography, satellite imagery, interpretation) for use by resource managers and the general public.
- Development and coordination of Geographic Information System (GIS) technologies and applications for forest resource management.
- Forest resource information and analysis to support forest products and wood energy expansion and development consistent with long-term, sustainable forest management.
- Technical assistance to counties without county land departments.
- Development of interdisciplinary forest resource management plans for DNR regions, and the statewide forest resources plan and assessment.
- Coordination of Project Learning Tree, a K-12 environmental education program, and development of other forestry related environmental education materials and programs (e.g., Forestry Fair, Arbor Day).

The Firefighting activity provides for the protection of all non-federal lands in the state (45.5 million acres) from wildfires. The Firefighting activity includes:

- Promotion of wildfire prevention through public education, regulation of open burning, enforcement of wildfire statutes, and fuels management. Prevention activities are designed to reduce the number of wildfires and minimize the damage caused by wildfires. In Minnesota, 98% of all fires are caused by human activity.

- Preparedness for wildfire suppression through interagency/cooperative training of firefighters and support personnel, developing and maintaining partnerships with local and national agencies that are involved in fire protection, operation of a statewide interagency wildfire coordination center, maintaining a national interagency fire cache which is located in Minnesota, precontract arrangements for ground and aerial suppression equipment, maintenance of a radio communications network, developing mobilization and dispatching plans, and other activities to provide for effective suppression activities. Wildfire protection in Minnesota functions effectively because of partnerships with fire departments, federal agencies with wildfire responsibilities, and national partnerships.

- Detection and suppression of wildfires. Detection is accomplished by planned aerial detection and some lookout towers. The goal of suppression actions is to provide fast, effective initial attack. Effective initial attack minimizes suppression costs and protects life, property, and natural resources. Effective suppression is accomplished by a balanced force of trained firefighters, support personnel, and aerial and ground equipment.

- Planning, coordination, and management of prescribed fires on state-administered lands.

The Youth Programs activity operates the Minnesota Conservation Corps (MCC) and Youth in Natural Resources programs.

MCC provides two primary services:
- meaningful work and educational experience for unemployed youth; and
- a quality, cost-effective workforce for accomplishing a wide variety of conservation projects.

The MCC has two components: 1) a summer youth program which employs 15-18 year olds, and 2) a year-round young adult program for 18-26 year olds. Hiring preference is given to those who are economically, socially, physically, or educationally disadvantaged and to protected classes. Participants develop self-esteem, self-management skills, a strong work ethic, new job skills and attitudes, and an awareness of the natural environment. In return, Minnesotans realize long-term environmental and economic benefits including improved timber production, fish and wildlife habitat, trail and waterway systems, park and recreation resources, and work-prepared citizens. The MCC serves most DNR disciplines and other public agencies.

The Youth in Natural Resources program is a career exploration program for youth of color. This program provides youth and staff with eight weeks of training in career/education options related to natural resource management. Internships and tuition vouchers are also available.

Further, the Office of Youth Programs contracts with several agencies to provide services ranging from construction of the Superior Hiking Trail. to employment opportunities for hearing impaired youth, to assisting Minneapolis Community College in field experience for its students of color.

BACKGROUND INFORMATION:

MEASURES OF ACTIVITIES (A), WORKLOAD (W), UNIT COSTS (UC), OTHER DATA (O)

Type	Measure	F.Y. 1993	F.Y. 1994
	Forest Management		
A	Cords of wood harvested from DNR administered land	636,200	677,800
A	Acres of reforestation on DNR administered land	27,658	n/a
A	Acres of thinning, pruning and release of young trees from compe	3,842	n/a
W	No. of camper nights at state forest campgrounds	83,064	n/a
A	No. of leases administered on state forest lands	2,000(e)	2,000(e)
A	Acres of non-industrial private forest land management	25,022	24,000(e)
A	No. of communities provided technical & cost share assistance	324	n/a
A	Tree and shrub seedlings sold by DNR nurseries	13,200,000	11,400,000
A	Millions of acres monitored and evaluated for forest pest outbreaks	10-15(e)	10-15(e)
	Firefighting		
W	Acres/No. of wildfires reported suppressed	18,925/1,363	19,272/1,438
W	No. of burning permits issued	60-80,000(e)	80,000(e)
A	Acres of prescribed fires	15,000(e)	15,000(e)
	Youth Programs		
A	No. of youths and young adults enrolled in youth programs	302	359

PROGRAM DRIVERS:

- Economic and Environmental Sustainability

  The health and vitality of the state's forest products and tourism industries are both heavily dependent on Minnesota's forests. The forest products industry requires sustainable supplies of timber to meeting increasing market demands and compete in a global economy. The tourism industry depends on the aesthetic quality, diversity, spiritual value and recreation opportunities available on forest lands. At the same time, Minnesotans are concerned about a wide range of potential environmental impacts resulting from growing demands for forest resources and amenities.

  Annual timber harvests are projected to increase from statewide levels of 3.4 million cords in 1990 to 4.85 million cords by the year 2000. Directly related to this is a projected $1.6 billion in capital investments to be made by forest products industries during the same time period. The combination of increased timber harvests and capital investments will continue the rapid growth in the value of forest products manufactured in Minnesota from $6.2 billion in 1990 to an estimated $7.8 billion in 1993. Minnesota's forest products industries currently have payrolls of over $2 billion and directly employ nearly 60,000 people.

  Our ability to provide increased, yet sustainable, levels of forest outputs, while at the same time maintaining (or improving) the health and diversity of forest ecosystems will depend greatly on the degree to which forest managers are successful in addressing environmental concerns embodied in the Generic Environmental Impact Statement (GEIS) for timber harvesting and forest management (approved by the MN EQB in April 1993). Addressing these issues will significantly increase the cost of forest management in the State. As the lead forestry agency in Minnesota, the DNR is responsible for examining the GEIS's major findings and recommendations within the context of existing policies and programs. Where needed, the DNR will be responsible for developing and implementing additional forestry initiatives. The DNR's active involvement and leadership will be critical if the GEIS is to have an influential and long-term impact on the management of the state's forest resources.

- Private Forest Management. To address emerging issues focused primarily on the protection of and management for nontimber resources and amenities, public forest land management agencies will be expected to achieve an equitable balance between timber and nontimber resources/values. This balance will likely affect, to some degree, future timber supplies from public lands.

  With nearly 40% of the State's timberland in private ownership, and with harvests likely reaching recommended levels on public lands, private lands will be called upon to provide a greater portion of future timber harvests. At the same time, the production of timber from private lands will be expected to be balanced with the objectives of the landowner and within the context of the overall ecosystem.

  Improved stewardship of private forest lands, through the assistance of professional resource managers, will be necessary to assure that private lands will be able to provide needed timber while meeting landowner needs and maintaining the ecological integrity of the land.

- Increasing Residential Development in Forested and Other Wild Suburban Areas, Along Lakeshores, and in Rural Areas. The occurrence of wildfires, and the potential for destruction of life, property, and natural resources by wildfires is much greater in these "rural/urban interface" areas compared to rural areas. Thus maintaining a well equipped and trained wildfire suppression force becomes more and more important. However, the DNR's ability to maintain this level of preparedness in the future is uncertain, given ongoing budget and staffing reductions. Increased demands on remaining staff in areas other than fire protection will make it even more difficult to maintain current levels of preparedness. Cooperative efforts with other government agencies and fire departments will be the key to effective and efficient wildfire protection.

- Reduced and Aging Workforce. Despite significant reductions in staffing and funding (from federal and state sources), the Division of Forestry has continued to provide the services and products expected by the public by adapting its approach to management and service delivery. Continued innovation will be critical in light of anticipated budget and staffing constraints. Since 1985, Division of Forestry staffing has been reduced by over 20%.

The continued aging of the division's workforce will pose a challenge for future fire prevention and suppression efforts. Fire suppression especially requires long hours of mentally and physically exhausting work, often in continuous stretches of several weeks and even months. In addition to physical and mental stamina, a workforce with a more balanced age structure will provide a greater diversity of skills, knowledge and ideas to address emerging resource management issues.

- Increased Interest in Youth Service/Employment/Development Programs. Youth programs have become a high priority among political leaders and legislators at both the state and national levels. Increased interest will likely translate into increased opportunities for youth programs in the near future. Coordination between the growing number of youth programs and initiatives will be important for the effective use of available funding and resources. Likewise, increased competition between the growing number of youth programs for available funding and resources will affect the performance of the Youth Corps Program Activity.

AGENCY: Natural Resources, Department of
PROGRAM: Forest Management

OBJECTIVE, MEASURE

Objective 1: Reforest an acreage at least equal to the acreage harvested on DNR-administered lands each year.

Measure (1): Reforestation of DNR-administered lands as a percentage of acres of DNR-administered lands

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	99	95				
Targets	100	100	97	99		

Measure (2): Thousands of acres of DNR-administered land reforested each year.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	29.5	27.7				
Targets	29.7	31.0	32.0	34.0		

Measure (3): Cost/acre for reforestation on DNR-administered lands.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	$37.91	$56.79				
Targets			$57	$59		

DEFINITION, RATIONALE, DATA SOURCE:

Reforestation is the establishment of appropriate tree species at an appropriate stocking on a site. Reforestation is done by means of planting, direct seeding, and natural regeneration (i.e., stump sprouts, root suckers, seeding) from existing trees. The DNR currently tracks harvests from DNR administered lands according to the number of cords harvested. Acres of timber harvest from state land are determined indirectly using a standard conversion of 20 cords per acre of harvest. A five-year running average is used compensate for year-to-year fluctuations caused by weather, funding, and other unpredictable factors.

Cost per acre: total costs coded by DNR Division of Forestry personnel to reforestation on DNR administered lands divided by the total reforestation acres on DNR administered lands.

Reforestation of an acreage at least equal to acreage harvested each year is a requirement of the Forest Resource Management Act of 1982. Timber harvesting and reforestation on state forest land are major responsibilities of the DNR Division of Forestry. Reforestation acreage and cords of wood harvested are easily measured. Use of a five-year running average evens out year-to-year fluctuations caused by inclimate weather and budget fluctuations.

Per acre costs for reforestation can help identify trends in reforestation costs resulting from changes in resource management objectives, reforestation techniques, forest regulations, and organization structure/processes. This measure will be most useful in monitoring the costs of administering reforestation contacts and developing reforestation prescriptions to meet resource management objectives. Reforestation is carried out completely through competitively bid contracts.

Data is currently reported by DNR Division of Forestry annual reforestation accomplishment records. Computer reports from wood using industries and actual field measurements by DNR personnel are entered into the DNR's Timber Sales Reporting System. Reports are generated quarterly. Completion and implementation of the DNR Forest Development Module will provide the means to directly report the number of acres harvested rather. This will provide greater reliability than the current 20 cords per acre conversion factor.

Cost per acre information is provided by DNR Division of Forestry spending plans and annual reforestation accomplishment records (Forest Development Module), and Forestry Administrative Management System.

DISCUSSION OF PAST PERFORMANCE:

Slight deviations from the target of regenerating an area equal to area harvested each year can be attributed to limitations of the current method used to determine acres harvested. Availability of funding, adequate nursery planting stock and inclement weather during site preparation and planting seasons can also affect the degree to which performance measures are met. The division redirected a significant amount of staff time to its reorganization effort in FY 1993. This affected accomplishments in many areas, including reforestation. Acres harvested and subsequently requiring regeneration may also fluctuate due to forest products market fluctuations overall economic conditions.

Some reforestation costs will likely increase in the years ahead as management objectives and approaches change to address issues of sustainability and biodiversity. Inflation will also push reforestation costs upward. The accuracy of costs coded to reforestation are dependent on accuracy and consistency with which personnel use the cost coding and time reporting systems. As a result, cost-per-acre information is most useful in identifying trends rather than precise cost per unit information. Wet weather, and warm or extremely snowy winters can reduce the amount of site preparation and seeding/planting that can be accomplished. Reductions in planting/seeding will likely reduce expenditures and overall cost/acre figures.

PLAN TO ACHIEVE TARGETS:

Reforestation of state lands will continue to be accomplished through competitively bid contracts. Increased reliance on natural regeneration and acceptance of lower stocking and mixed species in areas planted or seeded could help balance projected reforestation cost increases. However, desired forest composition goals, and the need to increase timber productivity to meet increasing demands for wood will limit reliance on natural regeneration and stocking/species mix. The division has also unsuccessfully pursued statutory changes that would allow completion of some reforestation work through timber sales contracts.

The division recently reorganized from a four-level administrative structure (St. Paul, 5 Regions, 16 Areas, 66 Districts) to a three-level structure (St. Paul, 5 Regions, 39 Areas). Recognizing that it will take more than just physical restructuring to make the division successful in its rapidly changing environment, the division has broadened its approach to reorganization to include a review of strategic direction, redesign of work processes, technological improvements, training, and new decision making approaches (e.g., teamwork, empowerment, decentralization).

The division has been evaluating the administrative procedures of its programs to identify ways to gain efficiency and push decision making as far down the organizational hierarchy as possible. In February 1993, the DNR Division of Forestry assembled over 100 employees to develop recommendations that would allow the division's programs to operate more effectively and efficiently. The intent was to capture the improvement ideas of people who are responsible for the day-to-day work in carrying out division programs. As a result, nine Program Review Teams developed over 300 recommendations for improvement.

Implementation of the resulting recommendations is crucial to the division's ability to effectively deliver programs and services in the future. The division has made implementation of program review recommendations a priority. Program review teams have developed action plans to respond to each of the recommendations. Some of the recommendations require statutory changes.

The desired outcome is a three-level organization:

- designed and operated to enhance empowerment of individuals and teams. (More vision and mission driven focusing on principles and outcomes and less command and control driven focusing on process and procedures);
- with one administrative level essentially removed, thus improving communications and decision making, and reducing operating costs. Would eliminate one of the two mid-administrative levels of organization, where most perceived redundancies of supervision and review occur;
- that sets the stage for further administrative cost reductions through increased delegation of authority, elimination of many approval processes, and general improvements in the way we administer program.

OTHER FACTORS AFFECTING PERFORMANCE:

None.

Objective 2: Maintain harvest levels on DNR administered lands at or below long-term sustainable levels.

Measure (1): Thousands of cords of wood harvested from DNR administered lands annually.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	640	636				
Targets	674	620	672	680		
Sustainable			870	870		

DEFINITION, RATIONALE, DATA SOURCE:

A cord is a standard unit of measure of roundwood piled or on the stump. One cord is equal to 128 cubic feet. Cords harvested are measured and reported by wood-using industries through signed scaling agreements with the DNR, by actual field measurement of harvested wood by DNR personnel, and by accepted field appraisal methods.

State law (M.S. 89.002) directs the DNR to manage the forest resources of state forest lands according to the principles of multiple-use and sustained-yield. Forest resources are defined as the natural assets of forest land, including timber. Further direction and authority for the sale of timber from state land is provided to the DNR in M.S. Chapter 90. Timber harvesting on state lands includes: the design, appraisal, and sale of a harvest area; timber scaling to account for all wood harvested from state lands; and timber sale field inspections to assure compliance with timber sale permit regulations. Controlled timber harvesting from state lands is a forest management tool that: provides a method to alter forest composition, age, and structure to meet long-term objectives for wildlife habitat and wood fiber needs; helps assure a long-term sustainable supply of timber from state forest lands for generations to come; helps increase the growth rate of trees on state forest lands; and provides raw material to help meet Minnesota's wood fiber needs. The DNR determines annual "allowable" harvest levels based on long-term sustainable harvest levels.

This outcome measure directly demonstrates whether the DNR is maintaining timber harvests from state lands at long-term sustainable levels, and the state's contribution towards meeting society's wood fiber needs.

Computer reports from wood using industries and actual field measurements by DNR personnel are entered into the DNR's Timber Sales Reporting System. Reports are generated quarterly.

DISCUSSION OF PAST PERFORMANCE:

Budget dollars available for staff to do the field and administrative work associated with the sale of timber. Weather conditions (wet, warm winters will reduce the amount of timber that is accessible to be harvested). The demand for forest products such as paper and lumber, will determine the extent of planned timber harvests that take place on state lands. Additional and unanticipated rules, regulations, and legislation can affect the level of timber harvests from state lands. The projected sustainable level of harvest from DNR-administered lands will likely change over time due to new policies, regulations, and approaches to forest management.

PLAN TO ACHIEVE TARGETS:

Implementation of recently approved DNR Old-Growth Forests Guideline and Extended Rotation Forests Guideline will have some effect on long-term sustainable harvest levels from DNR administered lands. However, the degree of this effect is expected to be relatively minor and won't be known until the guidelines are implemented through ongoing regional planning efforts. Implementation of the water quality, wetland, visual BMPs will also have some effect on long-term harvest levels. Increased emphasis on uneven-aged management of some forest types may initially reduce the volume of timber available

from harvest on state lands. Chapter 551 from the 1994 Legislative session made a number of changes to state timber sale statutes to improve administrative efficiencies. Improvements to work processes will continue to be pursued in the next biennium to gain further efficiencies. Some may require legislation.

OTHER FACTORS AFFECTING PERFORMANCE:

Objective 3: Maintain harvest levels at or below projected long-term sustainable levels statewide across all ownerships. The long-term sustainable harvest level is estimated to be between 5 and 6 million cords/year.

Measure (1): Millions of cords of wood harvested.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	3.85					
Targets						

DEFINITION, RATIONALE, DATA SOURCE:

Estimate of total cords and cord equivalents of wood harvested from all ownerships in Minnesota.

A key factor in the sustainable output of a wide range of natural resources from Minnesota's forest lands is the ability to maintain forest harvests at or below a level that is considered sustainable over the long-term. It is important that this be measured across all ownerships to be effective.

Annual computer reports from wood using industries, annual agency timber harvest reports, periodic Forest Inventory and Analysis (Minnesota's statewide forest inventory).

DISCUSSION OF PAST PERFORMANCE:

The DNR only directly controls 21% of the timberland in the state. Government agencies control approximately 60% of the state's timberland. Influence on the remaining 40% of the timberland controlled by a large number of non-industrial private landowners is accomplished through technical and cost-share assistance provided by government agencies and private industry.

PLAN TO ACHIEVE TARGETS:

The division will continue analyzing resource and harvest information, and promote industry development within the limits of sustainable forest management. Efforts will focus on alternatives to reduce/minimize the potential for over harvesting in species that are reaching sustainable limits. Examples include: use of alternate species, changing industry utilization standards and improve processing technologies, and encouraging greater recycling and wood residue use.

Interagency and interdisciplinary land management planning will be key in defining and achieving long-term sustainable levels of timber harvests. This will be most feasible on public land ownerships. To facilitate interdisciplinary planning, the DNR recently shifted Division of Forestry regional planners under the regional administrators as department natural resource planners. The DNR has also entered into a memorandum of understanding with the National Forests in Minnesota to coordinate land management planning and resource information sharing.

OTHER FACTORS AFFECTING PERFORMANCE:

Objective 4: Designate at least 10% of DNR-administered timberlands as Extended Rotation Forests (ERF) by the year 2005.

Measure (1): Thousand acres of designated ERF on state lands.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual						
Targets				40		

DEFINITION, RATIONALE, DATA SOURCE:

Extended Rotation Forest is defined by the DNR as areas or specific sites that have been assigned a management prescription to lengthen the time to the ultimate harvest of the trees or stand. The draft DNR ERF Guideline recommends that a minimum of 10% of the timberlands administered by the DNR in each landscape be managed as ERF. The DNR Division of Forestry administers three (3) million acres of timberland.

The charge of sustained yield of forest resources contained in the 1982 Forest Resource Management Act includes forest resources such as fish and wildlife habitat, rare and distinctive flora and fauna, water, soil, recreation/aesthetic, and forest crops. ERF management will allow older forest stands to develop in meeting a variety of resource management objectives within landscape regions. ERFs make an important contribution to conserving biological diversity in Minnesota. Biological diversity conservation requires maintaining portions of forest communities in each successional stage. ERFs insure that an adequate acreage of forest older than rotation age are maintained on a continuing basis. ERFs will also be important in providing old-growth forest buffers, habitat for a wide variety of plants and animals, recreation/aesthetic values, and larger trees needed to meet sawtimber demands. ERFs will also help protect water quality, and conserve soil nutrients and maintain productivity on erodible sites.

DNR ERF Guideline, DNR Timber Management Planning Information System (TMPIS, completed once every 7-10 years), DNR Cooperative Stand Assessment (CSA, updated annually).

DISCUSSION OF PAST PERFORMANCE:

The identification and designation of forest stands to be managed as ERF must be done as part of the regional planning efforts being undertaken in each of the DNR's Regions. ERF will only be effective in addressing issues of sustainability and biodiversity if done in concert with the planning of forest composition goals, old-growth forests, and uneven-aged forests.

PLAN TO ACHIEVE TARGETS:

The recently approved ERF Guideline provides DNR resource managers with the means to identify and designate DNR administered timberlands to be managed as extended rotation forest. The Extended Rotation Forest Guideline is intended to be implemented primarily through a landscape-based DNR region planning process. The department will continue development of an ecological classification system (ECS) to delineate appropriate levels of landscapes for planning and management purposes. The department recently shifted Division of Forestry regional planners under the regional administrators as department natural resource planners to continue development of landscape-based natural resource management plans. The DNR has also entered into a memorandum of understanding with the National Forests in Minnesota to coordinate land management planning and resource information sharing. Coordinated planning among landowners is needed to achieve landscape-based management goals.

OTHER FACTORS AFFECTING PERFORMANCE:

Objective 5: Increase the percent of annual timber harvest on DNR administered lands conducted using uneven-aged management methods to 105 by the year 2000.

Measure (1): % annual timber harvest on DNR-administered forest lands conducted using uneven-aged methods

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual						
Targets						

DEFINITION, RATIONALE, DATA SOURCE:

Annual acres of timber harvest on DNR-administered forest lands using uneven-aged management methods divided by the total annual acres of timber harvest on DNR administered lands.

Over the period of 1990-1991, 94% of the acres harvested on DNR-administered lands was done using even-aged management methods, which encourage forest stands comprised of trees of relatively the same age (e.g., clearcut harvest, seed tree, thinning). The recently completed GEIS on Timber Harvesting and Forest Management in Minnesota recommends an increase in the use of uneven-aged management and a decrease in the use of clearcutting and other even-aged harvesting systems across all ownerships to address issues of sustainability and biodiversity.

Actual field measurements by DNR personnel are entered into the DNR's Timber Sales Reporting System. Reports are generated quarterly. This information is not currently tracked by the Division of Forestry, but could be with the implementation of a computerized forest development tracking system, and additional direction and priority given to field staff in reporting this information. The Division of Forestry is currently in the process of implementing the computerized Forest Development Module which has the capability to provide data for this measure.

DISCUSSION OF PAST PERFORMANCE:

The amount of uneven-aged management is limited by the acreage of covertypes amenable to this type of management. DNR forest inventory information for DNR administered lands show that approximately 10% of DNR timberlands are comprised of cover types (in whole or in part) that are generally amenable to uneven-age management (e.g., northern hardwoods, lowland hardwoods, ash, and a certain percentage of various other cover types). However, there are opportunities for uneven-age management in other cover types depending on the species composition, age, and condition of individual stands. In a 1992 summary of management prescriptions for DNR timberlands over a 10-year period, approximately 20% of the stands reviewed for treatment were recommended for all-aged (i.e., even-aged) management. Relatively few stands recommended for uneven-aged management have actually received any treatment to date. Uneven-aged management requires additional staff time that is rarely available given current staffing levels and other demands on staff time. The ability to increase the use of uneven-aged management is also somewhat dependent on forest industries' ability to adapt and develop new technologies.

PLAN TO ACHIEVE TARGETS:

The department will identify appropriate covertypes and areas for uneven-aged management through the use of forest inventory information, desired future conditions (forest composition goals) developed through landscape-based regional planning, and available ecological classification system (ECS) information. A limited number of stands recommended for uneven-aged management through the existing Timber Management Planning Information System (TMPIS) have received treatment over the past four years through a department hardwoods initiative. The department has contracted with outside consultants to do this when dollars have been available. In the past two years, department staff have conducted or attended hardwood management workshops for forest managers. Another similar workshop is scheduled for FY 1995. Light-on-the land logging equipment will be field evaluated through a cooperative effort with the U.S. Forest Service, the DNR, and loggers. The extent of these evaluations will depend on available funding. Field evaluation of this equipment is needed to assess the feasibility and effectiveness of this equipment for uneven-aged management, thinning, and on sensitive sites to reduce impacts to soils and the remaining forest vegetation.

Objective 6: Increase adoption and use of Water Quality and Wetland Best Management Practices for forest management to 90% on professionally managed forest lands by the year 2000 and 85% on non-industrial private forest lands by the year 2005.

Measure (1): Percent compliance with BMPs on professionally managed forest lands.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	88	88				
Targets			86	87		

Measure (2): Percent compliance with BMPs on non-industrial private forest lands.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	78	78				
Targets			74	76		

DEFINITION, RATIONALE, DATA SOURCE:

The forestry community in Minnesota has adopted voluntary Best Management Practices for forest management activities to address nonpoint-source (NPS) pollution to surface and ground water from forest management. The DNR Division of Forestry coordinates annual field audits of compliance with the BMPs across all categories of ownership. Voluntary wetland BMPs are currently in their final stages of development and will be implemented over the next year or two.

The 1982 Forest Resource Management Act defines forest resources to include, among other things, water. Section 319 of the federal Clean Water Act includes a mandate for states to develop a program to control NPS pollution. Minnesota identified four land uses where NPS control efforts were needed: agriculture, mining, urban development, and forestry. The Water Quality BMPs have been accepted by the MN Pollution Control Agency and the federal Environmental Protection Agency as an appropriate program to address NPS pollution associated with forest management. The Water Quality and Wetland BMPs are based on research and knowledge from across the region and country, and are accepted by the professional forestry community in Minnesota. BMP Field Audit results provide a cost-effective, surrogate measure of water quality. A surrogate measure of water quality has been used because of the extremely high costs involved with direct water quality measurements and the limited ability to isolate the effects of forest management practices on water quality from other sources of water pollution (e.g., agriculture, urban run-off, mining, point sources, etc.).

Forestry BMP Field Audit Process (Coordinated by DNR Division of Forestry).

DISCUSSION OF PAST PERFORMANCE:

The DNR directly controls only 21% of the timberland in the state. Compliance with BMPs on other ownerships depends on their willingness to participate. The DNR uses information from the field audits to focus education efforts and technical assistance. There results also provide an effective means of targeting limited resources towards areas of concern. Continuation of BMP field audits and education efforts is dependent on continued funding. Reductions in or elimination of field audits or education efforts will reduce the effectiveness and reliability of BMP in protecting water quality and wetlands. Compliance with BMPs may decline over the next couple years before rising towards the targeted goals because of the additional complexity introduced with the implementation of wetland BMPs.

PLAN TO ACHIEVE TARGETS:

The department will continue to focus education of loggers, landowners, and resource managers based on areas of concern identified through the BMP audit process. The Division of Forestry has reallocated a significant amount of staff time over the past 4 years to the development, implementation, and monitoring of water quality and wetland BMPs. This commitment will continue indefinitely and will likely need to expand due to the expansion of BMPs to address wetland concerns. Expansion of the number of field audits will be commensurate with funding levels. As a result of the Generic Environmental

Impact Statement for Timber Harvesting in Minnesota (MN EQB, April 1994), there will likely be an effort to develop comprehensive forest management guidelines using a process similar to that used to develop the existing BMPs. Implementation and monitoring of comprehensive guidelines will require expanded education and audit efforts.

OTHER FACTORS AFFECTING PERFORMANCE:

Objective 7: Maintain a satisfaction rating of 90% or more for state forest campground users.

Measure (1): Percent of state forest campground users satisfied with services provided.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual						
Targets				90%		

DEFINITION, RATIONALE, DATA SOURCE:

The 1989 survey of registered campers was administered by the Division of Forestry recreation staff from St. Paul and field offices. Surveys were handed out by DNR personnel at all state forest campgrounds. The number of surveys handed out at each campground was proportionate to the percentage of total state forest campground receipts collected at each campground in 1988. The survey asked a number of questions about state forest campground users. One question asked campers to rate their overall satisfaction with the campground from "exceeded expectations" to "very dissatisfied." Ninety-four percent were "mostly satisfied" or better.

The Outdoor Recreation Act of 1975 (M.S. 86A) includes state forests and state forest subareas as important components of the state's outdoor recreation system. The statutes define state forest subareas as campgrounds and day-use areas. The Division of Forestry currently administers 46 state forest campgrounds. M.S. 86A further directs state forest campgrounds to provide minimum facilities to accommodate overnight camping. The minimum facilities provided by state forest campgrounds fill a specific niche in Minnesota's outdoor recreation system. They provide recreational opportunities not often found with other public and private recreation facilities: more "rustic" camping/outdoor experiences at facilities that are less developed (e.g., no electrical hook-ups, or dump stations for RV's). The satisfaction of campers seeking this type of experience is true measure of how well the Division of Forestry is fulfilling its role in the state's outdoor recreation system.

Periodic survey of state forest campground users conducted by the DNR. The initial survey was completed in 1989. The division plans on redoing the survey in 1995 and approximately every five years thereafter. The survey cost approximately $5,000 in 1989 including staff time, survey printing, and analysis of results.

DISCUSSION OF PAST PERFORMANCE:

Most of the state forest campgrounds were constructed in the late 1960's and early 1970's (some as early as the 1930's). Until this past year, the division has not received any funding for recreation facility rehabilitation or development since 1985. Over the past several years, expenditures on state forest recreation facilities have been limited to operation and general maintenance. As a result, some facilities have deteriorated below "acceptable" levels. However, this does not appear to have affected the use of state forest campgrounds. Camper nights for the 1993 camping season were 83,046, off by about 3,500 visitors from 1992 due to the wet cool summer. Otherwise, state forest campground usage has steadily increased since 1986 (see chart).

The 1990 State Comprehensive Outdoor Recreation Plan predicts that demand for most recreational activities will increase significantly on state forest lands in the years ahead. What affect inadequate levels of funding have had on user satisfaction will not be known until the survey is re-done hopefully in 1995.

Future funding levels for rehabilitation, maintenance, and operation will have a direct impact on the level of user satisfaction with state forest campground facilities. Weather can also have a significant affect on the level of state forest campground us and the quality of campground users' experience.

PLAN TO ACHIEVE TARGETS:

The division has worked to streamline procedures to reduce staff time spent on campground fee collection. The division implemented a variable fee system to distribute campground use throughout the state forest campground system and lessen impacts at more popular campgrounds. The variable fee system charges smaller fees at our least used campgrounds. To reduce costs, the Division of Forestry has joined together with the Division of Parks and Recreation in soliciting bids and purchasing picnic tables, fire rings, and vault toilets. The division has also requested funds from the Department of Administration's Access '92 capital bonding fund to upgrade state forest campgrounds for handicapped accessibility.

OTHER FACTORS AFFECTING PERFORMANCE:

Objective 8: Increase the amount of non-industrial private lands that receive professional forestry assistance in planning and carrying out tree planting, habitat improvement, and timber harvesting.

Measure (1): 1000's of acres of non-industrial private forest land activities accomplished under the guidance of Woodland Stewardship plans with professional forestry advice and assistance.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	33.4	25.0	24.0(e)			
Targets	29.7	26.9	23.9			

DEFINITION, RATIONALE, DATA SOURCE:

Acres of non-industrial private land that is reforested, harvested, or improved according to a professionally prepared Woodland Stewardship plan.

Since 1947, state law has authorized the DNR to provide forest management services to private forest land owners whose ownership does not exceed 1,000 acres. State law defines these management services to include "advice in management and protection of timber, selection and marking of timber to be cut, measurement of products, aid in marketing harvested products, and such other services as the DNR deems necessary or advisable to promote maximum sustained yield of timber."

Approximately 5.9 million acres (40%) of Minnesota's timberland is in private ownership. The potential productivity of these lands typically is greater than the average for other forest ownerships in Minnesota, and they are capable of providing a diversity of resource benefits. It is therefore important that the DNR ensure that the technical and cost-share assistance needed to continue the stewardship and productivity of these lands is available.

DNR Division of Forestry Cooperative Forest Management Reporting System. Data is collected quarterly.

DISCUSSION OF PAST PERFORMANCE:

Reforestation, habitat projects, and timber stand improvement on private forest lands are quite dependent on the availability of state and federal cost-share funding. For example, federal and state agricultural land retirement programs (e.g., Conservation Reserve Program (CRP), Reinvest in Minnesota (RIM)) have greatly affected levels of tree planting since 1985. Reforestation and TSI levels are also affected by the degree of landowner interest and ability to pay. Opportunities for reforestation may increase in 1994/95 due to a CRP provision allowing the continuation of lease payments for 5 years for landowners who convert CRP grasslands to trees. Accomplishments may also be affected by the number and severity of wildfires both in-state and out-of-state, the suppression of which at times can divert significant staff time away from PFM activities. The division's reorganization which began in FY 1993 will likely continue to affect accomplishments through FY

1995. Program emphasis on generating landowner interest and commitment to ecologically sound forest management through the preparation of Woodland Stewardship plans also became a factor with the 1990 federal farm bill. Accomplishments should reflect the increased landowner interest as they begin to implement these plans. Reforestation levels will depend on the availability of nursery planting stock and weather conditions during site preparation and planting seasons. However, the influence of programs such as CRP has the largest influence. Forest products market fluctuations and overall economic conditions will also influence the amount of timber harvesting on private lands, the subsequent need for reforestation, and landowner interest in investing in reforestation.

PLAN TO ACHIEVE TARGETS:

If changed, property tax laws could become a strong incentive to encourage stewardship of non-industrial private forest lands. The department will continue to pursue changes to existing property tax laws, including revision of the Minnesota Tree Growth Tax Law, and creation of a new 2g property tax classification that would provide favorable tax rates for landowners who manage their forest lands following a management plan approved by the commissioner.

Implementation of program review recommendations for the PFM program will continue, including: further automation of Stewardship plan preparation; targeting of technical assistance; and encouraging the use of consulting foresters and partners to provide assistance where needed and appropriate.

Partners will include some providing direct assistance to landowners in coordination with the Division. These currently include private sector forest consultants, the US fish and Wildlife Service, 6 Soil and Water Conservation Districts, The Nature Conservancy, DNR-Section of Wildlife, and Potlatch paper corporation. Indirect assistance is also provided from partners such as the MN Extension Service, the Soil Conservation Service, the Agricultural Conservation and Stabilization Service, the Board of Water and Soil Resources, The Audubon Society, and others.

OTHER FACTORS AFFECTING PERFORMANCE:

Objective 9: Reduce the number of oak wilt infection centers below 1.0 per square mile in 75% of a seven county metropolitan area by the year 2000.

Measure (1): % of 7 county metro area with fewer than 1.0 oak wilt infection centers/ square mile.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual			15%(e)			
Targets	n/a	n/a				

DEFINITION, RATIONALE, DATA SOURCE:

Percent of total land area in a seven county area that has less than 1.0 identified oak wilt infection center per square mile. The seven counties included are: Anoka, Chisago, Dakota, Isanti, Ramsey, Sherburne, and Washington. One or fewer infection centers per square mile is considered to be the level at which communities can maintain oak wilt suppression efforts without outside assistance.

Oak wilt is the major tree killing disease in the Minnesota's urban areas. Reducing oak wilt infection levels is important in maintaining or increasing the amount of urban area under tree cover since oak is a significant component of the urban forest in the metropolitan area. In some of the northern and eastern counties of the metro area, oak comprises as much as 75%-90% of forested land. Oaks are also the most valuable species in the urban forest. They are long-lived, and structurally sound trees that contribute greatly to the urban environment. They are major providers of shade for energy conservation, aesthetics, property value, and a major provider of food for common urban wildlife species of deer, squirrels, and birds. Over 9,000 acres of oak have already been destroyed by oak wilt in seven county area.

DNR Division of Forestry Cooperative Suppression Program data base. Oak Wilt Annual Reports.

DISCUSSION OF PAST PERF[illegible]ANCE:

A five-year federally sponsored pro[illegible] ends in 1995. The federally sponsored project will have treated 3,000-4,000 of 6,255 active oak wilt infection centers in [illegible]e northern and eastern metropolitan area. Prior to the federal project, there was an average of 1.78 oak wilt infection ce[illegible]ters per square mile in the federal project area (i.e., the seven counties named above). As a result of the federal project, nearly 3/4 of the project area will have oak wilt infection levels less than 1 center per square mile. Success of the program depends on the willingness of communities to participate in the federal cost-share program. Some communities have chosen not to take full advantage of this program. Oak wilt in these communities continues to expand. Failure to continue oak wilt suppression assistance for another 2-4 years could mean that as many as 30 communities in the federal project area might experience a rebound in oak wilt infection above those levels found prior to the federal project within as little as 5 to 10 years.

PLAN TO ACHIEVE TARGETS:

Oak wilt suppression assistance to communities needs to be continued for two to four years to lower oak wilt infection levels below 1 C/SM over the entire federal project area, plus expand the project area. The division has proposed an initiative to continue oak wilt suppression in the current project area plus expand the project area to include three additional metropolitan counties and critical communities in southeastern Minnesota.

OTHER FACTORS AFFECTING PERFORMANCE:

Objective 10: The median size of wildfire reported to or suppressed by the DNR will be 5 acres or less.

Measure (1): Median size of wildfires reported to or suppressed by the DNR.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	1.0	1.0				
Targets			5.0	5.0		

Measure (2): Number of wildfires reported to or suppressed by the DNR.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	1,401	1,363	1,438			
Targets	1,928	1,856	1,811	1,800		

Measure (3): Acres burned by wildfires reported to or suppressed by the DNR.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	27,434	18,925	19,272			
Targets	66,993	60,984	56,349	56,000		

DEFINITION, RATIONALE, DATA SOURCE:

Chapter 328 of the 1993 Laws of Minnesota defines a wildfire as "a fire requiring suppression action, burning any forest, brush, grassland, cropland, or any other vegetative material." These measures include wildfires that the DNR was actively involved in suppressing as well as wildfires suppressed by fire departments that were reported to the DNR. A running average is used to establish measure objectives because of unpredictable year-to-year fluctuations caused by varying weather conditions.

By state laws, the DNR is responsible for the prevention and suppression of wildfires in Minnesota's forested counties: an area encompassing 45 million acres of public and private land. Measuring the median provides a means to determine how well the DNR is doing at reducing the size of wildfires. The size of wildfires is a function of the effectiveness of detection efforts and the response time of suppression forces. Median is a better indicator than the average size of wildfires because averages can be extremely biased by single occurrences of very large wildfires. The objective is to keep as many fires as possible below five (5) acres in size. Median provides a better indication of this. Five acres is the chosen threshold because above this size, wildfires become more difficult and costly to suppress.

DNR fire suppression data is collected by the DNR Division of Forestry through its Fire Reporting System. Data is reported weekly, with year-to-date summaries produced monthly. However, the median size of wildfires is not currently provided by the reporting system. The current reporting system also does not capture a significant number of wildfires that are suppressed by local fire departments and which are never reported to the DNR. The DNR is currently working with local fire departments to develop a simple, effective system to report these fires to the DNR.

DISCUSSION OF PAST PERFORMANCE:

Weather conditions play a large role in determining the number and size of fires in any one year. Expanding population centers will also increase the frequency of fires, and the threat to life, property and natural resources. To adequately protect property and life in and around these expanding population centers, the median size of wildfires will have to be maintained below five (5) acres. As a result, wildfire suppression needs in these areas will increase and increase the overall cost of wildfire suppression in the state.

PLAN TO ACHIEVE TARGETS:

The DNR hopes to achieve long-term efficiencies in wildfire protection through increased investments in wildfire prevention and presuppression efforts. The division recently filled Fire Prevention Specialist and Rural Fire Programs Coordinator positions to direct increased fire prevention efforts and increased partnerships, training, and preparedness of rural fire departments in wildfire suppression. These increased "preparedness" efforts should result in an overall reduction in the number and size of wildfires in the state.

OTHER FACTORS AFFECTING PERFORMANCE:

Objective 11: Maintain or decrease the average dollar value of property lost per wildfire.

Measure (1): Average dollar value of property lost per wildfire.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	$1,066	$283				
Targets	$567	$532	$530	$530		

DEFINITION, RATIONALE, DATA SOURCE:

Estimated total property value lost (in dollars) divided by the total number of wildfires reported to or suppressed by the DNR. Property includes sheds, barns, residences, vehicles, farm implements, timber, etc. Property value losses are estimated by DNR staff.

By state law, the DNR is responsible for the prevention and suppression of wildfires in Minnesota's forested counties: an area encompassing 45 million acres of public and private land. The goal of the DNR Wildfire Protection Program is to provide wildfire protection to the level necessary to avoid loss of life and, considering the values at risk, minimize the potential for loss of property and natural resources on public and private land. Measuring structure lost as a percentage of total structures threatened is a better indicator of program effectiveness because of the variability and dependency of wildfires

on presiding weather conditions. Also, as urban areas expand, so does the number of wildfires, the number of structures, and the resulting threat to structures.

DNR fire suppression data is collected by the DNR Division of Forestry through its Fire Reporting System. Data is reported weekly, with year-to-date summaries produced monthly. Value of property lost is currently recorded but not reported by the current reporting system. The value of this measure depends on the accuracy and consistency with which DNR staff estimated the value of property losses. The reporting system also does not capture a the property value losses from wildfires that are suppressed by local fire departments and which are never reported to the DNR. The DNR would need to work with local fire departments to develop a simple, effective system to report these fires and related property losses.

DISCUSSION OF PAST PERFORMANCE:

Weather conditions play a large role in determining the number and size of fires in any one year. The resulting threat to property can also be affected. Expanding population centers will also increase the frequency of wildfires, the threat to human life, the value of property and natural resources at risk from wildfires. As a result, maintaining the property value loss per fire will be a real challenge.

PLAN TO ACHIEVE TARGETS:

See previous objective (#10).

OTHER FACTORS AFFECTING PERFORMANCE:

Objective 12: 100% of class 1-4 state forest roads will meet DNR Forest Road design standards by the year 2000.

Measure (1): Percent of state forest roads meeting state forest road design standards.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual						
Targets						

DEFINITION, RATIONALE, DATA SOURCE:

Class 1-4 state forest roads are gravel surfaced and regularly maintained state forest road classes.

State law directs the DNR to provide a system of forest roads and trails which provides access to state forest land which is adequate to permit the commissioner to manage, protect, and develop those lands. The DNR maintains over 2,000 miles of state forest roads that serve 4.5 million acres of state forest land. These roads also serve several million acres of county, federal, and private forest lands. In a recent study of the traffic on state forest roads in Minnesota, over 95% of total state forest road use was found to be for recreational purposes. In addition, some 2500 loggers and 15 major wood-based industries benefit from a safe, well maintained state forest road system. This performance measure provides a means to determine the degree to which state forest roads are being maintained to standards that provide for the safety continued use and safety of all users.

The DNR does not currently track this information. An initial survey of all field offices would be required to determine the present status of class 1-4 forest roads. Following the initial survey, a reporting system would have to be established to track changes in forest roads as reconstruction/construction takes place or if the condition of roads deteriorates below standards. Ideally, state forest roads should be resurfaced (gravel) every 15 years and reconstructed every 30 years. However, the DNR does not currently have a data base for tracking or scheduling resurfacing and reconstruction on state forest roads. In addition, annual needs to accomplish the resurfacing/reconstruction cycles have been extremely inadequate over the past 8-10 years ($1.8 million annual capital funding need, $300 capital bonding approved by the Legislature in 1994).

DISCUSSION OF PAST PERFORMANCE:

Weather conditions can affect maintenance and resurfacing needs. Limited budgets for maintenance can hasten the deterioration of state forest roads, and increase resurfacing and reconstruction needs. Capital funding levels will determine the amount of reconstruction/resurfacing that can be accomplished, and as a result, how well the DNR meets its stated objective.

PLAN TO ACHIEVE TARGETS:

Limited capital bonding appropriations will require additional seasonal closings of some state forest roads to slow down deterioration. Without adequate funding in the future, projected targets will not be feasible.

OTHER FACTORS AFFECTING PERFORMANCE:

Objective 13: Produce 14 million high quality, low cost, native tree and shrub seedlings each year in a ratio of 50% conifers and 50% other species by the year 2000.

Measure (1): Millions of trees and shrubs produced and sold by DNR nurseries.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	14.5	13.2	11.4			
Targets	32.2	24.2	17.7	14.0		

Measure (2): Ratio of conifer seedlings to other seedlings produced by DNR nurseries.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	80:20	70:30	70:30			
Targets				60:40		

DEFINITION, RATIONALE, DATA SOURCE:

Tree and shrub seedlings produced, procured, sold, and distributed by DNR nurseries located at Willow River and Badoura. Ratio of total conifer seedlings produced to total hardwood trees/shrub seedlings produced expressed as a percentage of total seedling production.

Minnesota statutes (M.S. 89.36) authorizes the DNR to produce tree planting stock for the purpose of auxiliary forests, woodlots, windbreaks, shelterbelts, erosion control, soil conservation, water conservation, provision of permanent food and cover for wildlife, environmental education, and afforestation and reforestation of public and private lands of any kind. The focus of the DNR nurseries is to produce high quality, Minnesota seed source, Minnesota grown seedlings at a competitive price for conservation programs in the state. Most of the conservation programs in the state require that overall reforestation accomplishments be split 50:50 between conifers and other species. Measures of quality, low cost, and the degree to which DNR nurseries are producing native species are not developed enough at this point to include in this report, but will be pursued as improvements in future reports.

DNR nurseries sales reports and annual spending plans.

DISCUSSION OF PAST PERFORMANCE:

Seedling production and sales is dependent on the demand from public and private landowners. Decreasing forest development budgets for and increased reliance on natural regeneration by public land managers has precipitated a decline in tree sales. Private landowner interest in tree planting is directly related to the availability of state and federal cost-share funding, and the cost of tree seedlings. Federal cost-share funding has fluctuated overtime according to cycles in major federal initiatives (e.g., CRP, Forest Stewardship). The 1982 Forest Resource Management Act (M.S. 89.06) required the DNR to submit to the legislature a plan describing the benefits and costs of making the DNR Nursery and Tree Improvement Program self-supporting. The nurseries became self-supporting in FY 1985. The cost of tree seedlings produced by DNR nurseries have been increasing because of increased operating costs and this requirement to be self-supporting. Increased competition from private nurseries producing containerized seedlings will also affect DNR nursery sales.

PLAN TO ACHIEVE TARGETS:

The DNR has reduced supervisory levels and costs in order to control operating expenses. In addition, nursery staff are reallocated to other division programs according to seasonal demands of the nursery program. The division has taken a number of steps to increase the ease and flexibility of ordering tree seedlings. Legislation passed during the 1994 session removes the limit on the number of species and the minimum number of trees that can be acquired from other states or the federal Government (MS 89.36, Subd. 3). This will enhance the DNR's ability to cooperate with state and federal nurseries in adjacent states in the growing and sale/exchange of tree seedlings. Cooperation between nurseries allows each nursery to concentrate on species they are particularly well-suited to grow, or that are in high demand in their locale. Through increased cooperation, DNR nurseries will benefit from economies of scale for species they grow well. DNR nurseries' will continue to diversify product lines to meet customer needs. Marketing efforts will be focussed on traditional sales outlets (e.g., DNR field stations, Soil and Water Conservation District offices, county cooperative offices).

OTHER FACTORS AFFECTING PERFORMANCE:

Objective 14: Maximize, within available funding, the number of youth and young adults who receive meaningful natural resource work and training experience through the DNR Office of Youth Programs.

Measure (1): Number of youth and young adults enrolled each fiscal year through DNR Office of Youth Programs.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	341	302	359			
Targets			301	308		

Measure (2): Percent of enrollees who feel DNR's youth programs helped them learn or strengthen good work habits, and provided work that was worthwhile and important to the state and its resources.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual						
Targets			85	85		

DEFINITION, RATIONALE, DATA SOURCE:

The number of Minnesota youth and young adults enrolled through the three components of the DNR Office of Youth Programs:

- Minnesota Conservation Corps (MCC) "Summer Youth" component. This is an eight week program for youths age 15 to 18 years. This program is conducted at a camp located at St. Croix State Park.

- Minnesota Conservation Corps "Young Adult" component. This is a year-round program for young adults age 18 to 26 years. The number of enrollees is based on an average of six months of service.

- Youth in Natural Resources component. This is an eight week program targeted at youth of color, ages 15 to 18 years. Designed as a natural resource career exploration program. Program groups are formed in Twin Cities, Mille Lacs, and Leech Lake areas.

The number of enrollees who respond positively to certain questions on the DNR youth program exit survey divided by the number of enrollees members who respond to the surveys.

The mission of the Office of Youth Programs is mandated by state law (1992 Laws of MN, Chapter 513, Article 2, Section 20; and 1989 Laws of MN, Chapter 335, Article 1, Section 84.98). In fulfilling that mission, the office provides employment and career exploration opportunities to youth and young adults, ages 15-26, while accomplishing significant natural resource conservation and management work.

Participants engage in meaningful service-learning projects. They receive on-the-job training, experience, and education with an aim to develop work maturity, self management, reasoning, and decision making skills, self esteem, and an appreciation for the natural world. Participants performed in excess of 200,000 hours of project work in FY 1992.

Although the use of an exit survey is subjective, it does provide a good measure of how well the program satisfied its customers (i.e., program participants) in regards to the stated program goal (providing meaningful natural resource work and educational experience).

DNR Office of Youth Programs' cost code Employee Hours by Activity Report, and MCC Exit Survey.

DISCUSSION OF PAST PERFORMANCE:

The level of funding received from the state legislature and leveraged from other sources will continue to directly affect the number of youth and youth adults employed in these programs. Other factors affecting the programs include: evolving program models and mandates dictated by federal, state, and private funding sources; timely hiring and placement of participants by host agencies; inflation; and worker compensation payments.

PLAN TO ACHIEVE TARGETS:

Changes in operations will directly affect the programs' ability to meet previously planned performance targets. Changes include: 1) Receipt by MCC of $574,000 in federal funds to assist southwestern Minnesota with flood recovery. Several additional young adult MCC crews are engaged in clean-up efforts; 2) Restructuring of Twin Cities portion of Youth in Natural Resources component. Individualized internships have replaced team oriented format. While fewer youth can be accommodated by the internship model, natural resources career exploration will be enhanced; 3) Restructuring of MCC young adult component budget to absorb the cost of recently enacted health insurance and post-service education/incentive award program. The young adult component will also create additional 12-month enrollment slots (as opposed to current seasonal slots) thus reducing the aggregate number of young adults enrolled in a given fiscal year, while providing a value added training experience.

OTHER FACTORS AFFECTING PERFORMANCE:

SUMMARY

AGENCY: **Natural Resources, Department of**
PROGRAM: **04 - Parks and Recreation Management**

EXPENDITURES AND STAFFING (F.Y. 1994)

($ in Thousands)

Total Expenditures:	$	**26,024**
From State Funds	$	25,676
From Federal Funds	$	348
Number of FTE Staff:		423.7

PROGRAM GOALS:

- To preserve, manage and promote Minnesota state park's natural, scenic and cultural resources utilizing integrated resource management practices when appropriate. (Chapt. 86A.02, Chapt. 86A.05 subd. 2 &3).
- To reduce the occurrence of environmental degradation and enforcement problems to ensure access for present and future generations. (Chapt. 86A.05 subd. 2).
- To improve and ensure access to appropriate recreational opportunities. (Chapt 86A.02 subd. 1).
- To improve and ensure access to environmental educational opportunities.(Chapt. 86A.05 subd. 2, Chapt. 126A)
- To improve and ensure sufficient and stable funding to provide these services. (No specific statutory authorization.)

DESCRIPTION OF SERVICES:

The mission of the Minnesota State Park System is: To provide a state park system which preserves and manages Minnesota's natural, scenic and cultural resources for present and future generations while providing appropriate recreational and educational opportunities. This program provides for the management, maintenance, operation and development of 230,600 acres of outstanding natural resources. The division also provides law enforcement, operates and leases concessions, provides night security services, conducts environmental education and interpretive programs for park visitors, and manages parks' natural resources.

BACKGROUND INFORMATION:

MEASURES OF ACTIVITIES (A), WORKLOAD (W), UNIT COSTS (UC), OTHER DATA (O)

Type	Measure	F.Y. 1993	F.Y. 1994
	Park Operations		
A	No. of visitor occasions to state parks (millions)	7,492,000	n/a
A	No. of overnight guests	778,000	n/a
W	No. of full-time people	227	230
W	No. of seasonal & part-time employees	540	550
W	No. of needy/elderly employed by Greenview Inc.	40	40

	Interpretive Services		
A	No. of programs offered	6,800	n/a
A	No. of program visitors	166,000	n/a
	Land Acquisition and Development		
W	No. of state parks	65	65
W	No. of state recreation areas	2	2
W	No. of state waysides	11	11
W	Acres of park land to manage	230,600	230,708
A	No. of acres acquired	4,000	108
W	No. of campsites	4,000	4,000
W	Miles of trails	900	900
W	No. of picnic areas	93	93
W	No. of buildings	1,600	1,600
W	Miles of roads	260	260

PROGRAM DRIVERS:

- **Increases in Operations Costs.** The average cost to operate a state park is about $275,000 annually; individual park operation costs range from $25,000 to $1.6 million. The park that costs $1.6 million to operate, Itasca, generates $1.5 million in revenue annually. State parks generate about $5.9 million per fiscal year in fees (from park permits, camping fees, merchandise sales profits and associated sales tax); this represents approximately one-third of the system's annual operating budget. State parks will be expected to direct limited resources to highest priority programs, to redesign and restructure programs and service delivery to benefit our customers and stake holders, and to improve efficiency.

- **Greater Emphasis on Physical Fitness and Outdoor Recreation.** In 1993, the DNR Information Center answered 18,726 State Park calls (14% of total calls received). Customers were seeking information on reservations, camping, interpretive programs and hiking. The Information Center carries 157 Parks brochures, and distributed 55,283 through the mail and over the counter. Participation in appreciative outdoor recreation activities like hiking and camping is a valuable predictor of environmental concern - outdoor recreation participation is positively associated with environmental concern (Bikales, Manning 1990). Geographic access to outdoor recreation facilities is an important issues throughout Minnesota, with the heaviest demand being in the Twin Cities Metro area.

- **Aging Population.** The largest growing segment of the population between 1993 and 2010 will be persons 40 to 60 years old. In the Journal of Gerontological Nursing, Moore (1989) finds that the benefits of regular physical activity (e.g. walking for seniors) include: improved cardiopulmonary function, lowered blood pressure, increased bone mineral content, increased muscle strength, and joint flexibility and improved psychological well being. Older people often experience a loss in aerobic power (oxygen uptake) which can have debilitating effects. In a longitudinal study, it was concluded that habitual exercise can be effective in preventing, or slowing this decline (Kasch et al.:1990). State Parks need to respond with increased efforts to accommodate this group, such as more park benches along trails, interpretive programs catered to their interests and volunteer opportunities.

- **Changing "Family" Structures.** More households have two working parents, making it more difficult to find compatible timetables for recreation. There is also a significant increase in single parent families and varied "family" groupings. Couchman (1988), in his extensive work with families, states that leisure is the single most important force developing cohesive, healthy relationships between husbands and wives, and between parents and their children. State parks need to take the lead in making recreation easy and accessible for all types of families by pursuing camping options such as: camper cabins, furnished campsites, double campsites, opportunities for groups to be near each other and provide facilities where everyone can feel "safe".

- **Emergence of New Recreational Opportunities.** Recent recreation trends which have put pressure on Minnesota State Parks include roller blading, skate skiing, mountain bikes, jet skies, and ATV's. In a review of literature on leisure and mental health, Westland (1991) refers to research by Kooher (1971) that suggests "learning new skills (in leisure) improved one's self-esteem because of an increase in the sense of competence". State Parks need to evaluate new recreation trends in a timely manner in order to determine if they are appropriate recreational activities for state parks and recognize the costs of land, facilities, maintenance, and enforcement that these new activities may generate.

- **Increased Emphasis on Accessibility.** The 1990 Americans with Disabilities Act (ADA) sets guidelines for accessibility to buildings and facilities by individuals with disabilities. These guidelines are to be applied during the design, construction, and alteration of buildings and facilities. Outdoor adventure activities for people with limited physical ability give participants feelings of success and improved feelings of confidence (Searle (1989). In 1993 park managers, naturalists and technicians were trained on how to implement the ADA program. State Parks needs to increase efforts to ensure that this population group has access to quality outdoor recreation and environmental education opportunities.

- **Increased Emphasis on Integrated Resource Management.** Teams, partnerships and stake holder involvement projects have demonstrated significant success, and we need to build on these models, finding more effective ways to involve our constituents and local governments in resource management.

AGENCY: Natural Resources, Department of
PROGRAM: Parks and Recreation Management

OBJECTIVE, MEASURE

Objective 1: To manage state park natural, cultural, archeological and historical resources with the context of Minnesota's ecosystems.

Measure (1): Continue to increase the amount of state park lands maintained in its Desired Future Condition.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Acres maintained	--	--	--			
Targets	n/a	n/a	n/a	unknown	unknown	unknown
Parks analyzed	--	--	--			
Targets	n/a	n/a	n/a	2	4	6

DEFINITION, RATIONALE, DATA SOURCE:

Minnesota State Parks protect some of the most significant natural resources in the state. To measure how well they are being managed, it will first be necessary to develop baseline data that identifies Desired Future Conditions for the communities in each park. This is a large task that will require significant staff time to complete, but once completed, targets can be established and the division's performance can be measured.

Completed natural and cultural inventories for state parks will provide baseline information of plant and animal species, communities, special features, and cultural resources. The Natural Resource Program Supervisor will maintain records of inventories being conducted in State Parks. The inventories will be completed through contracts with the MN County Biological Survey unit of the DNR, the University of MN, the MN DNR, and other sources. Cultural resource inventories will be conducted under the direction of Parks and Recreation and documented by the State Park Archeologist.

Much of the resource management necessary is a result of human disturbance. Changes in natural ecosystems that are a result of human disturbance often require intervention to return these systems to healthy states. Examples of disturbances that impact a park's natural resources include nearly 8 million visitors annually that demand increased and more intense and diverse use of parks, road construction, utility installation, and park facility development. In addition, many problems are caused indirectly through such means as the introduction of exotic species. Healthy ecosystems are necessary for natural resources to be adequately protected and preserved for future generations. Natural resource projects conducted in parks assist in restoring and maintaining park resources.

DISCUSSION OF PAST PERFORMANCE:

Many resource actions are being carried out through the state to address clearly identified needs. Even though collection of resource inventories has been accelerated during the past 2 years, accurate data at the desired level of detail is currently available at only a few state parks.

PLAN TO ACHIEVE TARGETS:

Accelerated funding will be necessary to adequately inventory park resources and to manage these resources effectively. Present funding levels would allow us to identify Desired Future Conditions based on ecosystem and landscape needs for two parks each year.

OTHER FACTORS AFFECTING PERFORMANCE:

Project completion is dependent on existing funding. Cultural and resource management will continue to rank high on the division's priorities, however, the increased cost of operating and maintaining parks may not allow for desired results. The County Biological Survey currently being conducted state-wide, with more concentrated work being focused in State Parks,

is dependent on biennial legislative funding. Cultural inventories are currently done primarily in conjunction with development projects. Additional and stable funding for resource inventories is not available but will be sought.

Measure (2): The number of Integrated Resource Management projects state park staff are involved in will increase.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Number of projects	n/a	59	n/a			
Targets				70	75	80

DEFINITION, RATIONALE, DATA SOURCE:

Many natural resource issues cannot be adequately addressed within the confines of a state park. Some can only be addressed by the coordinated effort of a variety of land owners & agencies. It is important that state park staff continue to be involved in IRM (Integrated Resource Management) projects that may help address natural, cultural, archeological and historical resource issues within state park boundaries. Park staff will be surveyed annually to identify how much they have been involved in IRM projects.

DISCUSSION OF PAST PERFORMANCE:

In FY 1992 no record was made of the IRM projects that park staff was involved with, however park staff have been active in IRM projects for many years. In FY 1993, Minnesota State Park Staff were involved with 59 IRM projects across Minnesota. State park staff were not surveyed in FY 1994.

PLAN TO ACHIEVE TARGETS:

State Park Administrative Staff will support park staff involvement in appropriate IRM programs. IRM will be part of annual performance reviews, and annual awards will continue to be presented to staff for outstanding efforts in IRM projects.

OTHER FACTORS AFFECTING PERFORMANCE:

Divisional staff need to continually reassess the proportion of time staff devote to ongoing internal park management, and IRM projects.

Measure (3): Complete acquisition of land within state park statutory boundaries.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Acres acquired	100	4,000	108			
Targets				1,500	1,500	1,500

DEFINITION, RATIONALE, DATA SOURCE:

About 10% of the 230,600 acre State park system is privately owned (within statutory boundaries). The division would like to acquire the remaining 23,600 acres by the year 2020. Private in-holdings within state parks create numerous constraints for effective park operations. In-holdings make it more expensive to operate a state park because more time is devoted to law enforcement, hunting/park visitor conflicts are created, segmented lands isolate areas of state ownership making park land inaccessible to the public, and uncontrolled development within the statutory boundary destroys sensitive natural and cultural resources and the quality of park visitor's experience.

DISCUSSION OF PAST PERFORMANCE:

Although the benefits-driven management theory has been evolving since the 1970s, application of such an approach to actual management decisions for outdoor recreation areas is in its infancy. The Minnesota state parks' benefits-driven research project is one of five pilot tests nationally being conducted in cooperation with the US. Forest Service to assess the actual experiences and benefits accrued to outdoor recreation site visitors. The initial research from the pilot tests will be used to develop management objectives for the research sites, improve the specific research instruments used, develop a more defined concept of research needs and advance the basic theoretical framework surrounding the research work.

Previous performance in state parks has been based on activities provided, number of visitors, number of camping nights and revenue generated from state park receipts. The benefits-driven approach recognizes the importance of these measures and incorporates the visitors goals, expectations, experiences and benefits into making management decisions.

PLAN TO ACHIEVE TARGETS:

Benefits driven management objectives and actions will be developed and implemented for six state parks within two years based on the data collected from the initial survey. In addition, the survey instrument will be revised during FY 1995 - 1996 in preparation for implementation in three more state parks during FY 1996. Benefits-driven management objectives will be established for these 3 parks during FY 1997.

OTHER FACTORS AFFECTING PERFORMANCE:

Three major factors will influence the ability to achieve the anticipated performance; 1) staff time available both at the DNR and the University of Minnesota to conduct the research, and 2) budget available to fund additional research efforts.

Measure (3): The areas within state parks that are heavily impacted by high visitor use will be managed.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Areas heavily impacted	n/a	n/a	n/a	n/a		
Targets					Inventory	--

DEFINITION, RATIONALE, DATA SOURCE:

Intensive use of areas in state parks can often result in destroyed ground cover, barren compressed soil, soil erosion, exposed roots, reduced vigor & eventual death of trees, and shrubs. This result can be minimized by redirecting visitor use, channeling visitor use, changing the type of visitor use and distributing visitor use, intensive management of the soil & ground cover to withstand use, and or developing manmade surfaces that can withstand intensive use with less change.

DISCUSSION OF PAST PERFORMANCE:

This is a continuing effort for state park management. State parks are usually established around spectacular natural features. These features are natural magnets for park visitors, and tend to focus use in particular areas. These are also often in areas that are highly susceptible to erosion, such as river banks, near waterfalls, on top of cliffs, or along steep slopes. Although state park staff have worked with this concern for over 100 years, there has been no attempt to quantify the amount of area impacted, rather it has been focused on minimizing the impact and sharing successful techniques.

PLAN TO ACHIEVE TARGETS:

Each park will need to be surveyed to identify areas which are presently heavily impacted by visitor use. This survey will have to be redone every few years to assess the progress that is being made to minimize the impact of park visitors.

OTHER FACTORS AFFECTING PERFORMANCE:

A variety of factors may affect performance in managing for intensive visitor use such as funding, availability of proven management techniques, land ownership patterns, intensity of use, management and enforcement staff availability, pattern of visitor use, and natural disasters. Funding to survey the heavily impacted areas may or may not be provided by the legislature. Funding needed to implement the actions needed to mitigate the results of intensive use may also be variable. Park staff will have to make the most effective use of whatever funds are available. Research will have to continue to help identify the most effective management techniques.

Objective 3: To provide accessible interpretive services which create a sense of stewardship for Minnesota's natural and cultural heritage.

Measure (1): State park visitors are more environmentally aware than other Minnesotans.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
This table will be developed when the survey instrument is developed.						

DEFINITION, RATIONALE, DATA SOURCE:

The Interpretive Services Program provides visitors with first-hand experiences with natural and cultural resources, which can lead to deeper awareness and concern for stewardship of those resources. Interpretive activities and services use the outdoors as a learning environment, making visitor experiences more interesting and enjoyable and building public understanding and support for wise resource management. Park visitors want and expect opportunities to better understand the natural, cultural and historic significance of the parks they visit and the resources they experience. Park visitors with this improved understanding of resource issues are much better prepared to make decisions in their own life that makes them stewards of our environment.

A survey instrument will be developed that measures the level of knowledge and awareness regarding environmental issues for a random sample of park visitors and non-park visitors. This survey will be administered annually to allow comparison between park visitors and non-park visitors. Other information will also be collected that will help us to continually improve the state park interpretive services program.

DISCUSSION OF PAST PERFORMANCE:

The number of visitors that have attended state park interpretive programs has continued to grow through the years, as the program has expanded, and as park visitation has increased. No attempt has been made in the past to measure the difference in environmental awareness between park visitors and non-park visitors.

PLAN TO ACHIEVE TARGETS:

By continually improving the state park interpretive program and expanding the program through a variety of options, we will continue to have a positive effect on the environmental awareness of park visitors.

OTHER FACTORS AFFECTING PERFORMANCE:

Additional funding for staff, interpretive displays and handouts, and visitor centers will have a major impact on the number of visitors and the interpretive techniques that can be used. This can have a major impact on the effectiveness of the program.

Measure (2): No. of people participating in formal environmental learning opportunities in state parks will increase.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Programs conducted		6,782				
Targets			6,900	7,000	7,100	7,200
Attendance at programs		165,901				
Targets			169,000	172,000	175,000	178,000
Visitor center atten		448,805				
Targets			456,000	505,000	513,000	520,000

DEFINITION, RATIONALE, DATA SOURCE:

This indicator measures exposure to first-hand environmental education experiences with natural and cultural resources through State Park Interpretive Activities. It does not include exposure to self-guided environmental education opportunities such as exhibits, literature or trails. As awareness of environmental problems increases, public demand for experiences and knowledge about resources and issues continues to increase. The desire is to meet the public demand and to implement a 1990 law which requires environmental education opportunities for all Minnesotans. State Park enabling legislation also requires educational opportunities for park visitors. State Parks receive over 8 million visitors annually. Activity attendance is dependent upon stable staffing patterns. The benchmark targets are based on a 6-8% increase every five years in attendance at interpretive activities. This increase is anticipated due to increased environmental education awareness and initiatives as well as to projected interpretive staffing increases.

DNR interpretive personnel collect attendance at all interpretive activities on a daily basis and results are tabulated quarterly. The indicator includes attendance by K-12 school groups, post-secondary school groups, other organized groups by request and public participation. Data is available from DNR Division of Parks and Recreation Central Office.

DISCUSSION OF PAST PERFORMANCE:

Minnesota State Parks Interpretive Program has been a leader in providing environmental learning opportunities for many years.

PLAN TO ACHIEVE TARGETS:

The greatest challenge is to provide effective professional vision in an environment that is continually changing. The interpretive program will continue to expand its clientele, by embracing the shifting trends in recreation and resource management, and by employing ever improving media and techniques at the emerging edge of environmental interpretation.

OTHER FACTORS AFFECTING PERFORMANCE:

The number of learning experiences that can be provided is directly linked to funding levels. Increased funding for professional environmental education staff and interns would allow greater opportunity for public participation. Funding for building major environmental interpretive centers at state parks throughout Minnesota would improve environmental education opportunities.

Objective 4: To provide adequate and stable funding to insure quality public service.

Measure (1): State park minimum operating standards are fully funded each biennium.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Min operating standards	80%	79%	82%	82%		
Targets					100%	100%

DEFINITION, RATIONALE, DATA SOURCE:

In 1990, Minnesota State Parks established minimum standards for maintenance and operations of state parks. This system provides a means to establish budgets, allocate funds equitably, communicate management expectations and evaluate park staff performance. Any funding below minimum standards results in fewer outdoor recreation opportunities, reduced resource protection, deterioration of park facilities, and loss of jobs. The minimum operating standards process identifies state park staffing needs to meet increasing and changing public demands. Information on State Park Minimum Standards is available from the Division of Parks and Recreation Central Office. Staffing standards were developed in FY 1990 through division wide work groups. These standards have been refined annually and checked for accuracy using cost accounting information.

DISCUSSION OF PAST PERFORMANCE:

The state park system has never had enough funding to fully fund minimum operation standards. Therefore some facilities are falling into disrepair, resources are being neglected, and less then desirable customer service is provided. In 1991, the state park system was funded for 95% of minimum operating standards, but that is the closest that funding has come to meeting these standards since they were initiated.

PLAN TO ACHIEVE TARGETS:

Clearly describe the divisions minimum operating standards to the legislature and request sufficient funding. Division management will continue to seek efficiency measures to ensure that the identified needs truly are minimum operating standards.

OTHER FACTORS AFFECTING PERFORMANCE:

Two critical factors for this measure are the level of funding received, and union contract settlements. Other factors that can be significant include: worker's compensation costs, unemployment costs, major facility infrastructure failure, Minnesota's overall economy, and the number of park visitors.

SUMMARY

AGENCY: Natural Resources, Department of
PROGRAM: 05 - Trails and Waterways Management

Program Purpose: The Trails and Waterways Unit exists to provide Minnesotans and their visitors with:

- **Access** to lakes, streams, river corridors and designated Canoe and Boating Routes;
- **Trail facilities** to accommodate a variety of trail uses and trail-related recreational activities;
- **Grants-in-aid** to assist local governments in planning, developing and maintaining recreational trails;

Mission: "Trails and Waterways is charged with acquiring, developing, maintaining and operating high-quality trail and water recreation facilities to meet the needs of present and future generations." *[Adapted from Commissioner's Appointment & Delegation Order #352 establishing DNR Trails & Waterways and identifying its' primary responsibilities pursuant to authority vested in the DNR Commissioner by MS Chap. 43.09, Subd 2(a), and other applicable laws.]*

EXPENDITURES AND STAFFING (F.Y. 1994)

	($ in Thousands)
Total Expenditures:	$ **12,169**
From State Funds	$ 11,824
From Federal Funds	$ 345
Number of FTE Staff:	114.2

PROGRAM GOALS:

The Trails and Waterways Unit seeks to attain the following long-term goals: *(T&W Strategic Plan, 1994)*

- Satisfy public demand for additional recreational trail miles. (MS Chap. 85.015 and 86A.05 Subd. 4)
- Secure safe and adequate public access to Minnesota's lakes and rivers. (MS Chap. 86A.04, Subd. 9-10 and MS Chap. 97A.141).

DESCRIPTION OF SERVICES:

The Unit carries out its dual charge through the Trail Recreation and Water Recreation Programs in liaison with other state and federal agencies, the Minnesota Legislature, the Governor's Office and various boards, commissions, committees, citizen's associations, and user groups. Primary program responsibilities include:

Trail Recreation Program [Budget Activities: Trail Recreation and Trails & Waterways Management]

- Acquire, develop, operate and maintain 1,028 miles of legislatively authorized state trails.
- Assist in the development and maintenance of 2,033 miles of DNR Unit Trails (State Parks & State Forests).
- Administer grants-in-aid to local units of government to support trail development and maintenance.
- Administer the Adopt-a-River Program.

Water Recreation Program [Budget Activity: Water Access & Recreation]

- Acquire, develop, operate and maintain 1,400 public water access sites.
- Acquire, develop, install and maintain 150 fishing piers and 10 shore fishing sites.

- Maintain access and wayside facilities along 2,865 miles of designated river recreation routes.
- Acquire, develop, maintain and operate five Lake Superior safe harbors in cooperation with local governments.

Since the Trails and Waterways Unit began in 1979, this popular system has grown very rapidly to include many high-quality recreational facilities. These facilities enable Minnesotans to access and enjoy the state's natural resources safely and responsibly, while protecting environmental values and promoting local and regional economic development. As a state-level recreation provider, Trails & Waterways seeks to showcase scenic, natural, historic and cultural features unique to Minnesota. Trails and Waterways personnel are actively involved in all facets of system planning, design, land acquisition, construction, maintenance and operations. They also work closely with local public and private sector interests providing financial and technical support and other assistance upon request.

BACKGROUND INFORMATION:

MEASURES OF ACTIVITIES (A), WORKLOAD (W), UNIT COSTS (UC), OTHER DATA (O)

Type	Measure	F.Y. 1993	F.Y. 1994
	TRAIL RECREATION PROGRAM		
W	Miles of state trail	1,024	1,028
W	Miles of DNR unit trail	2,012	2,033
W	Miles of grant-in-aid trail	14,143	14,304
W	Number of registered all-terrain vehicles	44,168 est.	n/a
W	Number of registered snowmobiles	204,621	216,461
W	Number of cross-country ski passes	49,018	30,022 est.
A	Adopt-a-river groups / miles adopted	180 / 530	225 / 800
	WATER RECREATION PROGRAM		
W	DNR public water access sites	1,400	1,420
W	Number of fishing piers	140	150
W	Miles of canoe & boating routes	2,865	2,865
W	Number of registered boats	727,152	728,116
W	Number of licensed MN anglers	1,500,000	1,500,000

PROGRAM DRIVERS:

Increased Maintenance and Operating Costs - Funding for facility maintenance, operations and services has not kept pace with increased operating costs and growing visitor use. Inflation and other under-funded liabilities have seriously eroded operating dollars. As new facilities are added, this problem grows more acute. Regular funding is unavailable for routine maintenance, preventative maintenance, and operation of water access and trail facilities. Deferred maintenance is becoming increasingly problematic in terms of its impact on visitor satisfaction and basic infrastructure integrity. Dollars spent on needed repairs extends the useful life of these facilities and can help avoid costly replacement or major redevelopment projects later on.

Capital Funding Availability - New facility construction depends upon appropriations for land acquisition and facility development. The amount, timing and specific legislative direction accompanying these appropriations helps determine project priorities. Competition for such dollars has grown in recent years given the need to supplement and revitalize Minnesota's aging public infrastructure. Appropriations for new construction, however, when not linked to added maintenance and operations support, leads to a reduced level of maintenance over the entire system.

Social, Economic and Demographic Change - Minnesota's aging, increasingly urbanized, and ethnically diverse population will enjoy less leisure time and disposable income than did their predecessors. Today's visitors demand accessible, high-quality facilities conveniently located near major transportation routes, population centers and tourist destinations. Likewise, many local businesses have come to depend upon recreation visitors for their livelihood. These businesses are also directly affected by cutbacks in facility operations and maintenance. These social, economic and demographic shifts illustrate the need to tailor recreation programs and services to reflect the changing face of Minnesotans. Trails & Waterways is committed to providing safe, convenient, affordable, accessible recreation facilities, especially for those who would otherwise be unable to access and enjoy the outdoors.

ADA Implementation - Implementation of the Americans with Disabilities Act (1990) has posed a formidable challenge to recreation providers. Trails & Waterways programs and facilities must comply with both state and federal accessibility guidelines to the extent practicable. For Trails & Waterways this has meant revised design and construction standards, adaptive programming and interpretive materials, and the retrofitting of some existing trail and water access facilities to accommodate those with physical disabilities. ADA implementation will continue to cost the program substantial dollars until full compliance is attained.

AGENCY: Natural Resources, Department of
PROGRAM: Trails and Waterways Management

OBJECTIVE, MEASURE

Trail Recreation Program

Activity Description: Trail users enjoy more than 17,000 miles of trails for various motorized and non-motorized recreation activities. Trails and Waterways administers grants to local units of government for the construction and maintenance of more than 14,000 miles of local snowmobile, ATV and cross-country ski trails. The Unit also manages the 1,028 mile State Trail System. Sixteen state trails have been legislatively authorized by MS Chap. 85.015. The Unit also assists in developing and maintaining the 2,033 miles of DNR Unit Trails located mostly within Minnesota State Parks and on State Forest lands. The Adopt-a-River Program has enlisted some 225 volunteer groups who have cleaned up over 800 miles of river banks across Minnesota. [Budget Activities: Trail Recreation and Trails & Waterways Management.]

Program Goal: *"Satisfy public demand for additional recreational trail miles." (DNR T&W Strategic Plan, 1994)*

Objective 1: Acquire and develop additional trail miles to meet growing demand for recreational trails.

Measure (1): Miles of state trail, unit trail and grants-in-aid recreational trail.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
State Trails						
Actual	1,011	1,024	1,028			
Targets	n/a	1,011	1,024	1,050	1,060	1,080
DNR Unit Trails						
Actual	2,118	2,012	2,033			
Targets	n/a	2,118	2,012	2,033	2,033	2,033
GIA Trail-Snowmobile						
Actual	12,847	12,956	13,304			
Targets	n/a	12,847	12,956	13,304	13,304	13,304
GIA Trail-Cross Coun						
Actual	1,013	1,021	1,017			
Targets	n/a	1,013	1,021	1,050	1,050	1,050
GIA Trail-ATV						
Actual	112	137	190			
Targets	n/a	112	162	230	300	425
All Trails (Total)						
Actual	17,101	17,150	17,572			
Targets	n/a	17,101	17,175	1,050	1,050	1,050

DEFINITION, RATIONALE, DATA SOURCE:

A "trail" is defined as any continuous pathway intended for recreational use for all or part of the year. Designated trails must be signed, mapped and available for public use. This definition excludes road shoulders or bikeways that lack physical separation from the roadway. *"State trails"* are recreational or commuter routes that connect outdoor recreational facilities or significant scenic, historical, scientific or recreational qualities *(DNR Policy 11, Dated 02/25/81). "Unit Trails"* are trails administered by the DNR Divisions of Forestry or Parks and Recreation and managed in a manner consistent with the primary purposes of the State Park or forest. *"Grants-In-Aid Trails"* are recreational travel routes cooperatively acquired, developed and maintained by local units of government, landowners, and trail user groups through MN DNR's Trail Assistance Program.

Research suggests that trail-related activities are among the most popular and fastest growing outdoor activities in Minnesota (and elsewhere). Survey respondents consistently rank trail development as a high priority. State trail mileage figures provide a gross indicator of available opportunity.

Trail mileage data is from the *Minnesota Registry of Public Recreational Trail Mileage*, and is reported annually as required by MS Chapter 85.017. Data is maintained in an automated recreation facility database (called RECFAC) managed by the DNR Management Information Systems Unit on a COMPAQ 386 microcomputer.

DISCUSSION OF PAST PERFORMANCE:

New trails and major trail improvements seek to connect existing trails with cities, towns and recreational facilities, and with popular tourist travel destinations. They showcase unique scenic, natural, historic or cultural features of the Minnesota landscape. Increasingly, major trail development projects are undertaken in response to local public demands as expressed through the state's political process.

PLAN TO ACHIEVE TARGETS:

In all but the case of All-Terrain Vehicle GIA Trails, trail mileage is expected to grow very slowly, if at all. This projection assumes that funding will remain essentially constant as system maintenance needs will undoubtedly grow as new trail miles are added, and as existing trails experience heavier use over time.

OTHER FACTORS AFFECTING PERFORMANCE:

The pace of recreational trail development depends upon the level of community and legislative support, capital funding availability, and observed trends in railroad abandonments.

Measure (2): Estimated number of state trail users (on a 12-month basis).

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	n/a	n/a	n/a			
Targets	n/a	n/a	n/a	n/a	n/a	n/a

DEFINITION, RATIONALE, DATA SOURCE:

This measure is intended to provide an estimate of annual state trail usage. Ideally, such data would yield reliable summer and winter use estimates for each trail in the State Trail System.

Statistically reliable estimates of statewide trail usage are needed to gauge program effectiveness and to guide long-term capital planning.

Various methods can be used to gauge customer service. On-site surveys can be conducted where practical. Electronic or mechanical counters could also be installed and monitored along MN DNR trails. General population surveys could be conducted where no organized or representative group exists (as with hikers, bikers, and in-line skaters). Trails & Waterways must balance the need to develop new trails and maintain and improve existing trails with the need to gauge its overall effectiveness and the quality of service provided to its customers. In the absence of additional funding, user research could be carried out at the expense of other management priorities.

DISCUSSION OF PAST PERFORMANCE:

Use levels on State Trails are a function of many factors including trail condition, quality of the recreation experience, proximity to population centers, major travel routes or other destinations, the trail's ability to attract visitors from long distances, and even regional weather patterns. Accurate user counts are difficult to obtain because there are typically multiple (uncontrolled) trail entrance/exit points. In the case of snowmobile trails, interconnected state, county, city, and

private trails make it difficult for trail users to know whose trails they have used. Past use monitoring efforts were plagued by a chronic lack of funding and available staff, difficulty obtaining reliable volunteers to help conduct user surveys and user counts, and difficulty obtaining reliable trail-specific counts from surveys mailed to registered snowmobile owners at season's end. Electronic or mechanical trail counters currently in use in some areas are expensive, prone to theft or vandalism, and of questionable reliability. In addition, the data they provide is difficult to interpret in light of the mixed use nature of TAW facilities.

PLAN TO ACHIEVE TARGETS:

Current data is not available for all state trails. It is suggested that T&W participate in the annual Omnibus Survey conducted by the University of Minnesota's Center for Survey Research in order to obtain general population estimates of trail use.

OTHER FACTORS AFFECTING PERFORMANCE:

Progress in achieving this objective will depend upon the availability of funding needed to carry out general population research on a continuing basis.

Measure (3): Percentage of state trail users satisfied with trail facilities.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	n/a	n/a	n/a			
Targets	n/a	n/a	77%	77%	77%	77%

DEFINITION, RATIONALE, DATA SOURCE:

Statistically reliable estimates of the percentage of state trail users who are satisfied with the location, condition and availability of state trails.

Measures of user satisfaction are critical to evaluating T&W's performance as a recreational trail provider. Such data helps us better understand and serve our clientele.

Various methods can be used to gauge customer service. On-site surveys can be conducted where practical. Electronic or mechanical counters could also be installed and monitored along MN DNR trails. General population surveys could be conducted where no organized or representative group exists (as with hikers, bikers, and in-line skaters). Trails & Waterways must balance the need to develop new trails and maintain and improve existing trails with the need to gauge its' overall effectiveness and the quality of service provided to its' customers. In the absence of additional funding, user research could be carried out at the expense of other management priorities.

DISCUSSION OF PAST PERFORMANCE:

Trails & Waterways is a customer-oriented recreation provider. The Unit's goal is to provide high-quality facilities and services, and satisfying outdoor recreational experiences. Past surveys have provided only partial (i.e., seasonal) information on public satisfaction with some of State Trails. More comprehensive data is needed to gauge overall performance.

PLAN TO ACHIEVE TARGETS:

Current data is not available for all state trails. It is suggested that T&W participate in the annual Omnibus Survey conducted by the University of Minnesota's Center for Survey Research in order to obtain general population estimates of trail use.

OTHER FACTORS AFFECTING PERFORMANCE:

Progress in achieving this objective will depend upon the availability of funds needed to conduct on-site survey research on a continuing basis.

Objective 2: Secure Adopt-a-River volunteers to clean up Minnesota's streams and riverbanks.

Measure (1): Number of volunteer groups/miles of river bank adopted.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	146/451	188/632	225/800			
Targets	140/434	160/472	250/700	260/900	280/1000	300/1,100

DEFINITION, RATIONALE, DATA SOURCE:

"Groups Enrolled" refers to the number of volunteer groups enrolled in the Adopt-a-River Program. *"River Miles Adopted"* refers to actual river bank miles cleaned annually by Adopt-a-River volunteers, reported by calendar year.

By removing refuse along Minnesota's waterways, volunteers restore the health and natural beauty of these once-majestic river corridors. Fish and wildlife habitat is improved and there is a reduced potential for the release of toxic pollutants into the riverine environment. This hands-on working/learning experience teaches Minnesotans practical ways to protect and become care givers to the state's natural heritage.

Site-specific data is collected by volunteers on a continuing basis and submitted to MN DNR Trails and Waterways for summary, review and public distribution. Data includes numbers of individual volunteers, hours volunteered and tons of refuse collected.

DISCUSSION OF PAST PERFORMANCE:

Past performance has been linked to available internship staffing. High turnover among interns continues to be a limiting factor.

PLAN TO ACHIEVE TARGETS:

Funding is being sought to add a position for this program. Also, communication networks are being improved and are becoming more extensive. This will make the program more visible and accessible to the most likely community service volunteers.

OTHER FACTORS AFFECTING PERFORMANCE:

Future objectives are based upon relatively conservative growth projections and the expectation of stable future funding and staffing. Long-term success will depend upon marketing the program to a broader audience, beyond those groups that typically participate in environmental causes.

Water Recreation Program

Activity Description: Since the Trails and Waterways Unit began in 1979, this popular system has grown to include 1,400 water access sites, 150 fishing piers, and numerous access and wayside facilities located along Minnesota's 2,865-miles of designated river recreation routes. Safe harbors in Knife River, Two Harbors, Silver Bay, Grand Marais and Grand Portage, MN are authorized in MS Chapt.86A.20. [Budget Activity: Water Access and Recreation]

Program Goal: *"Secure safe and adequate public access to Minnesota's lakes and rivers." (MN DNR T&W Strategic Plan, 1994)*

Objective 1: Develop additional public water access sites and related facilities to meet growing user demand.

Measure (1): Number of fishing piers and number of lakes/rivers with DNR public accesses.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Fishing Piers						
Actual	130	140	150			
Targets				160	170	180
Lake/River Accesses						
Actual	1,360	1,400	1,420			
Targets	1,375	1,450	1,475	1,500	1,525	1,550

DEFINITION, RATIONALE, DATA SOURCE:

The number of boat launches, fishing piers and support facilities (i.e., parking areas, rest stops) is an indicator of program activity. Local units of government also provide water access facilities for public use and often cooperate with the DNR in maintaining and operating public water access facilities.

The 1990 Minnesota *Statewide Comprehensive Outdoor Recreation Plan* projects that growth in water-based recreation will constitute fully 28 percent of all growth in outdoor recreation demand by the year 2000. The public's ability to access and enjoy Minnesota's lakes and rivers is an important measure of T&W's success in securing such access.

Facility data is contained on the RECFAC automated database which is maintained by the DNR, Management Information Systems Unit on a COMPAQ 386 microcomputer. T&W is in the process of developing its own facility data base which should be completed by FY 1996.

DISCUSSION OF PAST PERFORMANCE:

The number of public water access sites developed or fishing piers constructed is directly related to available funding. The budget for water access acquisition and development was cut substantially in FY 95 and this is reflected in the numbers above. Although the LCMR has traditionally funded the fishing pier program, there is no assurance that they will continue to so.

PLAN TO ACHIEVE TARGETS:

A restoration of funds for water access development will be sought and funding will again be requested from the LCMR.

OTHER FACTORS AFFECTING PERFORMANCE:

The pace of public water access development depends upon continued program funding and the availability of long-term capital improvement dollars.

Measure (2): Estimated annual use of DNR public water access facilities.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual						
Targets						

DEFINITION, RATIONALE, DATA SOURCE:

Estimated total annual water access facility usage obtained via general population surveys.

Reliable use estimates are needed to gauge effectiveness and to guide program planning and priority setting.

Data will be collected by the MN Center For Survey Research. T&W will evaluate, store and update the data as needed.

DISCUSSION OF PAST PERFORMANCE:

Current use data is not available for DNR water access facilities.

PLAN TO ACHIEVE TARGETS:

Trails and Waterways will participate in the annual Omnibus Survey conducted by the University of Minnesota's Center for Survey Research. A continuous, comprehensive program of water recreation research will be implemented during FY 95 to yield estimates of statewide water access use, user satisfaction, and related demographic data for MN DNR public water access facilities. Estimated Cost = $25,000

OTHER FACTORS AFFECTING PERFORMANCE:

Progress in achieving this objective will depend upon the availability of funding needed to carry out continuing research.

Measure (3): Percentage of access users satisfied with all public access and fishing piers facilities.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual						
Targets						

DEFINITION, RATIONALE, DATA SOURCE:

Percentage of general population survey respondents, who have visited a DNR water access facility, expressing satisfaction with these facilities.

This data helps us better understand and serve our clientele.

Current user satisfaction data is not available for state water access sites/facilities.

DISCUSSION OF PAST PERFORMANCE:

A variety of research has been conducted in the recent past to gauge boater attitudes, boater characteristics, boating patterns, surface water use patterns, and boater satisfaction with existing facilities. Even lakeshore owners have been

surveyed to determine resident boating behavior and their use of public water access facilities. These studies are reported in: *"An Evaluation of Water Surface Use"* - Annual Reports 1984-1988 (Biocentrics Inc.); *Boating Patterns and Behavior (1988); Recreational Boating on Lake Superior (1988); Recreational Boating on the Mississippi River Downstream from the Twin Cities (1988); Management of Boating in Minnesota: Problems and Actions (1988); Boating Safety in Minnesota (1988); Preferred Facilities and Services at Free Public Water Access Sites (1988); Activities at Free Public Water Access Sites (1988); Minnesota Boat Owners: A Summary of Who They Are and What They Want (1990).* Since 1980, the Lake Minnetonka Conservation District and T&W have also cooperated in assessing the special needs of Lake Minnetonka. Every other year this research is reported in an effort to monitor boater attitudes and assess key surface water use issues.

More recently, a 1994 study conducted by T&W in cooperation with the Univ of MN, College of Natural Resources examines the effects of surface water use crowding and boater displacement in the 7-County Metro Area. An effort is currently underway (1994) to quantify fishing pier use and to obtain demographic data and opinions regarding the need for added piers. Additional studies focusing on specific lakes or regions of the state (e.g., Leech Lake watershed) are contemplated in order to obtain supplementary data useful in managing issues associated with specific waterbodies. Joint state/federal research also continues along the St. Croix River where surface water use patterns have been monitored for over 15 years.

PLAN TO ACHIEVE TARGETS:

The boater use studies provide base data that remains pertinent today. These basic studies will not need to be redone unless major demographic events (e.g., boomer retirements) or significant urban expansion were to take place. Rapid changes in boating technologies (e.g., Jet Skis, larger boats) may also prompt re-examination of these studies. T&W will, however, participate in the annual Omnibus Survey conducted by the University of Minnesota's Center for Survey Research in an effort to gauge public satisfaction with access facilities. Est Cost = $25,000.

OTHER FACTORS AFFECTING PERFORMANCE:

Progress in achieving this objective will depend upon the availability of adequate funding for continuing research.

Objective 2: Implement legislation directing MN DNR to plan, acquire, develop and operate five Lake Superior safe harbors in cooperation with local governments (MS Chapter 86A.20). Plan, acquire and develop protected public accesses in-between north shore communities as recommended by the North Shore Management Board (NSMB) and local units of government.

Measure (1): Progress in planning, acquiring and developing Lake Superior safe harbors and accesses.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Planning						
Actual	2	2	3	4		
Targets	2	2	3	3	3	2
Acquisition						
Actual	n/a	n/a	1			
Targets	n/a	n/a	n/a	2	1	1
Development						
Actual	n/a	n/a	n/a	1		
Targets	n/a	n/a	n/a	1	2	1

DEFINITION, RATIONALE, DATA SOURCE:

Recreational boat harbors differ from commercial harbors in that they are typically smaller, surface water conditions are calmer to accommodate smaller watercraft, and they feature various amenities such as fuel, food, drinking water and dockage for harbor customers. Each harbor will include a public access.

There are currently no recreational boat harbors along the north shore of Lake Superior between Knife River and Grand Marais, a distance of 90 miles. This lack of protected boat launch and retrieval facilities serves as a barrier to use of Lake Superior by recreational boaters. Construction and operation of these harbors is also expected to boost tourism in communities located along the north shore of Lake Superior.

Data is from the *North Shore Harbors Plan*, prepared by the North Shore Management Board (June 1991); the *Harbors Plan Economic Study*, Public Sector Consultants, Inc. (May 1992); and from *Recreational Boating On Lake Superior*, prepared by the Minnesota Extension Service Tourism Center (1989). Copies of these reports are available from MN DNR Trails & Waterways or the North Shore Management Board.

DISCUSSION OF PAST PERFORMANCE:

This program was initiated following the completion of the *North Shore Harbors Plan (1991)* by the North Shore Management Board (NSMB). Following approval of the plan, the NSMB and MN DNR jointly developed the *Site Planning & Technical Assistance Manual*, which outlines planning responsibilities for the NSMB, the DNR, and for local units of government. The five harbor system was authorized in 1993 by the Minnesota Legislature. Planning and preliminary design work has been completed for Knife River, Silver Bay, and Taconite Harbor. Development of the Silver Bay harbor was fully funded in 1994. The Taconite Harbor Project is being planned using MN DNR's authority to build water access sites.

PLAN TO ACHIEVE TARGETS:

The DNR will continue to work with the NSMB and local units of government using the process outlined in the *Site Planning and Technical Assistance Manual.* The same group will also work to develop guidelines for development, operation and maintenance of the harbors. Currently, the DNR is working with the City of Silver Bay and the U.S. Army Corps of Engineers to acquire and develop the Silver Bay harbor. The DNR is also working with the town of Schroeder, the City of Two Harbors, and Lake County, Minnesota to secure funding for the Taconite Harbor and Knife River projects, and to complete plans for the Two Harbors project.

OTHER FACTORS AFFECTING PERFORMANCE:

Progress in achieving this objective is dependent upon funding for land acquisition and harbor development, and active participation by local units of government.

SUMMARY

AGENCY: Natural Resources, Department of
PROGRAM: 06 - Fish and Wildlife Management

EXPENDITURES AND STAFFING (F.Y. 1994)

	($ in Thousands)
Total Expenditures:	$ **45,627**
From State Funds	$ 43,962
From Federal Funds	$ 1,665
Number of FTE Staff:	660.2

PROGRAM GOALS:

- To provide sustainable wild populations of fish, wildlife, and native plants (M.S.84.941, 97A.045, 84.0895, 84.091)
- To provide sustainable recreational and commercial opportunities for users (M.S.84.941, 97A.045, 97A.135)
- To provide sustainable natural communities and ecosystems (M.S.84.941, 97A.101, 97A.145, 84.091, 84.967, 84.968, 84.033)
- To have people knowledgeable about fish, wildlife, and native plant communities (M.S.97A.051, 97C.001, 97C.005, Chap.254 subd 8 1991, Chap.126A 1992)

DESCRIPTION OF SERVICES:

The Fish and Wildlife Division exists to protect and manage Minnesota's populations and natural communities of fish , wildlife, and native plants for their intrinsic values and sustainable benefits to people. The Division is committed to maintaining the tremendous diversity of species and habitats that occur in Minnesota, and to provide varied, high quality recreational opportunities and educational activities related to fish, wildlife, and native plants.

BACKGROUND INFORMATION:

MEASURES OF ACTIVITIES (A), WORKLOAD (W), UNIT COSTS (UC), OTHER DATA (O)

Type	Measure	F.Y. 1993	F.Y. 1994
	Fish and Wildlife Resources		
W	No. of WMA, SNA and Prairie Bank	1300	1300
W	Acres of WMA, SNA and Prairie Bank	900,000	910,000
W	Acres of undisturbed grassland	2.5M	2.5M
W	Number of protected fish and wildlife species	658	658
W	Number of managed lakes	5,400	5,400

W	s of managed lakes	3.8M	3.8M
O	Game harvest (deer, bear, moose)	247,000	206,000
O	Small Game harvest	3M	3M
O	Fish Harvest	35M#	35M#
	Fish and Wildlife Users		
A	Number of anglers	1.9M	1.9M
A	Number of hunters	0.6M	0.6M
A	Number of viewers	2.8M	2.8M
	Fish and Wildlife Economic Value		
O	Total annual expenditures	1.5B	1.5B
O	Annual fishing expenditures	846M	846M
O	Annual hunting expenditures	290M	290M
O	Annual viewing expenditures	363M	363M

M = millions # = pounds B = billions
WMA = Wildlife Management Area SNA = Scientific and Natural Area

PROGRAM DRIVERS:

- **Protecting Ecosystems While Maintaining Economic Opportunities.** Increased development of the lands and waters heightens concerns for maintaining the viability of ecosystems in the state while supporting economic growth. Stewardship of ecosystems and economic opportunities presents a great challenge to citizens.

- **Providing High Quality Recreation.** Expectations for quality hunting, fishing, and viewing experiences are as varied as the individuals pursuing them. This variety of expectations for quality experiences can create conflict among users. These expectations may also conflict with the goals of sustaining ecosystems.

- **Adequate Funding for Programs.** Funds from license fees for fishing, hunting, and trapping may fall short of that needed to meet the demands for recreation and the challenges of protecting ecosystems. Other programs in the department are receiving less funding reducing their ability to manage fish, wildlife and native plants.

- **Maintaining a Healthy, Productive Workplace.** Employees are highly trained and motivated. They require healthy, productive workplaces. As funding becomes more scarce and the work force is reduced more work is delegated to fewer personnel increasing stress in the workplace.

- **Improving Organizational Effectiveness and Efficiency.** The organization must continue to evaluate itself. New technologies, as well as new goals and objectives, can improve effectiveness. Inadequate information reduces the capability of resource managers to administer programs.

AGENCY: Natural Resources, Department of
PROGRAM: Fish and Wildlife Management

OBJECTIVE, MEASURE

Objective 1: Maintain lake and stream ecosystems.

Measure (1): Number of lakes, or miles of stream where habitat was improved and protected.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Aeration	1	0	7			
Acquisition	4.1 mi	1.57 mi	4.82 mi			
Lake HI	3	0	0			
Lake Rehab	0	3	3			
Stream HI	65.0 mi	21.2 mi	25.7 mi			
Target						
Aeration	1	0	7	6	6	6
Acquisition	10 mi	10 mi	10 mi	12 mi	12 mi	12 mi
Lake HI	3	0	1	3	3	3
Lake Rehab	0	3	3	3	3	3
Stream HI	67.3 mi	21.2 mi	25.7 mi	15.7 mi	12 mi	12 mi

HI = Habitat Improve

Measure (2): The number of unique or at risk fish species that are being protected.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Endangered	0	0	0			
Threatened	0	0	0			
Special Concern	16	16	16			
Other	2	3	3			
Target						
Endangered				0	0	0
Threatened				1	1	1
Special Concern				18	18	18
Other				3	3	3

Measure (3): Number of Minnesota streams having biologically based protected flows.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	0	0	0			
Target				10	14	18

Measure (4): Number of lake contour maps produced.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	15	22	9			
Target				20	25	25

Measure (5): Number of environmental review projects and permits reviewed per year.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	1,254	1,363				
Target				1,500	1,650	1,800

Measure (6): The spread of undesirable aquatic exotic species.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Sites EWM	48	60	65			
(% increase)	41	25	8			
Target			60	65	65	65
Sites PL	1,478	1,502	1,552			
(% increase)		2	3			
Target			1,502	1,550	1,550	1,550
Sites Zebra mussels	2	2	3			
(% increase)	0	0	50			
Target			2	3	4	4

EWM = Eurasian Water Milfoil PL = Purple Loosestrife

DEFINITION, RATIONALE, DATA SOURCE:

Habitat management forms the basis for fish management in Minnesota. A planned management information system has been developed by the Section of Fisheries to administer the state's vast aquatic resources (5,400 lakes and 15,000 miles of streams managed for sportfishing). The primary document that guides the management of a particular water body is the Fisheries Management Plan. Management plans delineate long range goals for the fishery and specify the strategies that will be used to achieve the goal.

Lake and stream surveys and population assessments are the primary tools used to identify factors limiting fish management potential, and evaluate the success of ongoing management programs. Each year surveys are conducted on approximately 600 lakes and 125 streams. The operational component of the management plan lays out habitat management needs. Each year 450 management plans are prepared or updated based on new survey information.

Increased demand for surface water use underscores the importance of protecting our water and stream resources from extreme exploitation. Wise allocation of water must include consideration of impacts to stream biota. Streams and the fish and wildlife habitat in them, are a product of stream flows, as are the resultant hunting, fishing and trapping. When we preserve stream flows, we contribute to the protection of the aquatic communities within the streams and the aesthetic and recreational opportunities they provide.

Our lakes are changing. Lake and watershed development is increasing, and along with it, nutrient loading, siltation and pollution. Exotic plants and animals are invading our water systems. How we manage our lakes in the face of these changes depends a lot on what we know about them. An integral understanding of lakes begins with accurate contour maps. These maps provide the basis for management decisions, water quality modeling and for building an aquatic geographic information system.

The Minnesota Department of Natural Resources is required by law to track the abundance and distribution of undesirable aquatic species as part of their control efforts. Detailed data is collected and published annually each January in "Ecologically Harmful Exotic Aquatic Plant and Wild Animal Species in Minnesota".

DISCUSSION OF PAST PERFORMANCE:

Minnesota's aquatic resources are continuously subjected to increasing rates of shoreline development. Threats to aquatic habitats are far greater today than they were 50 years ago. During this same period fishing pressure on Minnesota lakes and streams has more than doubled. More anglers and less habitat, coupled with advances in fishing technology and knowledge, has dramatically increased pressure on the states aquatic resources. This trend is expected to continue. Fisheries managers must continue to refine management techniques and experiment with new approaches in order to maintain quality angling opportunities.

Legislation passed by the 1993 legislature established the authority for the DNR to designate Aquatic Management Areas. This authority represents a unique opportunity to protect critical aquatic habitats. Funding availability will likely dictate the rate at which this program can expand.

The state's initial listing of threatened, endangered and special concern species was reviewed during F.Y.93-94. A revised listing will be made available for public review in F.Y.95. Restrictive fishing regulations have been used to protect special concern fish species such as lake sturgeon and paddlefish, as well as unique fisheries such as Lake Superior steelhead, Red River channel catfish and muskellunge.

Environmental review has been conducted since the Minnesota Environmental Policy Act was enacted in 1971. In 1989, environmental review efforts were expanded in response to a critical need to improve coordination with project proposers and government regulators.

The lake mapping program has been in place since the 1940s. Line-of-sight methods have been used to map lakes up to about 2,000 acres in size. Recently, the program has begun to produce lake maps electronically, providing a more useful modeling tool.

Annually since 1990, between 14,000 and 20,000 acres of natural landscape are converted to cover types that are unusable to fish and wildlife. Many thousands more acres of land and water are indirectly impacted by pollution, runoff and siltation from these developed sites. Water quality is in degraded throughout the state from non-point source pollution, ecologically important natural habitats like wetlands and prairies are being lost, and fish and wildlife populations are changing in response to these impacts.

Development is increasing in many parts of the state. Development activities harm natural ecosystems and reduce plant and animal abundance and diversity. By dedicating resources to reviewing plans and environmental permits before projects start, valuable environmental resources can be identified and measures to reduce impacts to them can be recommended to project proposers and regulatory decision-makers. This allows us to direct efforts towards preventing environmental damage rather than restoring previously damaged systems.

Normally, state and federal environmental assessments, environmental impact statements and permit applications are reviewed by department biologists to identify impacts to fish, wildlife, native plants and their ecosystems. Resources present on or near proposed development sites are inventoried, and potential impacts evaluated. Options for reducing environmental harm associated with important natural resources are discussed with project decision-makers, with the goal of maintaining ecosystem integrity as projects are built. The types of projects and environmental documents reviewed are summarized in annual reports to the U.S. Fish and Wildlife Service.

Minnesota, and the United States as a whole, is experiencing an increase in the number of aquatic exotic species that are invading ecosystems. This increase prompted the establishment of an Interagency Exotic Species Task Force in 1990, whose recommendations resulted in various statutes addressing exotic species.

PLAN TO ACHIEVE TARGETS:

In recent years the Section of Fisheries has placed greater emphasis on habitat protection. Through permit reviews, hydropower licensing, and participation on watershed-level management initiatives the importance of basin wide management is being emphasized.

Budget limitations necessitate continuous review of traditional programs and limit the expansion of new programs. Greater emphasis is being placed on public-private partnerships and on cooperative initiatives with other agencies.

The In-Stream Flow Program focuses on collecting hydrographic and biological data on Minnesota's 39 major watersheds to establish stream flows that will protect habitats for all fish life stages and other aquatic biota. The information collected and developed by the project will serve as a basis, within the DNR, to begin the rule making process for establishing protected flows on our streams. This initiative is the first statewide program in the U.S. designed to use a fish community approach within IFIM to develop protected flows for warm water streams.

Lakes under 2,000 acres will continue to be sounded using line-of-sight methods and computer-generated maps produced. Acquisition of differential global positioning system technology would enable sounding and mapping of the state's largest lakes.

The targets of no introduction of undesirable aquatic exotic species in Minnesota, or of no expansion of existing populations, are not attainable. Activities by the DNR and other cooperating groups can reduce the number of new introduction and minimize rates of spread within the state, while control efforts are improved and implemented.

OTHER FACTORS AFFECTING PERFORMANCE:

Public support is critical if we are to succeed in fostering a more ecological approach to management. The continued loss of aquatic habitats will place additional pressure on sensitive species and reduce recreational angling opportunities.

Stream data need to be collected under a range of flow conditions in order to effectively model flow/habitat relationships. Extended high or low water periods may impact data collection and consequent rule development that is dependent upon the data.

Project plans, environmental documents and permit applications will be reviewed. Personal contacts with project proposers and regulators will be done to more effectively communicate environmental issues and opportunities.

Larger lakes require greater sounding and mapping effort than smaller ones. Lakes are chosen to be mapped based primarily on Section of Fisheries priorities. When several moderate to large-sized lakes must be mapped, fewer maps will be produced.

Ultimately, long term ecosystem protection through environmental review depends on implementation of recommendations provided through this program. Our focus is to provide high quality recommendations and communicate them effectively to decision-makers, so that the need for their implementation is clearly understood.

The very factors that make some exotic species undesirable such as a high competitive advantage, few natural predators, and high rates of reproduction/spread, also make their control difficult.

Objective 2: Maintain terrestrial and wetland ecosystems.

Measure (1): Populations of selected game species (deer, ducks, pheasants).

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual proportion of deer permit areas above/below goal range	71/3	59/18	38/29			
Target (above/below)	<25/<25	<25/<25	<25/<25	<25/<25	<25/<25	<25/<25
Actual mallard and blue winged teal breeding populations (in 1000's)	718	566	811			
Target	525	525	525	525	650	650
Estimated pheasant populations in fall (in 1000's)	2,260	1,644	1,300			
Target	3,000	3,000	3,000	3,000	3,000	3,000

Measure (2): Populations of selected nongame species (piping plovers, common terns, neotropical birds).

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual nesting pairs of piping plovers	12	10	9			
Target				10	12	14
Actual nesting pairs of common terns	491	459	396			
Target				400	450	500
Actual number of the 130 neotropical migrant bird species breeding in the state that declined by 1%/year or more for 10 years	20	20	20			
Target				15	15	15
Actual number of endangered, threatened or spec. concern species	112	130	94			
Target				120	120	120

of the state's citizenry. It is also directly related to the abundance of wildlife and its availability.

Both measures also need to be qualified by the level of satisfaction that participants experience. The quality of experiences associated with wildlife resources is important, in addition to the quantity of such experiences, but is more difficult to measure. The satisfaction rating listed for FY 1991 is the public's rating of the overall performance of the Fish and Wildlife program for management and conservation of fish and wildlife in Minnesota. That measure should be repeated periodically, and there is also a need to more specifically measure how satisfied users are with specific wildlife-related experiences. To collect data for this measure would require public opinion polling once each biennium at an additional cost.

Data on number of licensed hunters is from License Bureau records of license receipts as certified for federal aid reimbursements. Data on the number of people participating in wildlife observation is from: U.S. Dept. of Interior, Fish and Wildlife Service and U.S. Dept. of Commerce, Bureau of Census, 1991 National Survey of Fishing, Hunting, and Wildlife-associated Recreation, U.S. Govt. Printing Office, Washington, D.C. 1993. This data is only available at 5-year intervals. Data on public satisfaction with performance of the Fish and Wildlife program is from a telephone survey of a statewide, stratified sample of the public conducted by the Minnesota Center for Survey Research and the DNR Division of Fish and Wildlife, 1991.

DISCUSSION OF PAST PERFORMANCE:

The number of people participating in hunting is only partially determined by the abundance of wildlife and the availability of hunting opportunities. Demographics and societal values and trends also affect hunting participation. These factors currently include an aging population, increased urbanization, changes in traditional family structure, and changing values towards animals and their use. Nationally, participation in hunting has been declining. This pattern has not yet been observed in Minnesota, but the growth of hunting participation is not expected to keep pace with overall population growth. Although some of these factors are beyond the agency's control, a number of efforts have been undertaken to help recruit and retain hunters and to improve public knowledge and understanding of wildlife management.

There have also been increased efforts in the program to include and involve all people who use or appreciate wildlife and natural communities in the activities, services, and support of the programs. These efforts will be even more important in the coming biennium and beyond.

PLAN TO ACHIEVE TARGETS:

Maintaining or increasing the number of hunters will require viable wildlife population, extensive public hunting lands, and good relations with private landowners who provide the bulk of the hunting opportunity. For those who may be interested in these opportunities innovative approaches will be required to overcome barriers posed by changes in demographics and family structure that remove young people from a close association with the land and wildlife. Working with prospective hunters and private landowners will require an ongoing commitment of staff and other resources.

It will be equally important to engage the majority of citizens who like to view and appreciate wildlife but who have not shown the same level of financial commitment to attaining management objectives.

Through the management planning process the states fish stocking program is continuously being evaluated in order to deliver the greatest return in our investment to the angler.

A proposal has been submitted to the Legislative Commission for Minnesota Resources to expand the use of experimental fishing regulations. If approved, the number of waters under experimental management would nearly double by FY-97. Experimental regulations offer the greatest promise to enhance the "quality" element of the angling experience that many feel has been diminished in the last 50 years.

OTHER FACTORS AFFECTING PERFORMANCE:

Public support is critical if we are to succeed in fostering a more ecological approach to fisheries management. Regulations will only be successful if there is good compliance, which relies heavily on angler acceptance. Fish stocking is a very powerful management tool when used where past experiences have demonstrated success. Indiscriminate stocking must be avoided if we are to achieve quality fish management in Minnesota. The continued loss of aquatic habitats will place additional pressure on sensitive species and reduce recreational angling opportunities.

The long term solution lies in education. The more in tune future generations are with ecology and the importance of natural environments, the better decisions they will make regarding the states resources.

Objective 4: Provide educational opportunities.

Measure (1): Number of participants in MinnAqua program.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	32,060	24,988	25,080			
Target			25,000	30,000	30,000	30,000

Measure (2): Percent short term comprehension of MinnAqua course materials.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual		75	80			
Target				85	85	85

Measure (3): Percent positive rating of course by participants.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual		89	92			
Target				95	95	95

Measure (4): Number of Project Wild/Aquatic Wild workshops.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual		55				
Target			60	65	70	75

DEFINITION, RATIONALE, DATA SOURCE:

MinnAqua is the aquatic education program coordinated by the Section of Fisheries. This program combines hands-on activities dealing with various aquatic issues and sport fishing. The Project Wild/Aquatic Wild program is coordinated by the Section of Wildlife and is a part of a national school curriculum known as Project Wild.

Measuring participant numbers gives an indication of how many individuals are being reached. A standard evaluation form and pre-post test were developed for the MinnAqua program by the University of Minnesota 4-H program. These evaluations give a general idea of how the program is received and short term comprehension of topics by those going through the activities. However, it is often hard to sort out what is being influenced by program materials or individual instructors.

Detailed data on each event conducted is recorded by staff and volunteers. The information is then entered into a computer

The program regulates users of Minnesota's natural resources according to statute and rule. Expansion of recreational activities and a shift toward motorized recreational vehicles has increased mobility of the "recreating public" making protection of natural resources more difficult to accomplish. This shift has also increased the need to provide regulatory services geared at public safety (speed and alcohol). This trend will continue as larger segments of the public become more familiar with motorized recreation through advertising and expanded use areas.

BACKGROUND INFORMATION:

The Enforcement Division is a three-tiered organization staffed by 214.5 positions and organized as follows:

-Central Office - Responsible for all support functions including supervision, fiscal management, and planning functions. These functions are staffed by 25.5 positions, including clerical support.

-Regional Structure - The Division is organized into five Regional Offices which provide supervision, fiscal management, and other support functions. These activities are staffed as follows:

Region 1 - Bemidji, 5.5 positions including clerical support
Region 2 - Grand Rapids, 5.5 positions including clerical support
Region 3 - Brainerd, 8.5 positions including clerical support
Region 4 - New Ulm, 4.5 positions including clerical support
Region 6 - Metro, 5 positions including clerical support

-Field Structure - The field structure is comprised of 13 areas each headed by an Area Supervisor. Field operations consist of the enforcement of laws and rules, operation of mandated education programs, and dissemination of information to the public. The field operation is staffed as follows:

- Area Supervisors - 13 positions
- Sergeants - 2 positions
- Field Officers - 145 positions

The Division staff provides regulatory, educational, and informational services to a substantial clientele, including:

-828,000 hunting license purchasers (CY93)
-1,200,000 fishing license purchasers (CY93)
-728,000 owners of registered watercraft (CY93)
-205,000 owners of registered snowmobiles (CY93)
-56,000 owners of registered All Terrain Vehicles (ATVs) (CY93)
-740,000 students in the Firearm Safety Program (cumulative to date)
-239,000 students in the Snowmobile Safety Program (cumulative to date)
-16,500 students in the Advanced Hunter Education/Minnesota Bow Hunter Education Program (cumulative to date)
-3,200 students in the ATV Safety Program
-An unknown number of people who utilize Minnesota's resources in non-consumptive and non-motorized pursuits

The Division places a strong emphasis on providing informational and educational services as a means to achieving voluntary compliance with laws and rules. Law enforcement actions are initiated when appropriate to the situation.

PROGRAM DRIVERS:

Many factors influence the ability of the Division to successfully achieve its goals. These include:

Strategic Plan - The Division Strategic Plan places a heavy emphasis on achieving voluntary compliance through informational and educational activities rather than traditional law enforcement. It acknowledges and supports the traditional role of resource protection as well as recognizing the need to protect the overall environment. It prioritizes public safety issues, especially in recreational activities, as a major function of the Division. The Plan provides direction for the Division into the next century.

Funding Influences - Recent budget cuts have caused the Division to reduce overtime and maintain 14 vacant field officer stations. This action results in a decreased level of service in all activity areas. Overall the Division's ability to successfully achieve its goals is negatively impacted by these necessary actions.

An additional funding influence is the high interest level on the part of special interest groups in how the Division utilizes dedicated funding. These groups express their interest in a sense of "ownership" of any dedicated funds which derive from their particular activity area. There are numerous single issue groups all of which try to influence the Division's activities and expenditures toward their interest area. This inevitably leads to conflicts and concerns about the adequacy of the Division's activity level in one area versus another area.

Since the Division has a broad-based regulatory mandate, it is impossible to give each single issue interest group the level of service they feel they deserve.

Ecosystem Based Management - The Department has adopted an integrated resource management plan based upon ecosystems rather than smaller management units. This direction will create a need to change the manner in which regulation and law enforcement services are provided. Larger scale management will produce unique needs that may require different staffing levels in certain areas and new working techniques. Traditional methods and expectations of the public will need to be changed to accept broader based management and regulatory techniques. These changes may well initially be met with resistance, making Division goals more difficult to achieve.

Societal and Technological Changes - Societal changes have significantly affected, and will continue to effect, the role of the Division. The increase in single-parent households, frequently headed by women, have decreased the number of young people who pursue hunting and fishing as primary recreational activities. This is probably due to the fact that women traditionally do not choose hunting or fishing as primary recreational activities in as large a proportion as men. Children growing up without strong hunting/fishing influences are less likely to pursue these activities as primary sources of recreation.

Along with the decrease in interest in hunting/fishing among young people, technology has provided other types of recreational opportunities. The increase in motorized vehicle use (snowmobiles, motorcycles, ATVs, personal watercraft, etc.) have claimed increased segments of recreational time.

This has caused the Division's emphasis to shift from traditional game and fish regulation toward recreational and safety concerns. This increased number of recreational options requires that Conservation Officers function in more interest areas increasing the need for training, improved time management, and development of new work techniques.

Objective 3: Reduce the boating violation rate to 0.15% by FY 2000.

Measure (1): Percentage rate of violations per 100,000 registered watercraft.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	0.25	0.20	0.18	0.18		
Targets	0.20	0.20				
Hours worked	16,900	13,700				

DEFINITION, RATIONALE, DATA SOURCE:

The measure is a calculated percentage of the violation rate per 100,000 registered watercraft. It is derived from the total number of criminal citations and warnings issued by conservation officers per year for violations of watercraft and boating laws and rules.

The measure is relevant to the Division's watercraft and boating regulatory activities because it is a direct measure of the rate of violations/100,000 registered watercraft. Data on actual hours worked is provided to show a consistent level of effort for F.Y. 1990 - F.Y. 1992. Level of effort in F.Y. 1993 decreased in direct response to cool summer weather which decreased boating activities significantly.

Registration data was obtained from the DNR License Bureau. Violation and effort (hours) data was obtained from the Division's computerized recordkeeping system which contains records of all arrests, warnings, and hours worked by activity category.

DISCUSSION OF PAST PERFORMANCE:

Weather conditions greatly influence the level of boating activity which was readily apparent in the Spring and Summer of 1993. Cool weather significantly decreased the amount of boating conducted on Minnesota lakes and rivers.

PLAN TO ACHIEVE TARGETS:

The Enforcement Division has prioritized boating enforcement activities, especially alcohol enforcement, for many years. The division will continue to prioritize boating enforcement in the future by utilizing work hours previously expended upon lower priority activities.

The increase in personal watercraft (water scooter) registrations and substantially higher accident rate for these watercraft will cause a shift in emphasis to increase enforcement activity levels on this type of watercraft.

OTHER FACTORS AFFECTING PERFORMANCE:

Objective 4: Maintain the hunting accident rate at or below .005% per 100,000 licenses sold.

Measure (1): Percentage rate of all reported hunting accidents per 100,000 licenses sold.

Actual Performance	F.Y. 1992	F.Y. 1993	F.Y. 1994	F.Y. 1995	F.Y. 1996	F.Y. 1997
Actual	.005	.005	.005	.005		
Targets	.005	.005				
TOT Lic. sold	835,000	828,000				
Cum. students cert.	732,000	755,000				

DEFINITION, RATIONALE, DATA SOURCE:

The measure is a calculated percentage of all reported hunting accidents per 100,000 hunting licenses sold. It is derived from hunting accident reports required by law to be submitted to the commissioner being divided by the total number of hunting licenses sold expressed as a percentage.

The measure is relevant to evaluating the effectiveness of DNR Hunter Safety and Education Programs for several reasons:

- over the period measured the hunting framework (i.e. seasons, methods, and regulations) have been relatively constant.
- the number of hunting licenses sold has remained relatively consistent.
- the significantly large cumulative number of students certified to date in Firearm Safety, Advanced Hunter Education, and Bow Hunting Education.

Given stable regulations, seasons, methods, and license sales the decrease in the accident rate must be associated with the long history of safety education in Minnesota. While no data is available on what percentage of certified students have died, moved out of state, or no longer hunt, it is logical to assume that a significant percentage (over 50%) of license buyers in Minnesota have had some form of safety education. Cumulative students certified reflect all students certified in Firearm Safety since 1956, Advanced Hunter Education since 1976, and Minnesota Bowhunter Education since 1989.

License sales date was obtained from the DNR License Bureau. Students certified data and accident report data was obtained from the records of the Enforcement Division's Safety Training Unit.

DISCUSSION OF PAST PERFORMANCE:

No data exists to determine the number of students certified that continue to live in Minnesota and hunt. This data would greatly enhance the Division's ability to equate the decrease in the hunting accident rate/100,000 licenses sold to the effects of Hunter Safety Education Program. Absent that data the Measure becomes an effectiveness measure by the elimination of other factors which could effect hunting accidents.

PLAN TO ACHIEVE TARGETS:

The Enforcement Division Strategic Plan has identified education as a major component of achieving voluntary compliance with laws and rules. Educational activities will be stressed in addition to traditional law enforcement services to create a better educated and informed hunting public. This awareness will equip the hunting public to be safer both in the field while and when storing firearms in the home.

The Division has requested two Investment Initiatives targeted at school aged youth and adult violators to improve awareness of laws and improve safety.

OTHER FACTORS AFFECTING PERFORMANCE:

SUMMARY

AGENCY: **Natural Resources, Department of**
PROGRAM: **08, 09, 10, 11 - Operations Support**

EXPENDITURES AND STAFFING (F.Y. 1994)

	($ in Thousands)
Total Expenditures:	$ **35,980**
From State Funds	$ 34,170
From Federal Funds	$ 1,810
Number of FTE Staff:	446.8

PROGRAM GOALS:

- To employ management strategies and technologies that facilitate the most effective and efficient use of information and resources in support of natural resources management. (No specific statutory authorization.)
- To provide accessible, useful, and responsive Department of Natural Resources (DNR) information, products, and services to the department's internal and external customers (M.S. Chapters 16A.124, 16B.19, 363 and the Americans With Disabilities Act).
- To ensure that the DNR meets all statutory mandates for administrative management of department operations (M.S. Chapters 3, 13, 15, 15A, 16A, 16B, 43A, 83A-110A, 116P, 179; Laws of 1993; Chapter 172).

DESCRIPTION OF SERVICES:

The Operations Support Program provides professional management and administrative support services to program operations in the central office and regional offices. These include specialized expertise in financial management, human resources management, employee safety and health, procurement, facilities management, fleet management, engineering and surveying, real estate management, information and education, information systems, volunteer management, license services, and planning and policy development.

The program accomplishes this purpose by:

- Overall management of the DNR, formulation and establishment of priorities and policies for implementation of natural resource management, and integration of department operations into a cohesive management direction.
- Providing leadership and direction in developing ecosystem-based resource management concepts and plans so that individual discipline efforts support a common goal and integrated decisions are made.
- Providing liaison services for DNR programs to other governmental units and the agricultural community.
- Establishment of internal financial management policies and procedures; coordination of the biennial budget, capital budget, and annual spending plan; budget control; revenue and general accounting functions; internal audits and coordination of legislative and federal audits; and provision of financial information.

- Procurement, distribution, and issuance of fish and wildlife licenses, administration of wildlife hunting lotteries, various recreation vehicle registrations and cross-country ski passes, and watercraft titling.

- Administration and maintenance of the DNR computer center, data entry services, geographic information system, telecommunications, and library services.

- Development of DNR's strategic planning process and facilitation of local and regional natural resource planning efforts; conducting management and organizational analysis, including collecting and evaluating customer survey data; and administration of interdisciplinary environmental review and policy development.

- Communication to the public about natural resources through accessible information services and news, special events, and publications.

- Human resource management, employee development, labor relations, affirmative action, volunteer recruitment, training, and placement.

- Coordination of the maintenance, repair, and rehabilitation of DNR buildings; management of the department's procurement warehouse, employee safety and health, and property management programs; and administration of fleet and fire emergency support programs.

- Providing professional real estate management services for issuance of land leases, utility licenses, and road and flowage easements; facilitating acquisition of land; selling surplus DNR real estate; reviewing and auditing Permanent School Fund land; maintaining the DNR land management information system; and calculating and certifying payment in lieu of taxes and other ditch assessments.

- Providing professional engineering, architecture, land surveying, landscape architecture, and recreational mapping products and services to natural resource managers and the public.

The organizational units included in the Operations Support Program include the Commissioner's Office; the Bureaus of Management Information Services, Real Estate Management, Field Services, Engineering, Licenses, Financial Management, Information and Education, and Planning (including Volunteer Programs); and Regional Administration.

BACKGROUND INFORMATION:

MEASURES OF ACTIVITIES (A), WORKLOAD (W), UNIT COSTS (UC), OTHER DATA (O)

Type	Measure	F.Y. 1993	F.Y. 1994
A	No. of design, architectural, survey and mapping projects	550	593
A	Dollar amount of construction projects bid each year (millions)	$6.0	$6.0
A	No. of recreational unit maps worked on each year	242	365
A	No. of properties acquired each year	260	145
A	Properties sold/transferred/gifted each year	240	369
A	No. of environmental review projects completed	281	247
A	No. of phone inquiries to DNR Information Center answered *	136,000	140,000 (e)
A	No. of central office media advisories, news releases *	1,012	1,058 (e)
A	No. of position classifications which DNR (not DOER) determines	78	223
A	No. of exams for positions handled by DNR rather than DOER	25	33
A	No. of volunteer hours contributed	267,000	300,000
A	No. of License Bureau sales transactions **	29,965	46,965

A	No. of garage sales and auctions of surplused items to public	6	8
A	No. of workers' compensation claims processed	294	309

* Data collected and reported on calendar year basis.
** Does not include any registrations.

PROGRAM DRIVERS:

- **Support for Ecosystem-Based Management:** As the Department of Natural Resources shifts focus to more locally based collaborative management with stakeholders and greater consideration of the state's resources as being part of interconnected ecosystems, operations support units are reorganizing or redirecting their internal and external services to support this focus. This is particularly evident in the Management Information Systems Activity and the Regional Operations Support Activity but also impacts every service from fleet and facility management, to planning, to human resources training efforts.

- **Management Through Teamwork**: Considerable effort has been made to develop and empower teams throughout the department to address natural resource and organizational management issues. This is particularly evident in the Regional Operations Support Activity. Although this extends the amount of time required for decision-making, it is expected that the quality and implementation of decisions will be enhanced through broadened input and improved acceptability.

- **Customer Service**: This program serves both internal and external customers and relates to those customers thro service and "control" functions mandated by law, statute, or statewide policies. With the goal of serving better and increasingly fewer financial and human resources, many of the units are participating in restructuring and realignme of duties and functions to facilitate better communication, cooperation, and integration of work. In addition, these programs are improving communications by providing customers with clearer descriptions of their own services, improving written policy and procedures for managers and other employees, providing training, and expanding planning and decision-making processes to include stakeholders and other interested parties.

  Relations with external customers are being improved by developing and maintaining liaisons with other agencies, expanding accessibility of department information and services and continuing partnerships with stakeholders and other government units to address natural resources issues.

- **Cost Efficiency and Effectiveness/Investment in Technology**: The continuing reduction of financial resources for support services is straining our ability to maintain the department's infrastructure and service level through more cost-effective and efficient means. Processes are being streamlined, services are being consolidated, duplication of services is being eliminated, and services are being contracted out in an attempt to reduce the cost of providing support services. A major issue for this program is the conflict between need to reduce costs and need to make initial investments in technology for long-term efficiency and effectiveness gains. The implementation of the new Statewide Systems Project for replacing existing personnel, financial, and procurement computer systems and processes is an example. Another is computer-aided design stations and automated field stations which improve productivity by increasing the accuracy and timeliness of engineering functions and significantly reduce the person hours needed per project. Automated inventory, record project management, and billing systems assure that financial, equipment, supplies, and human resources and costs of those resources are allocated or attributed to each DNR program. Also, computer networks and telecommunications technology improves the frequency, quality, and timeliness of departmental communications, so that necessary coordination and input take place for all department decision-making and planning. Development of department-wide natural resources databases--most importantly, the geographic information system database--not only helps us improve the basis for decision-making, but makes that information more accessible and timely for DNR customers. All of these technology improvements require an initial investment that pays back in increased productivity and effectiveness over longer periods of time than that reflected in a budget period.

The continuing management challenge for Operations Support is balancing cost efficiency and effectiveness with customer services while carrying out activities, some of which are legally mandated.

APPENDIX

AGENCY: Natural Resources, Department of

ANNUAL PERFORMANCE REPORT PROCESS:

The Department of Natural Resources established an internal team of Performance Report Coordinators to develop the performance report, which included the following groups.

DNR OFFICE OF PLANNING: Provided overall coordination and assistance for report revisions based on Department of Finance instructions and the Legislative Auditor's comments on the draft report.

WORKER PARTICIPATION COMMITTEE: Reviewed the Legislative Auditor's commends on the Draft DNR Annual Performance Report and provided assistance to Report Coordinators for improving the report. Assigned "liaisons" to work directly with the Report Coordinators in preparing the revised report.

REPORT COORDINATORS: Took the lead responsibility for preparing program goals, objectives, and measures in the required format. Ensured Program Managers, Division Directors, and Bureau Administrators were involved in the report preparation and approved the final product.

External clients and stakeholders were indirectly involved in the report preparation. Through each program's planning process, clients and stakeholders participate in developing priority goals and objectives for individual programs. Report Coordinators drew upon this information in developing the performance report.