FISH MANAGEMENT

Program Evaluation Division
Office of the Legislative Auditor
State of Minnesota

Program Evaluation Division

The Minnesota Legislature established the Program Evaluation Division within the Office of the Legislative Auditor in 1975. The division's mission, as set forth in statute, is to determine the degree to which activities and programs entered into or funded by the state are accomplishing their goals and objectives and utilizing resources efficiently.

The division conducts six to eight major evaluations each year. Each evaluation includes a *program review*, which describes program activities. In addition, most evaluations address: 1) *compliance issues*, which examine whether the program is implemented consistent with law and legislative intent, 2) *economy and efficiency issues*, which assess whether the program is managed efficiently and cost effectively, 3) *program effectiveness issues*, which determine whether the program is achieving its objectives, and/or 4) *policy issues*, which concern the impact of current state policy and the costs and benefits of policy alternatives.

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February 1986

Program Evaluation Division
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State of Minnesota

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STATE OF MINNESOTA
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JAMES R. NOBLES, LEGISLATIVE AUDITOR

February 4, 1986

Senator Randolph W. Peterson, Chairman
Legislative Audit Commission

Dear Senator Peterson:

In June 1985, the Legislative Audit Commission directed the Program Evaluation Division to review the state's Game and Fish Fund and evaluate the performance of the Department of Natural Resources' fish management program.

This report shows that the fish management program is generally well run, but cites the need for clearer statewide policies, better internal management controls, and a more efficient fish stocking program. The report also examines financial controls over the Game and Fish Fund and analyzes changes in revenues and expenditures.

We would like to thank employees of the Department of Natural Resources' regional and area offices that we visited. In addition, we would like to thank the staff of the U.S. Fish and Wildlife Service for their advice and cooperation.

The study was conducted by Tom Walstrom (project manager), Jo Vos, and Pam Neary.

Sincerely yours,

James R. Nobles
Legislative Auditor

Roger A. Brooks
Deputy Legislative Auditor
for Program Evaluation

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EXECUTIVE SUMMARY

The Department of Natural Resources (DNR) has the responsibility for managing the state's fish and wildlife resources. The department's fish and wildlife management activities are financed from the Game and Fish Fund. At the request of the Legislative Audit Commission, our study examined the financial status of the fund and the administration and effectiveness of the largest program financed from the fund--the fish management program.

We examined how well the fish management program is organized, administered and delivered, and how successful the program has been. We looked specifically at how well DNR has managed the fish stocking, evaluation, and stream management components of the fish management program. We also examined the financial status of the Game and Fish Fund in conjunction with a financial audit of DNR in order to assess whether DNR was expending funds in compliance with statutes, whether proper controls over the fund were in place, and how well DNR had managed the Game and Fish Fund.

Overall, we found that DNR is doing a fair to good job with its fish management program. The program has improved notably over the last ten years. The department has recently made several improvements and is in the process of making others that show further promise of enhancing fishing and improving its management of the program. Nonetheless, we noted a number of improvements the department can make both in its administration and in fish management activities to help make the program more efficient and effective.

A. BACKGROUND

Minnesota, "the land of 10,000 lakes", has always been known as a good fishing state. Minnesota waters are home to over 140 species of fish, and many of the visitors to the state each year come in pursuit of them. DNR issues over a million licenses each year and a total of almost 2 million anglers fish Minnesota waters annually. These licenses account for more than $13 million in fees paid into the Game and Fish Fund each year, as

well as a significant amount of additional economic activity. It is estimated that anglers spent over $515 million in Minnesota in 1980.

Fishing pressure in Minnesota is high, especially on some waters, but still not as high as in some other states. Despite the amount of fishing pressure, the fishery resource is healthy. However, increasing pressure from development, pollution, an increasingly more efficient angler, and from increased fishing all contribute to a degradation of the resource.

DNR must balance the increasing user demands and increasing threats to the habitat base to ensure that future generations will find the fishery resource in a healthy condition. And the department must do so in the face of steadily increasing costs.

The department will spend over $11 million in 1986 to manage the state's fishery resource. The department's major management activities include fish production and stocking, evaluation and research, habitat protection and improvement, stream management, and regulation. The department operates from 27 area offices in six regions around the state.

B. ADMINISTRATION

We examined DNR's Fisheries Section's organization and staffing, planning, budgeting and reporting systems in order to evaluate the administration of the program. Overall, we rate the administration of the program as fair. Although the department is actively addressing some deficiencies, a number of problems remain. We found that the Fisheries Section needs improvements in central and field office organization and staffing levels, reporting systems, budgeting systems, and public information efforts.

We found several problems with central office organization and staffing.

- More centralized responsibility is needed for fish production and distribution.
- Clarification of resource unit roles is needed.
- Staff recruitment is difficult in the central office.

With regard to field office organization and staffing we found that workload imbalances exist between area offices and that the role of the regional supervisor needs clarification. We recommend that:

- DNR should develop a formal staffing plan and clarify the role of regional supervisors.

We also found that there could be an improvement in communication between the central office staff and the field offices and also between field offices.

DNR has recently begun a statewide comprehensive planning process. This has been a weakness in the division that DNR has recognized and taken positive steps to address. When developed, the comprehensive plan should provide a good basis for fisheries management. In the meantime, there are some steps that DNR should take. One such step is the development and adoption of a formal fish management policy statement for the state. The last formal statement of policy was developed in 1956 and updated in 1964. The department did develop a draft of an updated policy in May 1985, but plans to take no further action on it. A statewide fish management policy is especially important for a management system that is largely decentralized. Program managers need a clear vision of where the program is heading to ensure continuity and consistency of action throughout the state. A statewide policy also affords the public the opportunity to know what the department is doing and why.

- The Fisheries Section should adopt and disseminate a formal fish management policy for the state. Attention should be paid to its consistency with other statements of policy and intent. Commissioner's Orders should be developed as needed.

The department also initiated a lake management planning process in 1983. This planning process is a big step forward in formalizing management plans for Minnesota lakes. Good progress has been made in implementing the process, but we noted some minor problems with the process for assigning priorities to lakes across the state. In addition, we found that the department does not fully integrate the results of the planning into subsequent management decisions. We recommend that:

- The department should more actively review lake management plans.

The department currently lacks the capability to adequately manage and control program activities. One of the most serious problems has been the lack of a system to track and determine actual program costs by activity. The department is currently implementing a cost accounting system that will provide the basis for good control. However, management and task control systems are not in place. For example, it is not possible to track progress on the operational plan, no exception reporting systems are in place, and no reconciliation of proposed, planned, and actual accomplishments takes place. As a result, management does not have the information with which to allocate or reallocate resources in an objective way. We recommend that:

- As the cost accounting system becomes operable, the department needs to develop management and task control systems based on it.

The department also needs to improve its information base for use in making management and budgetary decisions. Although the department collects a lot of information on resource supply (in the form of lake surveys and test-netting), it is not easily retrievable or easily used for making management decisions. We recommend that:

- The department should take steps to develop a management information system that includes resource supply and demand information.

Such a system should allow the department to examine whether the return from management actions is commensurate with the expenditures made. The department should also develop a plan for spending fishing license surcharge funds that extends several years into the future. The department should identify the criteria that it uses to select projects. We would suggest that each project be evaluated on the basis of the benefit to be derived from the expenditure.

One of the primary objectives of the fish management program is to serve the needs of the angling population. Because of this goal it is important for DNR to communicate with the angling public, both to get information on angler desires, and to tell the public what it is doing to manage the resource and why. It is also important for DNR to help educate present and future generations of anglers about the fisheries resource.

In general, we found that fisheries must be more proactive in its public information and education program. Every angling group that we talked with and most DNR staff agreed that improving public education and public relations should be a high priority for DNR's Fisheries Section. The department has taken a few steps in this direction but needs to become more active.

- The central office should ensure that each area and regional office has an adequate supply of informational and educational materials available for public distribution.

- The department should ensure that its area and regional fisheries staff receive training in public information and education programs.

The extent to which the department gains public acceptance of its management policies and strategies is directly related to its abilities to successfully carry out its programs. The Citizen's Commission to Promote Hunting and Fishing in Minnesota made several good recommendations addressed to public education that should be fully implemented. In addition, we believe that the department can reach the most anglers by having information on the department's fish management efforts available at the point of license sale. Expanding public education takes money. If the department structures the efforts in line with federal guidelines, public education efforts can be 75 percent reimbursed from Wallop-Breaux program federal funds. Fishing license surcharge funds might also be used.

C. FISH MANAGEMENT ACTIVITIES

We found that overall DNR is doing a fair to good job in its fish management program. DNR is doing several things well, for example, the Lake Superior program, trout stream work, and access improvement.

We also found several areas need improvement. For example, the department needs to improve its management of walleye production and distribution, and monitor stocking proposals and results more closely.

The fish stocking program is probably the major activity of the department. We estimate that over 30 percent of field staff activity is in some way associated with the stocking program. We examined a sample of 119 lakes of the approximately 1500 to 2000 that DNR actively manages for fishing. We found that Minnesota's stocking policy guidelines are generally in agreement with the results of research findings about stocking effectiveness. However, we found that DNR did not always follow its policy guidelines in practice. We also found that DNR did not always follow its own management recommendations in practice. Despite these inconsistencies, we found that fish populations of the stocked species were good on 67 of the 81 lakes in our sample that had been stocked.

We conclude that DNR is doing a good job of fish stocking on most lakes we examined. However, we noted a number of lakes where it is doubtful stocking is needed, and some where stocking has not worked. Clear policies outlining when stocking should be discontinued would greatly enhance managers' abilities to deal effectively with the public when managing these lakes.

- DNR needs to develop clear policies which will allow for discontinuance of ineffective fish stocking. Lakes should not be stocked just because of public pressure or because it has been done in the past.

While we found that overall DNR's fish stocking program is effective, we found a number of inefficiencies in the way the program is managed. For example, we found that stocking proposals and actual stocking occurs on some lakes at much higher than recommended rates, while other lakes go unstocked or are stocked at lower than optimal rates. We recommend:

- Regional managers should review stocking proposals for reasonableness, and justify to the central office proposals higher than guidelines.

- DNR fisheries proposals and stocking should more closely follow department guidelines.

DNR justifies overproduction because of fear of a production failure within an area or region, which would require compensation from other regions. However, an adequate planning system before the egg take and an adequate reporting system during the time eggs are being stripped should prevent excessive overproduction.

- DNR should take steps to ensure that fish production more closely follows stocking proposals.

We found that significant capacity for hatching walleye eggs already exists in the state. DNR also is adding two new walleye hatcheries this year. We conclude that since current hatchery capacity is adequate, DNR should carefully examine the need for any additional hatcheries.

Certain areas of the state have more and better fish rearing ponds than others. DNR has traditionally managed rearing pond production on a regional basis. Although fish eggs are largely provided from a few areas in the state, the eggs or fry have been transported close to where they ultimately will be stocked. Production of fingerlings has been consistently better in certain areas, but fingerlings have seldom been transported outside the region. As a result, some areas of the state have more fingerlings than they need, and other areas do not have as many fingerlings of the proper size as they need.

- DNR should coordinate fish production on a statewide basis and make greater use of the most productive areas for raising fingerlings.

The Fisheries Section uses several approaches to evaluate its activities. Generally, we found that DNR had increased the amount of evaluation activity it conducts since the 1960s and 1970s. We found that most lakes in our sample had only one survey in all the years prior to the 1970s. In our sample of 119 lakes, the average frequency of surveys was 1.3 between 1970-1979, and almost as many, an average of 1.1 per lake, between 1980-1985. Although DNR has increased its survey activity, we believe that more survey and creel census work needs to be done. We found that 32 of the 119 lakes in our sample did not have survey and evaluation plans. We recommend that:

- DNR should have evaluation plans in place on all actively managed lakes.

Creel census information is becoming more and more important for effective management of the fishing resource. Demands on the resource have increased dramatically as fishing methods and equipment have improved. Concurrently, shoreline development has depleted spawning grounds, degraded water quality, and diminished aquatic vegetation. As it becomes more necessary to balance public demands, information about public preferences, recreational uses, and accurate fish harvest counts increasingly will be needed to make informed decisions. With increased federal aid, more money should be available to increase creel and other evaluation activities.

- We believe DNR should plan and budget for more creel census and other evaluation activities.

D. GAME AND FISH FUND

Like most states, Minnesota funds the activities of its Department of Natural Resources (DNR), Fish and Wildlife Division, primarily through license fees from resource users. In Minnesota these fees are deposited in a separate fund of the state treasury known as the Game and Fish Fund. The fund is dedicated to pay for the activities of the Fish and Wildlife Division.

Our review of the Game and Fish Fund included an examination of certain financial transactions of the fund during fiscal year 1985, as well as the basic budgetary and financial controls over the fund. We also reviewed current expenditures from the fund, and examined the fund's current status.

Individual transactions of the fund appeared sufficiently well controlled.

- We did not find any evidence that DNR was spending Game and Fish Fund money on unallowed activities.

We also found that overall financial management of the fund, lacking in the past, has recently improved. The department is also taking a major step toward improving financial controls and management information through the implementation of a new cost accounting system.

We found that statutory restrictions on the expenditure of some semi-dedicated revenues of the Game and Fish Fund are unclear.

- Clarification is needed regarding certain statutory spending restrictions placed on semi-dedicated revenues of the fund.

We also found that the department needs to significantly improve its management of federal aid programs. DNR can improve its cash flow from federal aid and increase investment income by taking the following steps.

- DNR should submit its costs incurred on federally approved and reimburseable projects once per month.

- DNR should change the project agreement dates for federal aid projects to the earliest possible date after the federal funds become available to the state.

- DNR should actively seek immediate authority for a letter of credit from the USFWS. DNR should identify all objections to a letter of credit and submit a plan to USFWS that addresses all deficiencies necessary to receive approval for a letter of credit.

We also examined the general trends in revenues and expenditures in the Game and Fish Fund and found the following:

- Total Game and Fish Fund revenues and expenditures have grown over time, in both nominal and constant dollars.

- Most of the growth in revenues and expenditures is attributable to special purpose programs that have been added by the Legislature in the last ten years.

- Expenditures on basic fish and wildlife management programs have not grown in constant dollars.

- The Game and Fish Fund has been operating at a deficit since 1982. Without the use of fishing license surcharge funds, the balance of the fund would have been negative in 1985.

- The Legislature may want to reexamine the current mix of revenue sources and expenditures of the fund. Many have suggested that current license fees are no longer adequate to finance all of the current and proposed activities of the fund.

INTRODUCTION

Chapter 1

Minnesota, the "land of 10,000 lakes", has always been known as a good fishing state. Still, periodic complaints are heard that the fishing isn't what it once was. Concerns have been expressed recently that Minnesota's resource base has degraded significantly, and that a reinvestment is needed. The Legislature recognized some of this sentiment in 1983, when it enacted a fishing license surcharge and called for an expanded fish management program. The financial management of the Game and Fish Fund, which finances fish and wildlife activities, has also been a concern of some legislators.

As the result of these concerns, the Legislative Audit Commission directed the Program Evaluation Division to study the activities of the largest program funded by the Game and Fish Fund -- the fish management program -- and to examine the financial controls and administration of the fund.

A. BACKGROUND

1. RESEARCH QUESTIONS

Our analysis of the Department of Natural Resources' (DNR) fish management program focused on the following questions:

- How well is the fish management program organized, administered and delivered?
- How successful is Minnesota's fish management program?
- To what extent does statewide planning for fish management occur?
- How efficient and effective is the state's fish production and distribution program?
- Does the department have an adequate reporting and evaluation system?

We also examined the financial status of the Game and Fish Fund in conjunction with a financial audit of DNR in order to assess the following questions:

- Have expenditures from the Game and Fish Fund been made in accordance with Minnesota statutes?
- What have been the historical levels of revenues and expenditures for the programs financed through the Game and Fish Fund?
- Are proper controls over the fund in place?
- How well has DNR managed the expenditure of game and fish funds?
- Has DNR charged the appropriate amounts to the Game and Fish Fund for administration and other shared departmental functions?

2. METHODOLOGY

To answer these questions, we interviewed all central office fisheries professional staff as well as staff in other related divisions of the department.

We visited all six regional fisheries offices and interviewed regional fisheries supervisors. We also interviewed 22 area fisheries supervisors and visited 20 areas and four of the state's coldwater hatcheries. We also interviewed various officials at the U.S. Fish and Wildlife Service, the University of Minnesota, and other states' fish and wildlife departments.

We selected a stratified random sample of 119 lakes and examined management activities, survey results, and recommendations over time. A technical review of 16 of these files was also conducted for us by staff from the U.S. Fish and Wildlife Service. In addition, we reviewed reports and studies of Minnesota's fish management program as well as studies of programs in other states.

We also received input from several sport fishing groups. We sent a letter to various groups requesting views on DNR's fish management performance. The groups' responses are included as an appendix.

In order to assess questions about the status of the Game and Fish Fund we examined revenues and expenditures over time, sampled expenditures from both wildlife and fish management accounts, and interviewed the department's financial officials regarding the fund.

We present our analysis in four parts. First, in this chapter, we examine the fishery resource that DNR manages. In Chapter 2 we examine how DNR has organized and administered the fish management program. In Chapter 3 we look at the basic activities, such as fish stocking and stream management, carried out by the field fisheries staff to manage the resource. In Chapter 4 we review the Game and Fish Fund.

In general, we found the department engaged in several positive activities to preserve Minnesota's fisheries resource. This report makes the following major points about how well the Department of Natural Resources has conducted its fish management responsibilities:

- DNR has been successful in expanding fishing opportunities through the use of aeration systems, lake rehabilitation projects, children's and urban fishing programs, and by increasing designated public accesses and acquiring trout stream easements.

- The Fish and Wildlife Division has embarked on a needed comprehensive planning process to help direct future management activities. DNR should accompany this planning activity with a thorough review of its data on resource supply, demand, harvest rates, and economic impact.

- The Fisheries Section needs a better system and process for managing information on its activities.

- Central office staff roles are not well defined.

- There is poor communication within the department's Fisheries Section.

- The department has good working relationships with many public sports groups. However, the department is not aggressive enough in its public information and education program. DNR should significantly improve its public education efforts.

- The number of lake surveys has increased considerably since the 1970's. DNR has also instituted a process for individual lake management planning. Despite these positive steps, more remains to be done to assess the success of DNR's fish management activities.

- Walleye production and distribution are not adequately coordinated on a statewide level. Statewide coordination of fish production and distribution is needed.

- The capacity of present walleye hatching facilities is adequate to meet future needs; DNR should carefully examine its plans for increasing hatchery capacity.

- DNR has become more scientific in its stocking efforts in the last ten years. Stocking lakes without public accesses has declined markedly since the 1960's, and more evaluation is being done of the success of stocking. However, we found a number of stocking practices of questionable efficacy still occuring. In particular, DNR tends to emphasize its walleye stocking program, even where it is not clear whether stocking has been effective.

B. MINNESOTA'S FISHERIES RESOURCE

1. SCOPE OF THE RESOURCE

The Department of Natural Resources (DNR) is responsible for managing all public waters in the state. Public water is defined as all streams and rivers and any body of water of at least ten acres. Minnesota has over 15,000 lakes and lake basins that fit this criteria. There are also approximately 15,000 miles of streams and rivers running throughout the state. Water covers at least 2.5 million acres of the state, or about six percent of its total land mass.

Minnesota has more acres of fishable inland waters than neighboring states. There are approximately 4,400 fishing lakes that are the responsibility of DNR's Fisheries Section. DNR actively manages approximately 1,500 to 2,000 of these lakes for fishing.[1] In addition, fisheries management affects approximately 7,000 miles of streams.

Minnesota offers a wider variety of fish species than most other states. The state's lakes and streams are home to approximately 144 species of fish, including the walleye, northern pike, musky, salmon, trout, bass, catfish, bluegill, crappie, perch, and bullhead.

Minnesota compares favorably to other states in the amount of fishing activity. In 1984, Minnesota had the third highest number of license holders; only California and Texas--both of which have substantially higher populations than Minnesota--had more. In addition, Minnesota was one of the highest ranking states in the number of non-resident fishing licenses sold in 1984.

Although Minnesota ranks high on measures of fishing licenses issued, a number of other states' waters are fished more often than Minnesota's. As Table 1.1 shows, fishing days are higher in several states even though they issue fewer licenses. This is probably due to a higher number of days of potential fishing or just better weather.

Minnesota issues more fishing licenses per capita than any state, but Alaska. Almost 27 percent of Minnesotans fish on a regular basis,[2] a figure which is again, second only to Alaska.

During license year 1985, DNR issued approximately 750,000 resident fishing licenses and 250,000 non-resident fishing licenses.[3] Because

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[1]By active management we mean DNR regularly surveys, stocks fish, or engages in other management activities on the lake. DNR is responsible for habitat protection and permit review on all 4,400 lakes.

[2]Regular fishing is defined as more than ten fishing trips per year.

[3]Fishing license year 1985 runs from March 1, 1984 through February 28, 1985. DNR believes the number of anglers in the state is somewhat higher than the USFWS and Bureau of Census estimates. DNR estimates there are over 2 million anglers in the state.

TABLE 1.1

MINNESOTA FISHING PRESSURE COMPARED TO OTHER STATES:
NUMBER OF DAYS, ANGLERS, AND PAID LICENSE HOLDERS

(In Millions)

1980

State	Total Days of Participation	Total Anglers	Paid License Holders*
Minnesota	21.5	1.66	1.45
Arkansas	15.3	.89	.63
California	60.5	3.75	2.18
Colorado	10.5	.92	.70
Florida	65.5	3.40	.70
Illinois	29.1	1.55	.75
Iowa	11.1	.64	.45
Michigan	44.5	2.28	1.32
Missouri	20.3	1.23	.87
New York	36.3	2.11	.90
Ohio	39.5	1.81	1.00
Oregon	14.2	.84	.72
Tennessee	19.2	1.16	.70
Texas	55.0	2.90	1.74
Wisconsin	29.4	1.82	1.51

Source: 1980 National Survey of Fishing, Hunting and Wildlife-Associated Recreation, U.S. Department of the Interior and Bureau of the Census.

*A paid license holder is one individual regardless of the number of licenses she or he may purchase.

combination licenses include at least two people, total licensed anglers in the state approach 1.5 million. Non-licensed anglers account for another 450,000 people[4], so the total number of anglers in the state is almost 2 million. Fees from license sales totaled more than $13 million. All fees are deposited in the state's Game and Fish Fund, which finances almost all fish management activities in the state.

[4]There are approximately 375,000 persons under 16 years of age and 75,000 persons over 65 years of age who fish. These peple are not required to be licensed. DNR believes the number of unlicensed anglers is somewhat higher.

Individuals 16 through 64 years of age must possess a license to fish in Minnesota.[5] Resident anglers currently pay a $6.50 license fee and a $2.50 fishing license surcharge--a total of $9.00.[6] Minnesota families may purchase a combined husband and wife license for a total of $13.00. Non- residents pay a total of $17.50 for an individual license and $22.50 for a combined husband-wife license. All licensed anglers pay an additional $.75 issuing fee. Table 1.2 lists 1985 fees for all resident and non-resident fishing licenses. Minnesota license fees are comparable to other states as Table 1.3 shows.

C. USE OF THE RESOURCE

Fishing pressure on Minnesota's waters is considerable. Many of the tourists who come to the state do so to fish. The money spent on fishing related equipment, bait, travel, and lodging contributes significantly to the state's economy. According to a 1980 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation in Minnesota, 1.7 million anglers fished a total of 21.5 million days in the state in 1980. About 30 percent of these anglers were non-residents.[7]

Anglers spent approximately $515 million in Minnesota during 1980; $226.5 million was spent on travel-related items while $288.5 million was spent on equipment, bait and other fishing items. This amounts to over $300 per angler or $26 per fishing day.[8] Fishing in Minnesota--by both residents and non-residents--is a big business.

Despite the amount of fishing pressure the state's waters receive, overall the fishery resource is healthy. DNR developed an index to determine whether survey netting results for the number and size of the game fish in Minnesota lakes are above or below statewide averages. Our study of 119 lake files shows that most waters are presently at or above the 1948 through 1967 statewide averages.

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[5]Certain groups of individuals receive fishing licenses free or may fish without licenses. For example, mentally retarded persons and disabled veterans may receive licenses free of charge. Correctional inmates, state hospital patients, Veteran's Administration hospital patients, and certain disabled employee groups may fish without licenses. Also, military residents stationed outside of Minnesota may fish without licenses when home on leave.

[6]The fees for resident fishing licenses have increased from $2.00 in 1962 to $9.00 today.

[7]*National Survey of Fishing, Hunting, and Wildlife Associated Recreation in Minnesota.* U.S. Fish and Wildlife Service and U.S. Bureau of the Census. 1980.

[8]Ibid.

TABLE 1.2

1985 MINNESOTA FISHING LICENSE FEES

	Fee
Resident Licenses[1]	
Angling, Individual	$ 9.00
Angling, Combination (husband and wife)	13.00
Dark House Spearing (additional to angling license)	7.50
Fish House or Dark House (each must be licensed)	5.00
Fish House or Dark House used for rental (each must be licensed)	17.50
Whitefish Netting (residents only) (additional to angling license) 100 foot net	5.50
Sportsman Angling, Individual	18.50
Sportsman Combination (husband and wife)	22.50
Trout and Salmon Stamp[2]	3.00
Non-Resident Licenses[1]	
Angling, Individual-Season[3]	$17.50
Angling, Individual-1 Day[4]	7.50
Angling, Individual-7 Days[5]	13.00
Angling, Combination (husband and wife)[6]	22.50
Trout and Salmon Stamp[2,7]	3.00
Fish House (portable only)	17.50
Issuing Fee	.75

Source: 1985 Minnesota Fishing Regulations, Minnesota Department of Natural Resources.

[1]Resident and non-resident license fees include the $2.50 surcharge.

[2]Persons over the age of 16 and under the age of 65 must obtain a Minnesota trout and salmon stamp in addition to their angling or sportsman license to angle in a designated trout stream, designated stream trout lake or Lake Superior.

[3]Changed to $18.50 for license year 1987.

[4]Changed to three day license and raised to $12.50 for license year 1987.

[5]Raised to $15.50 in license year 1987.

[6]Raised to $30.00 in license year 1987.

[7]Raised to $5.00 in license year 1987.

TABLE 1.3

1985 FEES FOR MAJOR FISHING LICENSES IN SELECTED STATES

	Minnesota[1]	Wisconsin	Michigan	New York	California[13]
Resident Licenses					
Angling, Individual	$ 9.00	$ 7.00	$ 7.00	$9.00	$13.00
Angling, Combination	13.00	12.00	7.00	--	--
Sportsman, Individual	18.50	25.50	31.00	16.00-23.00[9]	--
Trout and Salmon Stamp	3.00	3.00[3]	7.00	--	--
Miscellaneous	--	5.50[3]	--	3.00[10]	7.50[14]
Senior Citizens	0.00	0.00	1.00[6]	2.50[11]	2.00[15]
Non-Resident Licenses					
Angling, Individual-Season	17.50	18.00	15.00	20.00	35.00[14]
Angling, Individual-Daily	7.50[2]	5.50	3.50	--	3.00[14]
Angling, Individual-Limited	13.00[2]	8.50-11.00[4]	--	6.00-12.00[12]	13.00
Angling, Combination-Season	22.50	32.00	20.00	--	--
Trout and Salmon Stamp	3.00	3.00	7.00	--	4.00[14]
Miscellaneous					2.75[14]
Issuing Fee	.75	.25-.50[5]	Included in fees[7]	.50	.50
Miscellaneous	--	--	.25[8]	--	--

Source: Fees are taken from the statutes of each state.

[1] Minnesota license costs include the $2.50 surcharge.
[2] Minnesota's limited licenses are for 7 days.
[3] Resident daily sport fishing license.
[4] Limited licenses are for 4 to 15 days.
[5] There is a $.25 fee for each stamp issued and $.50 for licenses.
[6] Senior citizen fee includes all fishing fees and covers a spouse.
[7] Issuers may retain $1.00 of license fee for first license issued and $.10 for each additional license.
[8] These monies are used to fund conservation officers and anti-poaching programs; the fee is attached to each license and stamp.
[9] The lower figure covers hunting and fishing; the higher figure includes big game hunting.
[10] This is a three day license
[11] Persons 65-69 years old receive a combination license for $2.50. Those 70 years of age or more are not licensed.
[12] These licenses run from 3 to 7 days.
[13] California fees are higher for 1986.
[14] Inland water stamp is required in addition to the annual fishing license.
[15] The reduced fee is available only to those meeting certain income requirements.

The increasing pressure placed on the resource, however, threaten its ability to meet the future demands that the public will place on it. Good fish habitat is essential to an abundant resource; and habitat is adversely affected by an increasing human population and expanding development.

For example, lake shore development can harm the fishing resource. In the last fifteen years, development on or near lakes has expanded considerably. From 1967 through 1982, lakeshore development of permanent and seasonal homes increased an average of 83 percent for a sample of lakes that we examined.[9]

Increased fishing pressure can also have an adverse effect on the resource. Expanded tourism efforts by the state could potentially impact the quality of the state's fishery by attracting more anglers to the state. This is especially true if the increase in anglers is concentrated on the most popular waters.

In recent years, technological advances in fishing gear and bait have made it easier for both the average and the expert angler to catch fish. Increased public access, the use of off-road vehicles, and other factors have made it easier for the angler to get to the fish. As a result of all of these factors, fishing pressure is depleting the resource in some lakes.

The Department of Natural Resources has the responsibility to balance the increasing user demand and decreasing habitat base to ensure that future generations will find the fisheries resource in a healthy condition. And the department must do so in the face of steadily rising costs.

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[9]Information was not available on metropolitan area lakes.

ADMINISTRATION

Chapter 2

In this chapter we examine how well the Department of Natural Resources administers Minnesota's fish management program. To review DNR's fisheries administration, we examined the Fisheries Section's organization and staffing, planning, budgeting, and reporting systems.

Overall, we rate the administration of the fish management program as fair, but improving. We found improvements needed in central office and field office organization and staffing levels, reporting systems, budgeting systems, and public information efforts.

The chapter is organized into four parts: organization and staffing, planning, budgeting and reporting, and public information and education.

A. ORGANIZATION AND STAFFING

The Fisheries Section is located organizationally within DNR's Fish and Wildlife Division. The Fisheries Section has six regional administrative offices and twenty-seven area offices; each regional office supervises from one to seven area offices.

1. CENTRAL OFFICE

a. *Organization*

The fisheries central office has three units: research, operations, and resources, as shown in Figure 2.1. It is staffed with eleven professionals and five clericals.[1] The fiscal year 1985 operating budget for the central office was $1.2 million or approximately 15 percent of the total budget for fish management. Its operating budget for fiscal year 1986 is approximately $1.3 million.

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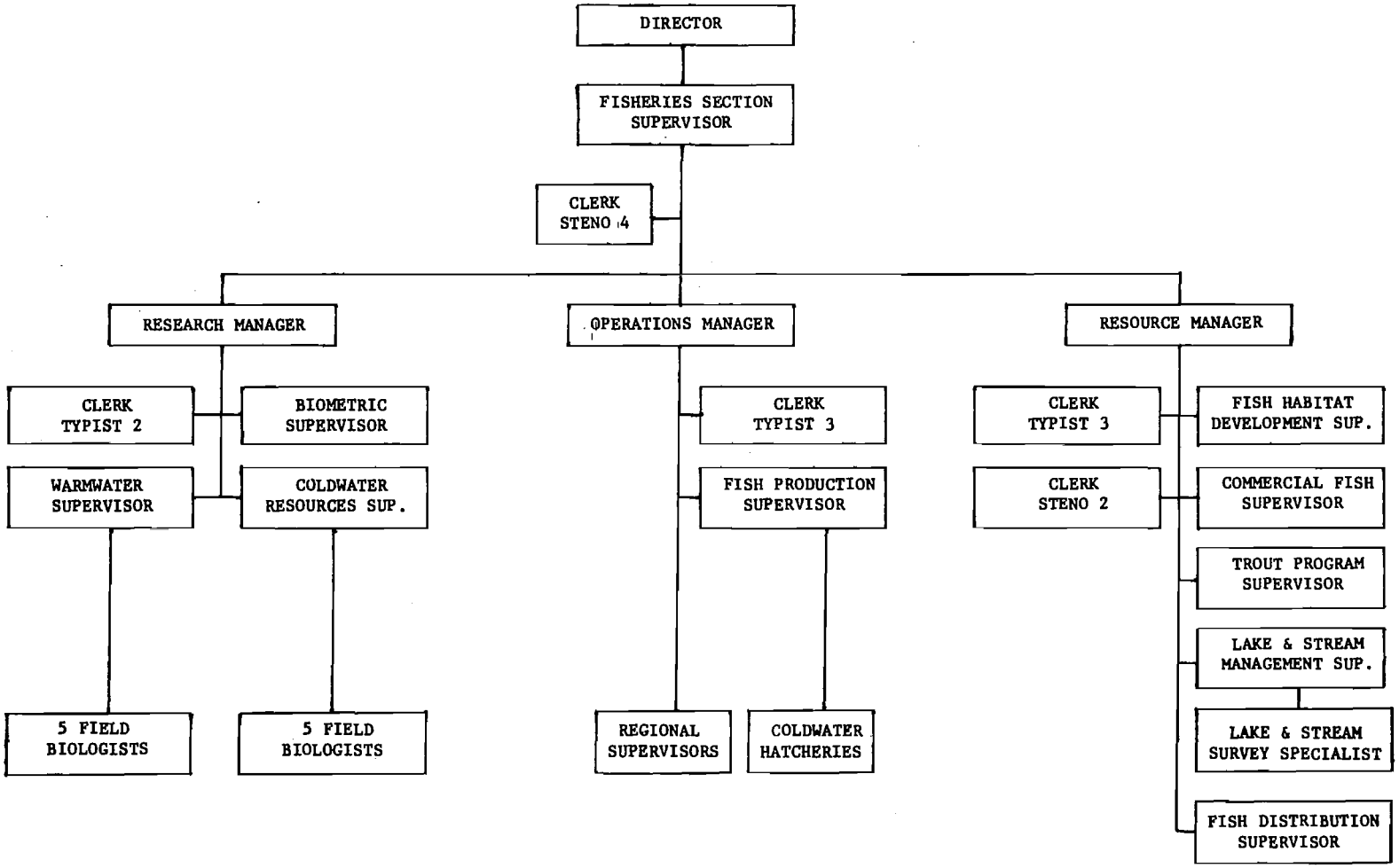
[1]Three professional positions are currently vacant.

FIGURE 2.1

ORGANIZATIONAL CHART - FISHERIES - CENTRAL OFFICE



Source: Department of Natural Resources, July 1985.

The research unit is responsible for providing staff with the information needed to help them effectively manage the fisheries resource. It is headed by a research manager and is divided into warmwater and coldwater subunits. The research manager and coldwater research supervisor are in the central office, and the warmwater research supervisor and 10 research biologists are located in area offices around the state.

The operations unit is largely responsible for the daily operation of fisheries programs. Through a production supervisor, this unit oversees the coldwater fish propagation and distribution program. The six regional fisheries supervisors also report directly to the operations manager. Twenty-seven area supervisors report in turn to the regional supervisors.

The resource unit is responsible for overall program planning, management and evaluation. It is made up of five program areas: fish habitat development, commercial fishing, trout, lake and stream management, and fish distribution.[2]

b. *Problems with Central Office Organization*

We found several problems with the organization of the central office.

- More centralized responsibility is needed for fish production and distribution.
- Clarification of resource unit roles is needed.
- Staff recruitment is difficult in the central office.

(1) *Production and Distribution*

We found that little statewide coordination exists for production and distribution of fish, especially for warmwater fish. As a result of the lack of coordination, large differences exist between fish stocking proposals, actual production, and stocking of fish. These problems are detailed in Chapter 3.

The production supervisor currently has line authority over the state's five coldwater hatcheries. Coldwater hatcheries are run year around. However, the production supervisor has no line authority over the state's 13 seasonal warmwater hatcheries run by area managers. We believe that warmwater production should be a statewide endeavor. It should be centrally coordinated in the same manner as the coldwater program.

- DNR needs to be able to coordinate where fish are produced and how many are produced on a statewide basis according to statewide priorities. To do this, it may be necessary to give the fish production supervisor some authority over warmwater hatcheries.

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[2]The distribution supervisor position has been vacant since the position was created in 1984.

The distribution supervisor's major responsibility is to ensure that fish produced get to the area offices that need them. This position has been vacant since it was created in 1984. Most of this work is seasonal; to the extent coordination occurs, it has been done by regional supervisors.

We believe that warmwater distribution should be centrally coordinated to ensure that stocking needs across the state are met in an equitable fashion. Because only minimal distribution coordination is done between regions, the system does not ensure that all lakes of high importance are stocked before lakes of lesser importance. This requires statewide rather than regional coordination. To ensure equity, central coordination of warmwater production and distribution will require that all lakes are assigned priority for stocking on a statewide basis .

- Warmwater fish distribution should be coordinated on a statewide basis. The fish distribution supervisor should have the responsibility to coordinate the distribution of warmwater fish.

The major responsibility of the fish production supervisor is correlating stocking requests with production quotas to ensure that an adequate supply of fish are produced to meet stocking demands. Numerous reports are prepared and submitted by field staff to the central office in order to do this. Although it would be relatively easy to automate many of the functions associated with this position, DNR has not done so. The job of the production supervisor would be simplified tremendously by automating this information. Automation would permit timely comparisons of stocking proposals with production needs and make it possible to easily cross-check the accuracy of the manual reports filed by area staff. In addition, automation of fish production data would also reduce the paperwork required of area managers.

- The department should automate its data collection and reporting system for fish production and distribution in order to coordinate it more effectively and efficiently.

If fish production and distribution information were automated, it may be possible for the department to assign additional responsibilities to the production or distribution supervisor. The department may eventually be able to combine the responsibilities for production and distribution into a single position.

(2) *Need to Clarify Resource Unit Roles*

Many positions in the resource unit have unclear roles and responsibilities. The department needs to analyze this unit's responsibilities and clarify the roles of program staff.

For example, the lake and stream management supervisor position has been vacant for approximately nine months. Previously this staff person was largely responsible for implementing the individual lake management planning program. A lake and stream survey specialist supports this position.

Two positions for lake management planning may not be necessary. The individual lake management program has already been implemented and, while we think the department should be doing more to monitor its implementation, we do not believe that it requires a full-time position. Furthermore, fisheries' major planning activity--comprehensive planning--is located in Ecological Services.

The trout supervisor position was recently filled. The role of this position is also unclear. There are currently four central office positions responsible in some way for the trout program--the coldwater research supervisor, the fish production supervisor, habitat development supervisor, and the trout supervisor. The fish habitat supervisor is responsible for lake rehabilitations, acquiring stream easements, and trout stream improvement projects. DNR is planning on transferring responsibility for trout stream improvement work to the trout program supervisor, however, much overlap in responsibility will remain.

The commercial fishing supervisor is responsible for monitoring the licensing of commercial fisheries and the live bait industry throughout the state. Approximately 300 commercial fishing licenses and 1,900 bait licenses are issued each year.

Commercial licenses vary as to the equipment permitted, time frame, species and harvest rate allowed. Production reports are routinely submitted to help ensure compliance with license requirements.

Commercial fisheries, however, are on the decline in Minnesota. Each year fewer licenses are issued and will continue to decline as the state proceeds in its commercial fisheries buyout. The 1983 Omnibus Fishing Bill required the department to phase out the commercial walleye fishery on Lake of the Woods by 1992; this was largely accomplished by 1985. While the state will continue to license commercial fisheries for other species as well as the bait industry, in our view these responsibilities may not require a full-time position.

- The department needs to clarify the roles and responsibilities of the resource unit. Potential exists for realignment of duties and reduction of positions.

While the current responsibilities of the resource unit may not require all of the currently allocated positions, we have noted a number of other efforts that DNR needs to devote attention to. We believe most of these efforts can be attended to by realigning duties of current central office positions. The department feels that additional responsibilities for new programs may require additional central office personnel.

(3) *Central Office Staffing and Recruitment*

The central office has had problems filling some central office positions. While we question the necessity of some positions, a number of central office positions have been vacant for extended periods. The department's inability to recruit for the central office was also noted by the Depart-

ment of Administration in its 1984 management study.[3] It reported that few financial or personal incentives existed for field staff to transfer to the central office. Consequently, the department's candidate pool for central office positions consisted of lower paid, less experienced field staff or staff without field experience.

DNR feels that much of the reluctance of field staff to transfer to central office positions stems from environmental concerns (a desire to stay in smaller communities) as well as job related concerns. Field positions usually offer more latitude and daily freedom in work assignments.

It should be noted that some central office positions tend to have few job classifications, making promotions difficult. This may hamper movement into the central office. In addition, the problem of unclear roles and responsibilities discussed in the previous section may discourage field staff from applying for central office positions. We believe that the central office staff would benefit from field experience and vice versa. In order to attract high quality applicants for central office positions, DNR and DOER may have to alter job classifications and financial remuneration for these positions.

2. FIELD OFFICES

a. *Organization*

There are six regional offices throughout the state: Bemidji, Grand Rapids, Brainerd, New Ulm, Rochester and St. Paul. Each is staffed with a regional fisheries supervisor and a clerical person for support.

Regional supervisors report directly to the operations unit manager in St. Paul. Regional supervisors share line authority over the coldwater hatchery supervisors with the fish production supervisor in St. Paul. Regional supervisors have line authority over warmwater hatcheries that are run by the area offices.

Each regional office supervises anywhere from one to seven area offices. Area offices carry out the daily work involved in lake and stream management. Each area office is managed by an area fisheries supervisor and staffed with varying numbers and combinations of natural resource fisheries specialists, technicians and laborers.

We found that workload imbalances exist among area offices and that the role of the regional supervisor needs clarification.

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[3] *Management Study of the Regional and Subregional Structure of Resources*, Management Analysis Division, Department of Administration, January 1984.

(1) *Workload Imbalances*

Table 2.1 compares regional and area offices in terms of staff and workload. Workload is expressed in terms of the number of lakes for which an area is responsible. As the table shows, there is substantial variation among the six regions and 27 areas. Some area offices are heavily staffed in relation to other offices, based on the number and size of lakes managed.[4] For example, four offices have eight permanent fisheries staff but manage less than 100 lakes. Other offices have substantially more lakes to manage, but have substantially fewer staff.

Fish management work is labor intensive. Almost all area offices report being understaffed for the amount of work needing to be done. Although this may be true, some offices seem more understaffed than others. For example, the International Falls office has only three staff and over 100 lakes to manage. Two of these lakes are part of the department's large lake sampling program and require annual surveys and creel work in two of every six years. Consequently, few additional surveys can be done.

To some extent, regional supervisors can and do reassign staff between area offices for short-term work assignments. However, this is costly because employees must be reimbursed for travel related costs such as mileage, food, and lodging.

The department recognizes a problem with staff allocations. Present staffing is largely the result of historical patterns. The areas that have been established the longest tend to have the most staffing. It is difficult to transfer employees to where the need is greatest. Consequently, DNR has been reallocating positions as retirements and resignations occur. DNR is currently adding several positions around the state because of increased federal funding. However, there is no overall staffing plan on which to base these reallocations and new position assignments. Such a plan should consider the number and size of lakes and streams to manage, the intensity of management needed, the size of the area, as well as the amount of fishing that occurs on the lakes.

- DNR needs to systematically examine its current staffing pattern and workload and develop a staffing realignment plan.

(2) *Regional Supervisor's Role Needs Clarification*

The role of the regional supervisor needs clarification. Interviews with the state's six regional supervisors revealed little consensus on their responsibilities. Some regional supervisors feel that their major role is that of coordinator while others play a more direct role in resource management. As discussed in the next chapter, we found that a number of areas deviate substantially from department guidelines and standards. Regional supervisors should be closely monitoring area activities. We recommend:

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[4]The number and size of lakes are not the only factors that should be considered in allocating staff.

TABLE 2.1

1985 STAFFING LEVELS BY AREA

Region/Area	Number of Lakes[a]	N.R. Specialists[b]	N.R. Technicians[b]	Laborers and General Repair Workers	Clerk-Steno/ Typist	Total
Region 1						
Baudette	6	2	0	0	0	2
Bemidji	125	4	2	0	1	7
Detroit Lakes	199	3	3	1	1	8
Fergus Falls	204	3	2	0	1	6
Glenwood	86	3	5	1	1	10
Park Rapids	74	2	2	0	0	4
Walker	65	2	2	4[c]	0	8
TOTAL	759	19	16	6	5	46
Region 2						
Grand Rapids	1,093	4	7	0	1	12
Duluth	75	4	2	0	1	7
Ely	844	3	3	0	1	7
Grand Marais	132	2	1	0	1	4
International Falls	111	2	1	0	0	3
Finland	69	1	2	0	0	3
Lake Superior	N/A	2	0	0	0	2
French River Hatchery	0	2	2	0	1	5
TOTAL	2,324	20	18	0	5	43
Region 3						
Aitkin	82	3	1	0	0	4
Brainerd	350	2	5	0	1	8
Hinckley	103	2	7	0	0	9
Montrose	154	2	5	0	0	7
Little Falls	78	2	1	0	0	3
Spire Valley Hatchery	0	1	1	0	0	2
TOTAL	767	12	20	0	1	33

Region/Area	Number of Lakes[a]	N.R. Specialists[b]	N.R. Technicians[b]	Laborers and General Repair Workers	Clerk-Steno/ Typist	Total
Region 4						
Hutchinson	55	2	6	4[d]	0	12
Ortonville	8	1	2	0	0	3
Spicer	60	2	6	0	0	8
Waterville	72	3	5	2	0	10
Windom	99	2	4	1	0	7
TOTAL	294	10	23	7	0	40
Region 5						
Lake City	7	3	2	0	1	6
Lanesboro	42	2	1	0	0	3
Crystal Springs Hatchery	0	1	2	0	0	3
Lanesboro Hatchery	0	2	3	1	1	7
TOTAL	49	8	8	1	2	19
Region 6						
St. Paul	252	4	6	0	0	10
St. Paul Hatchery	0	1	3	0	0	4
TOTAL	252	5	9	0	0	14
STATEWIDE TOTAL	4,445	74	94	14	13	195

Source: Department of Natural Resources Organizational Chart, July 1985.

[a]Region 5 offices manage a significant number of coldwater streams. Some area offices in Region 2 (Finland, Lake Superior, Grand Marais, and Duluth) are actively involved also in coldwater stream management.

[b]Some specialists and technicians may be seasonal workers.

[c]These workers do construction work statewide.

[d]Three of these workers are net makers and make nets for statewide use.

- DNR should clarify the role of the regional supervisor. Regional supervisors should monitor adherence to departmental guidelines and requirements.

(3) *Communication Among Fisheries Offices*

Area and regional staff consistently stated in interviews that communication within the Fisheries Section needs to be improved considerably. Two levels of communication problems were noted: communication between the central office and area staff and communication among the staff of different area offices. Aside from distance problems between some regional and area offices, most staff reported that communication between area and regional staff was good.

Area staff reported that they have no real working relationship with the central office. Most communication and direction come from their regional fisheries supervisors. Area staff are not well informed about central office activities and felt more information would be an improvement. For example, some area staff were unable to help local groups develop surcharge proposals because they did not know what criteria the department would be using to judge them. In addition, field staff responsible for implementing the trout program are unable to answer local sport groups' questions about how the trout stamp revenue has been spent because they do not know themselves.

Area staff also noted that central office staff rarely visit area offices. The perceptions of area managers seem to be that the central office staff are somewhat out of touch.

- The department needs to institute procedures to improve communication between the central office and area offices. While formal lines of authority should be through the regional office, the central office needs to keep area staff informed about statewide activities.

In this regard, the Fish and Wildlife Division has recently started a newsletter to provide general information to area staff. However, there is still a need for the central office to become more involved in formulating and disseminating information on statewide fisheries policies. Many area and regional staff indicated that the central office should be more active in setting fisheries policy to provide overall direction to local offices and communicating those policies in the field.

Communication between area offices also could be improved. Area staff have little knowledge about the activities of area staff in other regions. Most indicated that the annual fisheries conference is the only opportunity they have to meet with staff from other regions.

The statewide committee approach being used to write the department's long-range fisheries plan should help foster more communication among staff in various parts of the state. However, more permanent mechanisms still need to be created to keep area staff informed about activities in other parts of the state. The Fisheries Section should explore using a

"work-study" group approach. These groups bring together staff with common interests and problems from around the state to share concerns and information.

- The department should establish formal mechanisms to improve communication among area offices. Using work-study groups should be investigated.

B. FISH MANAGEMENT PLANNING

This section discusses the major fisheries planning activities carried on by the Department of Natural Resources: individual lake management planning and statewide comprehensive planning. Under the individual lake management planning program, area managers develop comprehensive, long-range plans for individual lakes in their area. The statewide comprehensive planning process involves developing overall strategic and long-range plans for fisheries on a statewide basis.

We found the Fisheries Section had no long-range plan, but was making progress on the development of one. Individual lake management planning and statewide comprehensive planning provide excellent opportunities for the department to examine its activities.

1. INDIVIDUAL LAKE MANAGEMENT PLANNING

a. *Introduction*

In the past, the Fisheries Section did not have a formalized planning process for individual lakes. Most planning that occurred was on an ad hoc basis and was often not implemented. As a result, new personnel found it difficult to determine management objectives on lakes, and consistent management was less likely to occur.

The U.S. Fish and Wildlife Service requires evaluation for federal financing. Because of a desire to improve lake management and the USFWS requirement, DNR initiated a lake management planning process.

In December 1982, a fisheries task force developed a *Lake Management Planning Guide*. Area managers were required to submit their first lake management plans by June 1984; additional plans are required each June until all lakes in their area have management plans in place.

b. *Lake Planning Priority System*

Area managers were required to assign priorities to the lakes in their area as a first step. Lakes were assigned a rating of one through ten based upon their size and angling value. The larger the lake or the greater its fishing pressure, the higher the number assigned to it.

Area managers assigned priorities to approximately 4,400 lakes. Table 2.2 shows the number of lakes at each priority rating. Lakes with a rating of ten represent the state's largest, most heavily fished waters. As the table shows, over one-half of the state's lakes were assigned ratings of three or less. Approximately one-fourth of the lakes were assigned priority ratings of one which means that they are quite small and have little fishing value.

TABLE 2.2

PRIORITY RATINGS OF MINNESOTA'S LAKES

Priority Rating	Number	Percent of Total
10	79	1.8%
9	79	1.8
8	201	4.5
7	297	6.7
6	403	9.1
5	332	7.5
4	384	8.6
3	612	13.8
2	930	20.9
1	977	22.0
No Rating	151	3.4
Total	4,445	100.1[a]

Source: Program Evaluation Division analysis of lake priority ratings.

[a]Percent does not total 100 due to rounding.

We found two problems with the department's lake priority system: it placed too much emphasis on size and not enough on use, and the central office provided little review of ratings assigned by managers.

First, the priority system is not necessarily an accurate measure of a lake's importance. For example, most trout lakes are less than 100 acres; the maximum rating they could possibly achieve would be a six. This underestimates their fishing importance and the amount of resources expended by the department to maintain the fishery. The rating system would rate them equally with many larger bodies of water sustaining light fishing pressure.

In addition, some areas of the state have but a few small bodies of water. Yet, because of local population density, the lakes sustain considerable fishing pressure. As currently designed, these lakes are not given high

ratings because of their size, thus, the rating system does not permit an accurate comparison of lakes' values across the state.

Second, the central office provided very little follow-up or review of the lake rating process. One area manager did not assign priorities to any lakes in his area; other managers assigned priorities to many lakes incorrectly.

We recognize that the rating system was designed simply to provide a framework for developing lake management plans. However, we believe that there is a need for a *bona fide* lake priority system that goes beyond providing a framework for writing lake management plans. A good lake priority system should place more emphasis on angling use or value than on size. It should permit managers to compare accurately the value of fisheries across the state. Furthermore, that system should form the basis for organizing most individual lake work carried on by the department.

As the state moves closer to implementing a comprehensive long-range plan for fisheries, it will be necessary to identify formally the importance of individual lakes and organize work around first around meeting the needs of high priority lakes. Moreover, to permit equitable comparisons of lake values from one area to another, standard criteria need to used across the state.

- The department should revise its current lake priority rating system to emphasize use as well as size. Priorities should be assigned to lakes in a consistent manner across the state.

c. *Individual Lake Plans*

Lake management plans contain several elements: long-range goals, mid-range objectives, an operational plan, a potential plan (in case additional funds become available), and a narrative discussing factors limiting past management, past management direction and evaluation plans. Long range goals describe where the manager would like to see the lake in 10-15 years. Mid-range objectives and the operational plan indicate the specific course of action proposed to attain sub-goals in 5 to 8 years. Staff estimate that management plans are expected to stay in place for five to ten years.

We see one major problem with the lake management planning program: the central office is providing little follow-up on its implementation.

For the first two years of the program, the number of plans submitted by area managers varied considerably. Table 2.3 shows the number of plans submitted for 1984 and 1985 in each area and the number of lakes in those areas. Table 2.4 compares the total number of plans submitted in relation to the priority of the lakes to be managed.

Area managers gave varied reasons why they had submitted no or few plans. Most indicated that they simply did not have enough time to do them. A small number of managers new to their positions reported that previous managers failed to write any plans for their areas.

TABLE 2.3

INDIVIDUAL LAKE MANAGEMENT PLANS WRITTEN BY REGION AND AREA

Region and Area	Number of Lakes	Individual Lake Management Plans 1984	1985
Region 1			
Baudette	6	3	0
Bemidji	125	22	20
Detroit Lakes	199	31	20
Fergus Falls	204	21	22
Glenwood	86	13	19
Park Rapids	74	14	17
Walker	65	0	10
TOTAL	759	104	108
Region 2			
Grand Rapids	1,093	0	0
Duluth	75	6	0
Ely	844	55	57
Grand Marais	132	1	2
International Falls	111	0	1
Finland	69	0	0
Lake Superior	N/A*	0	0
TOTAL	2,324	62	60
Region 3			
Aitkin	82	0	10
Brainerd	350	0	0
Hinckley	103	27	0
Montrose	154	0	31
Little Falls	78	0	0
TOTAL	767	27	41
Region 4			
Hutchinson	55	16	9
Ortonville	8	3	3
Spicer	60	0	7
Waterville	72	21	0
Windom	99	5	10
TOTAL	294	45	29
Region 5			
Lake City	7	1	4
Lanesboro	42	3	0
TOTAL	49	4	4

Region and Area	Number of Lakes	Individual Lake Management Plans 1984	1985
Region 6			
St. Paul	252	42	0
TOTAL	252	42	0
STATEWIDE TOTAL	4,445	284	242

Source: Program Evaluation Division analysis of lake priority ratings and management plans submitted.

*This office is chiefly responsible for the management of Lake Superior

Despite a slow start, almost all area and regional managers think that individual lake management planning is a good idea. Individual lake plans provide direction and continuity to their actions on specific lakes. Individual plans are also useful public relations devices. Area managers can easily show interest groups their long-range plans for individual lakes and the results of past management activities.

- Because individual lake management plans are useful tools, DNR should ensure that area and regional managers comply with the planning requirement.

Although lake management planning is widely accepted and lauded by the area and regional managers, we see less committment to it in the central office. Management plans are developed by area staff and are submitted to regional managers for their review and approval. The plans are then submitted to the central office; resource unit staff currently have no review authority over their contents or the course of action recommended.

At one time, a central office staff person reviewed plans for overall completeness and adherence to instructions, however, this position is currently vacant. Plans that were submitted for 1984 and 1985 were until recently simply stored in boxes. Not until we pointed this out, a year and a half after some plans were submitted, did the department even file them in individual lake files.

2. STATEWIDE COMPREHENSIVE PLANNING

a. *Introduction*

In 1985, the Legislative Commission on Minnesota's Resources provided $100,000 for the Fish and Wildlife Division to embark on a comprehensive planning process. Fisheries planning is currently short-term and is tied

TABLE 2.4

RATIO OF INDIVIDUAL LAKE MANAGEMENT PLANS WRITTEN TO THE NUMBER OF LAKES AT EACH PRIORITY LEVEL
1984 and 1985

Region and Area	No Rating	Priority Rating 1	2	3	4	5	6	7	8	9	10	*	Total
Region 1													
Baudette	0:0	0:1	0:0	0:0	0:0	0:0	1:1	2:3	0:0	0:0	0:1	--	3:6
Bemidji	0:0	0:0	0:0	3:40	4:24	10:24	7:15	11:14	6:7	1:1	0:0	--	42:125
Detroit Lakes	0:0	4:103	5:15	4:8	6:12	8:14	2:10	6:13	5:10	1:4	5:10	5	51:199
Fergus Falls	0:0	0:19	3:41	1:35	1:16	0:13	3:15	5:21	19:32	10:11	1:1	--	43:204
Glenwood	0:0	0:4	3:14	9:16	5:17	2:4	3:5	8:18	2:7	0:1	0:0	--	32:86
Park Rapids	0:0	0:0	0:2	2:14	3:13	2:8	1:11	1:10	1:3	0:2	0:2	--	10:65
Walker	0:0	0:0	0:0	5:13	2:9	4:7	7:23	3:10	6:10	1:2	0:0	3	31:74
TOTAL	0:0	4:127	11:72	24:126	21:91	26:70	24:80	36:89	39:69	13:21	6:14	8	212:759
Region 2													
Grand Rapids	0:7	0:629	0:192	0:117	0:73	0:46	0:14	0:9	0:4	0:1	0:1	7	0:1,093
Duluth**	0:0	0:0	0:3	0:0	0:14	0:0	0:22	0:0	0:12	0:0	6:24	--	6:75
Ely	0:2	0:27	7:445	9:102	3:39	15:55	10:63	5:46	7:26	14:24	17:15	25	112:844
Grand Marais	0:0	0:0	0:9	0:36	0:22	1:33	1:22	0:6	0:2	0:1	1:1	--	3:132
International Falls	0:1	0:17	0:41	0:24	0:8	0:6	0:2	0:7	0:1	0:2	0:2	1	1:111
Finland	0:69	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	--	0:169
Lake Superior***	***												
TOTAL	0:79	0:693	7:690	9:279	3:156	16:140	11:123	5:68	7:45	14:28	24:43	26	122:2,324
Region 3													
Aitkin	0:0	0:0	0:0	2:10	1:10	0:10	0:9	1:10	0:10	0:10	0:13	6	10:82
Brainerd	0:71	0:76	0:39	0:44	0:43	0:13	0:25	0:22	0:7	0:10	0:0	--	0:350
Hinckley	0:0	0:0	0:38	4:24	2:5	0:3	3:8	7:11	10:14	0:0	0:0	1	27:103
Montrose	0:0	0:4	0:41	4:38	2:12	5:11	10:24	4:10	4:13	0:1	0:0	2	31:154
Little Falls	0:0	0:0	0:3	0:11	0:3	0:12	0:22	0:16	0:8	0:3	0:0	--	0:78
TOTAL	0:71	0:80	0:121	10:127	5:73	5:49	13:88	12:69	14:52	0:24	0:13	9	69:767

Region and Area	No Rating	Priority Rating 1	2	3	4	5	6	7	8	9	10	*	Total
Region 4													
Hutchinson	0:0	1:1	1:3	1:7	2:11	5:7	2:8	5:7	7:10	1:1	0:0	--	25:55
Ortonville	0:0	0:0	0:0	0:1	0:1	1:1	1:1	1:1	1:1	1:1	1:1	--	6:8
Spicer	0:0	0:0	0:2	0:8	0:6	2:6	2:10	1:11	1:8	0:1	1:8	--	7:60
Waterville	0:0	0:2	1:12	3:12	3:14	4:11	2:12	6:7	2:2	0:0	0:0	--	21:72
Windom	0:0	0:2	0:6	0:18	0:14	0:13	6:26	6:15	2:3	0:2	0:0	1	15:99
TOTAL	0:0	1:5	2:23	4:46	5:46	12:38	13:57	19:41	13:24	2:5	2:9	1	74:294
Region 5													
Lake City	0:0	0:0	0:1	1:2	0:0	1:1	1:1	2:2	0:0	0:0	0:0	--	5:7
Lanesboro	0:0	0:1	0:11	0:10	1:6	1:10	0:1	0:1	1:2	0:0	0:0	--	3:42
TOTAL	0:0	0:1	0:12	1:12	1:6	2:11	1:2	2:3	1:2	0:0	0:0	--	8:49
Region 6													
St. Paul	0:0	9:91	2:12	5:22	4:12	5:24	7:53	7:27	2:9	1:1	0:0	--	32:252
TOTAL	0:0	9:91	2:12	5:22	4:12	5:24	7:53	7:27	2:9	1:1	0:0	--	32:252
STATEWIDE TOTAL	0:151	14:977	22:930	53:612	39:384	66:332	69:403	81:297	76:201	30:79	32:79	44	526:4,445

Source: Program Evaluation Division analysis of lake priority ratings and management plans written for 1984 and 1985.

*This category reflects management plans written for lakes not listed in the department's lake priority system.

**Lakes in this area were originally prioritized backwards; we corrected these ratings.

***This area office is chiefly responsible for managing Lake Superior.

only marginally to the biennial budget process. Comprehensive planning is designed to permit the department "to determine in advance what needs to be done, alternative ways to do it, when to do it and to identify who is responsible for getting it done."[5]

b. *Goals of Fisheries Management*

Basic to formulating a comprehensive plan for fisheries management is a shared understanding of the state's overall goal for fish management. However, the Department of Natural Resources is currently operating without an overall fish management policy. The last formal statement of policy was developed in 1956 and updated in 1964. At that time, the primary goal of fish management in Minnesota was " . . . the production of the greatest number of satisfactory sport-fishing hours--or expressed another way, the most fishing for the most people."[6]

Most staff do not believe that this policy is still in effect or relevant. One problem noted by area and regional managers was that there was no overall statement of fishery policy to help guide their actions.

Considerable variation exists among staff as to what they perceive to be the overall goal of fisheries management. Many staff believe that their primary goal is to protect the resource while others believe that it is to satisfy anglers by increasing the creel yield.

Our interviews reveal that DNR staff think there is a need for a statewide fish management policy. Data collected by the department for its strategic planning process also support this finding.

The Fisheries Section did draft a new fish management policy in May 1985; however, it has not been adopted. According to the department, no action will be taken on it in the near future. Current management sees no need to adopt an overall statement of fish management policy although field staff indicate that it would make their jobs easier.

Management's position is that many policy provisions require developing rules and regulations or commissioner's orders. While this may be true for some policy items dealing with the public, it is not true for internal department affairs. The department should go through the appropriate process whenever developing commissioner's orders or policies with public impact.

A statewide fish management policy is especially important for a management system that is largely decentralized. Program managers need a clear vision of where the program is directed to ensure continuity and consis-

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[5]*Plan for Minnesota Fish and Wildlife Resources*, Volume 1, Division of Fish and Wildlife, Department of Natural Resources, October 1985.

[6]*Minnesota Fish Management Policy*, Division of Game and Fish, Department of Conservation, 1946.

tency of action throughout the state. A statewide policy also affords the public the opportunity to know what the department is doing and why.

- The Fisheries Section should adopt and disseminate a formal fish management policy for the state. Attention should be paid to its consistency with other statements of policy and intent. Commissioner's orders should be developed as needed.

c. *Planning Process*

Four staff persons in the Ecological Services Section of the Fish and Wildlife Division are responsible for overseeing the planning process. The department hopes to publish its strategic plan in March 1986 and its long-range plan by June 1987. The strategic plan will describe the fisheries resource, the major resource issues, and the strategies for addressing the issues. The long-range plan covers a shorter period of time--six years compared to 15 to 20 years--and presents goals for each species managed.

We believe that comprehensive planning is a desirable activity. It should help provide a more accountable system of programming and contribute significantly to the department's adoption of a more statewide perspective of fisheries management. Several other states such as Wisconsin, Kansas, Florida, and Wyoming are well into the comprehensive planning process. Wisconsin, for example, is in its sixth year of comprehensive planning.

One impediment to effective planning we see is the absence of an adequate information and reporting system. These issues are discussed in the next section on budgeting and reporting.

C. BUDGETING AND REPORTING

1. INTRODUCTION

The Fisheries Section's budget for fiscal year 1986 is $11.4 million, approximately 35 percent of the Game and Fish Fund.[7] Fish management activities are financed from this portion of the fund and total $8.0 million. This work is extremely labor intensive. Personnel salaries and benefits consume $6.7 million, approximately 80 percent of the fish management budget. In addition to the normal fish management program, in fiscal year 1986 the department has a fish management intensification program, funded from the surcharge, of $2.8 million. Table 2.5 presents fisheries total budget for fiscal year 1986.

This section discusses DNR's information systems that support its budgetary activities. In general, we found that the department does not have

[7]This figure includes revenue from the fishing license surcharge, trout stamp, and other federal programs.

an adequate cost-accounting system to determine actual program costs. In addition, DNR does not have an adequate data base on its management activities or the fisheries resource. Because it lacks a viable management information system, the information that it does collect can not be used easily to make management decisions.

TABLE 2.5

FISHERIES SECTION BUDGET

Fiscal Year 1986
(In Millions)

Regular Fish Management	Total
Director's Office	$ .089
Central Office	1.205
Region 1	1.610
Region 2	1.735
Region 3	1.098
Region 4	1.359
Region 5	.626
Region 6	.311
Total	$8.036
Fishing License Surcharge	$2.800
Trout Stamp	.250
Other	.325
TOTAL	$11.406

Source: Statewide Accounting System and DNR.

2. REPORTING SYSTEMS

The department collects no data that indicate the true costs of the programs it operates or how efficiently these programs are managed. Its system for making budget allocations is based largely upon past practices; program managers are not held formally accountable for results.

Funds are allocated to different program activities largely through work plans submitted by area supervisors to their regional supervisors. These work plans list program activities only; actual costs are not determined. Regional supervisors estimate the amount of money required to do the work based upon the immediate past budget; the regional estimates are simply combined to make the tentative state fish management budget.

Such a process allows for no feedback between what areas propose to do and what they have actually accomplished the previous year. It is not possible to determine which programs are operating most efficiently and it is difficult to compare needs between regions and areas. Consequently, the department cannot determine what activities are providing the greatest return on fish management dollars.

Lack of a cost-accounting system makes effective planning and management control extremely difficult. Because there is no statewide system, several area offices have developed their own systems for determining program costs. These systems require employees to report time in terms of activities, making it easier for individual managers to organize their efforts. The department needs to develop and implement an effective cost-accounting system on a statewide basis. DNR is currently working on such a system and anticipates its implementation in early 1986.

- The Fisheries Section should complete implementation of the cost-accounting system without delay. Information from this system should be available to all managers and supervisors. Planning should be more closely related to the budget with cost-benefit analyses an integral part of program budgeting.

DNR does not currently have an adequate management control reporting system for fisheries. Area and regional managers prepare many reports on their activities for the central office. Central office prepares an annual operational work plan. The division director also receives quarterly activity reports. However, management control and task control systems are not in place. For example, it is not possible to track progress on the operational plan; no exception reporting systems are in place, and no reconciliation of proposed, planned, and actual accomplishments is done. As a result, management does not have the information with which to allocate or reallocate resources in an objective way. The new cost accounting system provides the basis for developing and implementing a good management and task control system.

- DNR should take steps to develop a management and task control system for fisheries.

3. MANAGEMENT INFORMATION SYSTEM

Effective program planning and budgeting also require that the department have a viable data base on its activities and the resource it manages. The department collects considerable data on individual lakes. Before 1983, DNR entered fisheries information into the State Water Information System database. Because of a switch in computer systems, this system has not been used for over two years. In examining this system, we found that it did not contain all relevant lake information and numerous data elements were incorrect.

The department uses a system of manual lake files to store the information it collects on individual lakes. Area and regional offices also maintain individual lake files. All of these manual files contain varying amounts

of lake information. Consequently, while fisheries collects much individual lake information, it is not easily retrieveable. Thus, it can not always be used to make management decisions.

The Fisheries Section also has no management information system for the state as a whole. For example, department figures for the total number of lakes managed for fishing range from 4,000 to 6,000. Stream management figures range from 7,000 to 15,000. While the department does approximately 500 surveys and population assessments a year, it can not determine statewide netting results for each major fish species for the year.

The section needs to develop a management information system: "an integrated man/machine system for providing information to support the operation, management, and decision-making functions of an organization."[8] Such a system incorporates manual as well as automated systems and procedures necessary for management to effectively plan for, assess and control the activities of an organization.

- The Fisheries Section needs to develop a management information system for individual lakes and the state as a whole.

This system should incorporate some of the data already contained in individual lake management plans, surveys, and creels. Furthermore, it should provide data on the economic value of fisheries activities. That is, it should allow the department to examine whether the money invested in a lake is commensurate with fishing pressure, the amount spent by anglers, and with the department's habitat protection role.

DNR has developed few indicators regarding the social or economic value of the fishery resource. As funding pressures mount, the department must be able to provide the Legislature and the public with data on the economic benefit of its activities. Other states are recognizing the importance of gathering cost-benefit data. For example, biologists at the Missouri Department of Conservation are developing basic cost-benefit formulas that can be applied to compute the monetary value of fish or fisheries.

4. FISHING LICENSE SURCHARGE

In 1983 the Legislature passed a bill intended to enhance fishing opportunities in Minnesota. The bill provided for a $2.50 surcharge on each fishing license sold beginning in license year 1984. Approximately $780,000 was collected from the surcharge in fiscal year 1984, and $2.6 million in fiscal year 1985. The first legislative appropriation of $3.0 million was made in 1985 for fiscal year 1986. The department is to report to the House and Senate on how it plans to spend the funds. Table 2.6 shows the department's spending plan for the surcharge in fiscal year 1986.

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[8]Gordon B. David, *Management Information Systems: Conceptual Foundations, Structure, and Development*, McGraw Hill, p. 5.

TABLE 2.6

FISHING LICENSE SURCHARGE SPENDING PLAN

Fiscal Year 1986

	Regions						
Projects Funded	I	II	III	IV	V	VI	Total
CORE[a]	$ 160,000	$ 80,000	$210,000	$245,000	$ 86,000	$ 64,000	$ 845,000
Stocking and Rearing	129,000	112,000	99,000	92,000	55,000	13,000	500,000
Stream Improvement	--	56,000	--	--	29,000	--	95,000
Hatcheries	--	203,000	--	27,000	70,000	100,000	400,000
Urban Fishing	--	--	--	--	--	70,000	70,000
Commercial Buyout	770,000	60,000	--	--	--	--	830,000
Equipment	40,000	5,000	5,000	--	10,000	--	60,000
TOTAL	$1,099,000	$516,000	$314,000	$364,000	$250,000	$247,000	$2,800,000[b]

Source: Department of Natural Resources.

[a]CORE stands for Cooperative Opportunities for Resource Enhancement. These projects involve local sponsorship, volunteer participation or cost sharing.

[b]The central office allocated $82,800 of surcharge funds to enforcement.

The department did not develop an overall priority plan before allocating the funds. There are a number of intended uses of the funds outlined in statute, however, the statute is broad enough that the department can effectively spend the funds on any fisheries project it wishes. We believe that the department should have a plan for spending surcharge funds that extends several years into the future. Such a plan would assign priorities to areas where the department believes there are gaps in the current fish management program. The Legislature and the angling public would then better be able to determine what the department was planning. Individual projects to be funded from the surcharge would not need to be identified in advance, but the areas to which the department assigns priority should be.

In addition, the department should identify the criteria that it uses to select projects. We would suggest that each project be evaluated on the basis of the benefit to be derived from the expenditure. For example, how many additional angling hours will result, or how will the fish populations improve? Developing criteria will help assure that the projects selected are cost-effective and are the best projects available to be funded.

- DNR should develop a plan for spending fishing surcharge funds. DNR should also develop criteria for project selection.

5. BUDGETING AND PLANNING FOR FEDERAL FUNDS

The Dingell-Johnson Act was passed in 1950. It collects a 10 percent excise tax on fishing rods, reels, creels, and artificial lures, baits, and flies for use in sport fish management and restoration. The money collected is distributed 40 percent based on land area (including coastal and Great Lake waters) and 60 percent based on the number of paid fishing license holders. The maximum a state may receive is five percent and the minimum is one percent. Minnesota's allocation was $1.37 million or 3.6 percent of the available funds in fiscal year 1985. The program provides for a 75 percent reimbursement for federally approved projects. The states must spend state funds before being reimbursed.

In 1984, as part of the Deficit Reduction Act of 1984, the Sport Fish Restoration Program, now known as Wallop-Breaux, was amended to broaden the items on which an excise tax is collected. Minnesota's allocation from the expanded program is approximately $4.6 million in federal fiscal year 1986, up from $1.4 million in 1985.

In addition to substantially increasing the amount of money available for distribution to states, Wallop-Breaux made a number of other important changes to the program. Among these changes are:

- Maintenance of Effort Required: Wallop-Breaux expansion funds must be in addition to existing state fisheries money. Substitution for existing state funds is not allowed.

- Multi-Year Financing: States may now use several years' Wallop-Breaux allocations to fund large projects acquired or developed in a single year.

- Aquatic Education: Up to 10 percent of a state's Wallop-Breaux money may be used for aquatic education.

- Motor Boat Access Facilities: At least 10 percent of a state's Wallop-Breaux funds must be spent on providing or improving access facilities for motorboats used for fishing.

With an increase in the fisheries budget in fiscal year 1986 due to the appropriation of fishing license surcharge funds, Minnesota will have no trouble meeting the maintenance of effort requirement.

D. PUBLIC INFORMATION AND EDUCATION

One of the primary objectives of the fish management program is to serve the needs of the angling population. Because of this goal it is important for DNR to communicate with the angling public, both to get information on angler desires, and to tell the public what it is doing to manage the resource and why. It is also important for DNR to help educate present and future generations of anglers about the fisheries resource.

In general, we found that fisheries must be more aggressive in its public information and education program. More attention needs to be given to improving the media skills of area and regional fisheries supervisors and their staffs.

There are at least three DNR-sponsored sources of fisheries public information and education : area and regional fisheries offices, the central fisheries office, and DNR's Information and Education Bureau.

1. AREA AND REGIONAL OFFICE ACTIVITIES

The public information and education activities carried on by area staff vary considerably; most try to carry on as extensive a program as time and expertise allow. Common activities include speaking before lake association and sport fishing groups, appearing at county fairs, conducting tours, and making presentations before grade and high school classes.

Most area supervisors' public education efforts are impeded by a lack of support materials. Few tools, such as brochures, pamphlets, films or slides, are available. Even if films or slides were readily available, the equipment to show them is not. Although the department publishes some fishing-related brochures and pamphlets, very few are available in the area offices.

Each area office should have informational materials, like slides, available to explain fish management activities in that area. To the extent

possible, area offices should also have access to materials depicting the activities of other area offices and the state as a whole.

- The central office should ensure that each area and regional office has an adequate supply of informational and educational materials available for public consumption.

In addition, the media skills of area and regional fisheries supervisors and their staffs need to be improved. While fisheries staff should not be expected to be media specialists, they have considerable public contact. Most field staff have received little or no communications training.

Developing basic public speaking and journalism skills should be encouraged. For example, the department should explore using a program similiar to the "media for managers" training program offered through the Minnesota Department of Transportation. The program teaches managers stategies for dealing with the media and building communications skills. The department should also explore having the Department of Employee Relations offer more of its programs dealing with public presentations in the field to regional and area supervisors and their staffs.

- The department should ensure that its area and regional fisheries staff receive training in public information and education programs.

2. CENTRAL FISHERIES OFFICE ACTIVITIES

A major complaint voiced by area and regional staff about the department's public information program is that it is too reactive; too much time is spent responding to questions and issues raised by the public while too little time is spent trying to form public opinion and gain support for its programs before problems arise. Sport groups also expressed similar concerns regarding the department's need to educate the public on the role it plays in sustaining a quality fishery.

For the last two years, the Fisheries Section has been holding public information meetings around the state to provide anglers an opportunity to comment on department activities. While such forums are important, they should not viewed as a panacea for public information problems. These meetings have not provided a great deal of public exposure to the department. Compared with the number of anglers, public attendance has been limited.

Recently, the central fisheries office has been trying to make more and better use of the media. For example, the Fish and Wildlife Division has started airing a weekly two to three minute television spot during a metro-area news program that speaks to a variety of fish and wildlife issues. The division is also working on a slide show that points out the economic benefit of fish and wildlife programs to the state's economy. In addition, slide shows explaining fisheries programs are being developed.

More remains to be done about publicizing the resource management effort of the department. The extent to which the department gains public

acceptance of its management policies and strategies is directly related to its abilities to successfully carry out its programs. The Citizen's Commission to Promote Hunting and Fishing in Minnesota made several good recommendations:

- More press releases should go to local newspapers and fishing publications. Information about DNR programs should be distributed regularly to newspapers, fishing clubs, bait stores, resort owners, tackle manufacturers, etc. to inform them of DNR issues, programs, and activities.

- The Regional Offices should increase their efforts to inform local fishing organizations, fishing-related businesses, and news media about activities and programs that affect local fishing lakes and streams.

- DNR should consider developing a semi-annual publication (*Minnesota Angler*, for example) with a much larger distribution than the *Volunteer* to promote fishing activities and publicize fish management programs. It has also been suggested that DNR publish a free monthly bulletin on where to fish in Minnesota with emphasis on distributing the fishing pressure among all species of game fish, promoting kids' fishing opportunities, and advocating catch and release.

- DNR should utilize the network of resort owners, bait stores, etc. to disseminate information about resource management programs and to educate network participants about such issues as catch-and-release and the need to distribute fishing pressure among the species.[9]

Another idea we believe has merit is distributing information on Minnesota's fish management program at the fishing license point of sale. The point of license sale is one place that DNR can be in contact with every angler in the state.

Expanding the department's public information program, however, will require additional expenditures. License surcharge revenues can be used along with up to 10 percent of the Wallop-Breaux expansion monies to fund public education programs. If the department structures its public education program in accordance with federal guidelines, it would be eligible for 75 percent reimbursement of costs.

- The department should use Wallop-Breaux funds to expand its public education and information program.

Rather than add full-time staff or rely on departmental information and education staff, it may be more expeditious and cost-effective to use

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[9]Final Report of Fishing Subcommittee, Citizen's Commission to Promote Hunting and Fishing in Minnesota, December 1984, p. 12-13.

expansion funds to contract for the development of any additional educational materials needed.

3. INFORMATION AND EDUCATION BUREAU

Area and regional staff felt strongly that the Information and Education Bureau (I & E) of the department was not meeting their needs. This is a problem recognized by the department and reorganization of the bureau is currently underway. It should be noted, however, that I&E must speak to the public information needs of the entire department; to some extent, divisions must compete for its time and expertise.

Although we recommend that the communication skills of field staff be improved, area fisheries staff still need the kinds of expertise that media specialists within I & E can offer. Recognizing that it may be better to decentralize some I & E functions, the department has tried to establish a pilot program placing I & E staff in the regions. The Department of Finance has taken this item out of DNR's budget request.

We think the idea has merit and should be explored futher. Having media specialists in the regions would: (a) coordinate regional information to the benefit of all regional DNR offices, not just fisheries and (b) provide for consultative services to area fisheries offices. The need to increase regional information and education efforts was cited in the 1973 Loaned Executive Action Program report, the 1978 department reorganization plan, and the 1984 Department of Administration management study of DNR.

Regional I&E staff could also work more closely with the Minnesota Environmental Education Board's (MEEB) regional councils. This board was created by the 1978 Legislature to ". . . encourage development of life values and a style of living which fosters the constructive use, rather than exploitation of natural resources and the environment" and ". . . promote coordination among various groups and institutions, development and distributing environmental education materials, including but not limited to formal and non-formal education, pre-kindergarden through grade twelve, post-secondary, vocational, college and adult education."[10]

The Minnesota Environmental Education Board consists of a state board and 13 regional councils. Most of its work is carried on by the 200 volunteers serving its regional councils. Each regional council develops an annual workplan to determine what environmental materials it will develop to reach the people in its region.

DNR staff felt strongly that it needs to better educate children about the environment and the fisheries resource. Educating children is perhaps where the department can hope to have the most long-term effect.

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[10]Minn. Stat. §116E.01.

FISH MANAGEMENT ACTIVITIES

Chapter 3

What are fish managers doing to improve fishing in the state? One fish manager that we interviewed described his job this way: "Basically there are four things that we can do to manage fish: put them in, take them out, change or protect habitat, and regulate the harvest." These activities, along with evaluation to see if they work, are the foundation of fish management. In this chapter we examine the department's efforts at fish stocking, evaluation, stream management, habitat protection, regulation, and other special activities associated with fisheries management. We asked the general question: How well is DNR carrying out Minnesota's fish management program? Specifically, we examined the following questions:

- How successful is Minnesota's fish stocking program?
- How well has DNR evaluated its management activities?
- How efficient and effective is the state's fish production and distribution program?
- How well has Minnesota managed streams?

We found that overall DNR is doing a fair to good job in its fish management program. DNR is doing several things well, for example, the Lake Superior program, trout stream work, and access improvement.

We also found several areas need improvement. For example, the department needs to improve its management of walleye production and distribution, and monitor stocking proposals and results more closely.

A. POSITIVE TRENDS

We found many positive elements to DNR's fish management program. Since evaluation studies sometimes dwell on the problem areas in a program, we want to highlight some of DNR's successes. Fisheries resource management has improved considerably since the 1970's. Then management activities

consisted mostly of fish stocking and fish removal. Evaluation meant largely "doing what you thought was right."

The department has greatly expanded fishing opportunities in Minnesota. More water is fishable today than ten years ago. Aeration systems and lake rehabilitation work have reclaimed lakes that were once poor quality fisheries.

DNR has also brought more and better fishing opportunities to individuals previously denied access--city bound children and adults, the elderly and the handicapped. Through its urban fishing program, the department has established quality fisheries for metropolitan area residents who may not have the means, ability, time or desire to travel to outstate lakes to fish. The children's fishing pond program offers promise in terms of both opportunity and education.

Ensuring public access to lakes has also assumed greater importance. Fishing piers have made lakes more accessible. The department has pursued acquiring public access on both urban and rural waters, although in some cases acquiring adequate public accesses has been an arduous process.

The department is developing slowly a more scientific approach to fisheries management. Lake surveys are occuring almost twice as frequently as in the past. The large lake sampling program, established in 1983, assures that the status of our largest, most heavily fished waters are monitored annually.

Useful and meaningful planning processes have been adopted by the department. Individual lake management plans are being developed slowly to help direct management activities on individual lakes, while the department is also developing a statewide comprehensive plan for fisheries and wildlife.

Finally, DNR is staffed with dedicated individuals who are concerned about protecting and enhancing our fisheries resource. During the course of our evaluation, we were impressed by their professionalism and interest in the resource.

B. FISH STOCKING

1. INTRODUCTION

Fish stocking is probably the dominant activity of the fish management program. As Table 3.1 shows, more time is spent on the activities associated with stocking than on any other single program of the Fisheries Section.

Stocking activities have gone on ever since the first Fish Commission was established in 1873. In the 1880's, fishing was looked on as a means of producing food and so the first stocking efforts in the state focused on potential food sources. Whitefish, carp, salmon and trout were the first

TABLE 3.1

ESTIMATES OF STAFF TIME SPENT ON FIELD ACTIVITIES
1985

Activity	Percent
Fishing Production, Distribution, and Stocking[1]	34%
Surveys and Assessments	28
Habitat Improvement[2]	14
Public Information/Education	4
Research and Special Projects	10
Maintenance and Repair	5
Government Coordination	2
Other	3

Source: Legislative Audit estimates from regional reporting systems, review of position descriptions, and interviews.

[1]Includes trout program in Region II and V.

[2]Habitat includes accessing, developing, and maintaining trout streams; developing spawning areas; chemical rehabilitation, reviewing permit applications, rough fish control, and review of aquatic nuisance permits.

fish stocked in Minnesota. The St. Paul hatchery's first operations focused on raising hundreds of thousands of carp for stocking in Minnesota and throughout the western part of the U.S. It is ironic that DNR has spent considerable effort to rid waters of carp that it introduced to the state a hundred years ago.

By the early 1900's the department had stopped stocking carp and focused its efforts instead on producing and stocking walleye, bass and other native fishes, as well as several successfully introduced trout species. By the 1920's there were six hatcheries operating to support the state's stocking program. Since that time, the department's stocking efforts have expanded considerably. In 1984, DNR stocked the following public fishing waters:

-645 lakes with walleye,
-126 lakes with northern pike,
-42 lakes with muskellunge,
-171 lakes and 130 streams with coldwater species.

Additionally, over 100 lakes were stocked with other warmwater species such as channel catfish, smallmouth bass, and largemouth bass. To produce and distribute these fish, the Fisheries Section spent about one fifth of its $8.1 million budget.

The major species in the state's stocking program is walleye. Walleye stocking involves producing over 360 million fry and over 4.5 million fingerling. Table 3.2 shows the amount of fish produced by species in 1984.

TABLE 3.2

FISH PRODUCTION
Calendar Year 1984

(In Millions)

Species	Number Produced
Walleye	366.371 (fry)
	4.514 (fgl.)
Northern Pike	3.206
Muskellunge	.101 (fry)
	.017 (fgl.)
Largemouth Bass	.175
Channel Catfish	.586
Flathead Catfish	.055
Crappie	.001
Sunfish	.029
Salmonids	7.416
TOTAL	382.471

Source: DNR 1984 Annual Production Report Recap.

Another major activity is producing and rearing coldwater species. Salmon and trout production and distribution in 1984 cost the state $787,000, or about 50 percent of the $1.6 million spent for all production and distribution.

In the sections below we discuss why the state has a fish stocking program and how successful it is.

2. WHY STOCK FISH?

Minnesota is a state rich in aquatic resources and Minnesotans enjoy some of the best and most varied of fishing of any midwestern state. So why do we focus a considerable portion of our fish management program on stocking of fish? The reasons for stocking are that it can enhance fishing opportunities by: a) introducing new species desired by anglers, b) revitalizing fishing (for example, where there was a winterkill, or reintroducing lake trout and salmon to Lake Superior), and c) sustaining sport fisheries in areas where there would otherwise be none.

To justify stocking, the fishing should get better. That is, the catch rate for the stocked species should improve and no deleterious side effects on other desired species should occur. By carefully planning and evaluating the effectiveness of stocking efforts, fishing in the state can be improved in a cost effective way.

Stocking fish can play an important part in the state's fish management program. However, stocking is not a panacea. Unfortunately, many of the fishing public believe that stocking is always desirable and, of course, that "my lake" should be stocked first. Many also believe that "the more stocking the better". Although fisheries scientists now know that this approach is at best wasteful and at worst counterproductive, they still face public pressure to increase stocking efforts.

The idea behind stocking fish in a lake is that the fish will grow and at some point enter the angler's creel. However, simply adding more fish to a body of water will rarely increase the total yield of fish.[1] This is because every lake has what is known as a *carrying capacity*. The concept of carrying capacity as applied to fisheries is a simple one; it holds that there is a maximum amount of fish, usually measured in pounds/acre, that can live in any one body of water. The carrying capacity of any one body of water is affected by a number of factors, including the size, fertility, oxygen content, and temperature of the lake, and the total amount and type of food available.

In most cases, regardless of the number of fish stocked in a body of water, the carrying capacity limits the overall number of pounds/acre that will be available for harvest. As one fisheries scientist stated:

> In most cases, ... stocked fish placed in established fisheries (fisheries at or near carrying capacity) are substitutions rather than additions. A new species competes with native fish for food and space, and some of the fish (often the natives) lose out. The increase in the new species is often made at the expense of the weight and/or number of other fish species.[2]

In general, fish stocking seeks to replace less desirable species with more desirable ones or to maintain such a replacement. In some cases, stocking can do more harm than good depending on the angler's point of view. For example, stocking northern pike may compete with walleye populations, stocking walleye may compete with bass, etc. Stunting is another undesirable result that can arise from stocking. If fish overpopulate an area of water, the size of the average fish usually decreases because of the increased competition for food.

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[1]In some cases, such as in a lake where there has been a winterkill, stocking of fish does definitely increase the total yield. In such cases, there are unoccupied niches in the ecosystem that will allow the stocked fish to usually fare very well for several years.

[2]Ralph Manns, "What You Should Know About Fish Stocking," *IN-Fisherman*, August-September 1985, p. 38.

3. WHAT IS INVOLVED IN STOCKING?

The process for fish stocking begins with acquiring the fish. In most instances this means getting eggs and hatching them in hatcheries. The eggs may be hatched either at the site they are taken or transported to another area of the state. Newly hatched fish, or *fry*, may be directly planted in lakes or streams, or they may be raised to a larger size before stocking.

The state runs a large program to raise walleye fry to *fingerling* size in state-run or cooperatively-run ponds and lakes. Fry are raised to fingerling size because in some instances it is much more effective to stock a larger fish than to stock fry.

In Minnesota, DNR produces both warmwater species such as walleye, northern pike, muskie, and catfish, and coldwater species such as salmon and trout. The twenty seven area supervisors are responsible for the warmwater fish propagation; five state hatcheries produce all of the coldwater fish.

4. HOW EFFECTIVE IS STOCKING?

Minnesota has a large stocking program. Because of the scope of the program, stocking success is an important measure of the overall effectiveness of DNR's fish management program. In this section, we examine how effective stocking can be in improving the quantity and quality of the state's fish harvest.

In order to evaluate DNR's stocking program, we reviewed scientific literature on the effectiveness of stocking and talked with a number of experts, including DNR managers. In addition, we reviewed a sample of 119 lakes managed by DNR. The U.S. Fish and Wildlife Service assisted us by examining 16 of the lake files. Our review focused primarily on the warmwater stocking of walleye, because it is the predominant part of our stocking program.

We examine how effective stocking has been by reviewing research findings and DNR's policies, and then reviewing stocking efforts in light of research findings and department policy.

a. *Research Findings*

Literally billions of walleye have been stocked into Minnesota waters. Some of these stockings have been successful and others have not. Although not enough is known about the success of walleye stocking, research findings do illuminate some general patterns. Table 3.3 summarizes the findings of a Michigan researcher. He has found that, in general, *introductory stocking* of walleye into newly created impoundments or rehabilitated waters have had the greatest success.[3]

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[3]Percy Laarman, "Considerations in Percid Management: Case Histories of Stocking Walleyes in Inland Lakes, Impoundments, and the Great Lakes-100 Years with Walleyes", American Fisheries Society Special Publication 11, p. 254.

TABLE 3.3

DEGREE OF SUCCESS IN STOCKING WALLEYES
FOR INTRODUCTORY, MAINTENANCE, AND SUPPLEMENTAL PURPOSES

Stocking Purpose	Total Number of Lakes	Degree of Success (%)		
		Poor	Limited	Good
Introductory	27	29.6%	22.2%	48.2%
Maintenance	40	35.0	32.5	32.5
Supplemental	58	86.2	8.6	5.2

Source: Laarman, Percy, "Considerations in Percid Management: Case Histories of Stocking Walleyes in Inland Lakes, Impoundments, and the Great Lakes--100 Years with Walleyes," American Fisheries Society, Special Publication 11, p. 259.

Maintenance stocking of lakes where natural reproduction is very limited or nonexistent has had moderate success. There is some indication, although not conclusive, that for maintenance stocking the survival rate of larger fingerlings was better than that of smaller fingerlings. Apparently larger fingerlings are able to compete more effectively for food than the smaller fingerling.

The success of *supplemental stocking* into waters containing good natural reproduction has been extremely limited. The idea behind supplemental stocking is to augment weak natural reproduction. Unfortunately, this goal has been difficult to obtain.

- Stocking of both fry and fingerlings to supplement natural reproduction has met with very limited success.

Research in Minnesota tends to confirm the observations of the Michigan researcher. No increase in relative abundance of stocked year classes was found in a review of 28 northern Minnesota natural walleye lakes for fingerling plants. According to DNR's research: "There is no evidence that the walleye populations of the stocked natural walleye lakes sampled were increased over that which might occur naturally without stocking."[4]

The Minnesota DNR research concluded that walleye fingerling stocking probably resulted in greater abundance of walleyes in stocked bass-panfish lakes of the region than in the non-stocked bass-panfish lakes.

[4]Johnson, Fritz, *Survival of Stocked Walleye Fingerlings in Northern Minnesota Lakes As Estimated From the Age-Composition of Experimental Gill Net Catches*, Investigational Report No. 314, 1971, p. 6.

Minnesota research also indicates a relation between the size of fingerlings and stocking success. It is suggested that increased success is due to the ability of fingerlings above a certain threshold size to compete effectively for food with small resident walleye and other small fish, while the smaller fingerlings cannot.

There is probably some optimum size threshold for fingerling stockings. DNR managers we spoke with indicated that the preferred fingerling size was 20-30 per pound. The object appears to be to stock fingerlings of the smallest size that can compete effectively with the populations native to the lake being stocked.

Fish populations naturally tend to fluctuate. According to DNR research, one implication is that, "It is likely that walleye fingerlings that are stocked on top of an abundant natural year class or in the year following would have minimal chances for survival. Fingerlings stocked into a void created by a year or two of poor reproduction should have the maximum chance for survival."[5]

b. *Stocking Policy*

Minnesota's stocking policy guidelines reflect the results of the research discussed in the previous section. Although DNR does not have an official policy document, the draft policy statements and the Lake Management Planning Guide provide similar guidance for stocking. They state that where spawning, habitat, food, and other elements are adequate, lakes and streams do not require stocking to maintain fish populations. Stocking is recommended as an effective and practical tool:

> a) in newly created or rehabilitated waters,
> b) in lakes experiencing frequent winter kill where potential for public use is heavy,
> c) as an introduction of a desirable species determined by investigation to be suitable for a particular environment and compatible with the indigenous association of fishes,
> d) to maintain a species of game fish in waters where all elements of required habitat exist except for adequate spawning areas or spawning conditions,
> e) in waters where predatory species need assistance to establish proper balance in prey/predator ratio, or
> f) in intensively fished waters where the carrying capacity is inadequate to supply the angler demands. This is an expensive application of stocking and involves the introduction of catchable sized fish. Its employment is only justified by positive cost analysis.[6]

The Lake Management Planning Guide also outlines stocking guidelines and stocking rates recommended for each species. Most of the walleye stocking

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[5]Ibid. Johnson, p. 10.

[6]Draft Fish Management Policy Statement, May 1985.

in Minnesota is done on centrarchid-walleye lakes. These lakes are medium to large sized with many ecologically different habitats, some being good walleye habitat. Table 3.4 lists the walleye stocking rates recommended in the Lake Management Planning Guide for these lakes.

TABLE 3.4

STOCKING RATES FOR CENTRARCHID-WALLEYE LAKES

Percent Littoral Area	Size to be Stocked	Stocking Frequency	Stocking Rate (Per Littoral Acre)
50 +	Fry	Annual	500 - 1,000
25 - 49	Fingerling	Every 2-3 Years	1/2 - 1 pound
0 - 25	Fingerling	Annual	1/2 - 1 pound

Source: Lake Management Planning Guide, p. 16.

The guidelines also specify that all management should be evaluated at regular intervals; therefore, management should be planned and implemented to facilitate evaluation. For example, stocking plans should include not stocking some years so that a comparison can be made of year class strengths of stocked and nonstocked years.

Evaluations of stocking efforts give the Fisheries Section a better idea of when stocking is effective. Some area managers have begun to develop their own statistical evaluations which attempt to correlate population numbers to stocking schedules. In this way, managers can try to determine whether or not stocking has affected the population.

c. *How Well Has DNR Managed Fish Stocking?*

In order to examine how well DNR has managed fish stocking, we reviewed 119 of DNR's lake files. We wanted to look at DNR's efforts in all areas of the state, so we chose lakes in proportion to the number in each geographic area. In order to include more lakes that DNR actively managed, we reviewed four times as many lakes with a priority greater than five than with priorities of two to four.[7] We then examined these lakes in

[7]By active management we mean lakes where DNR has taken some action other than mapping the lake, such as surveys or stocking. DNR managers told us that little active management occurs on lakes with low priority numbers. For example, they told us that few of the priority 1 lakes had ever been surveyed. This was confirmed by our initial examination of DNR's lake files, so we did not include priority 1 lakes in our sample. DNR did not have a list of lakes that it actively managed, so we used the priority number as a proxy for active management. Although this sampling method does not allow generalization to all lakes in the state, we believe the sample does provide an indication of how well DNR is managing the fish stocking program.

detail and discussed them with DNR staff and others. Table 3.5 shows the characteristics of the sample.

TABLE 3.5

AVERAGE SIZE AND NUMBER OF LAKES IN SAMPLE

(By Region)

	Number of Lakes	Average Size (in Acres)	Number Stocked
Region 1	24	1,140	21
Region 2	37	1,199	18
Region 3	21	516	15
Region 4	20	1,238	18
Region 5	3	70	2
Region 6	14	356	7
STATE TOTAL	119	946	81

We reviewed the sample of lakes to determine whether DNR followed its stocking guidelines, whether the stocked fish population improved in test nettings, and whether DNR followed its own management recommendations on the lake. In this section we discuss our findings about each of these items.

(1) *Did Fish Populations Improve?*

The best way to look at the effectiveness of stocking fish is to compare anglers' catch rates before and after stocking. Unfortunately, this is rarely possible because of the cost of creel surveys. The most commonly used measure is to compare netting results from surveys before and after stocking. To get an idea how fish populations had changed as the result of stocking, we examined netting results for the 81 lakes in our sample that DNR currently stocked with fish. We counted stocking efforts as successful if the population of the stocked species was high or had improved in relation to state and local averages.[8] We found that:

- Fish stocking was successful in 67 of the 81 stocked lakes in our sample.

[8]Measured in numbers of fish/set and number of pounds of fish/set.

In the 14 lakes where DNR had not been successful, most were stocked with walleye. The reasons for lack of success varied, but most seemed to lack adequate forage base or just were not good walleye lakes.

(2) *Has DNR Followed Its Stocking Guidelines?*

One measure of the success of management is whether an organization follows its own internal standards and guidelines. We examined whether DNR was following the standards for stocking recommended in the Lake Management Planning Guide and the Lake Survey Manual for the 81 lakes that were stocked.

We found that:

- DNR had not followed its own recommended stocking guidelines in 36 of the 81 stocked lakes.

In most of these 36 cases, stocking was higher than the recommended rates. Several reasons were given by field supervisors for not following stocking rate guidelines.

- Prior stocking levels were ineffective, so higher levels were being tried.

- The area or region had too many fish on hand, and rather than waste them, fish were stocked into waters not originally planned for, or where effectiveness was uncertain.

- The lake was historically stocked, and, even though evidence indicated that stocking had no effect, the public demanded stocking.

The first reason, that previous stocking levels have been ineffective, is legitimate if there is reason to believe that higher rates might help, and there is some evaluation of whether they do help. The second reason, that there were excess fish on hand, is in our view wasteful. And the third reason, that the lake has been historically stocked, is also wasteful.

(3) *DNR's Management Recommendations*

For each lake DNR surveys, it makes recommendations for future fish management. These recommendations are found in both surveys and lake management plans. Because one measure of an organization's effectiveness is how well it actually carries out its own recommended actions, we examined the recommendations for lakes in our sample and compared the recommendation to what DNR actually did. We found that:

- DNR followed its own management recommendations on 87 (73 percent) of the 119 lakes in our sample.

In 80 of the 87 lakes where DNR had followed its own recommendations for management, the fish populations were good, and in six the fish populations had not improved. In the 32 lakes on which DNR did not follow its

own management recommendations, fish populations were good on 25 and had not improved on 7 others.

Earlier we found that DNR did not follow stocking rate guidelines on 36 lakes. We examined these 36 lake files to see if DNR was following its own management guidelines and found that on 18 lakes it was not. Previous management plans either recommended no stocking or stocking at lower rates than actually occurred. Of these 18 lakes, fish populations of the stocked species were good in 13 and had not improved in five. However, for many of the 13 lakes where fish populations were good, it is questionable if stocking contributed to the population.[9] It appeared in most of these lakes that DNR was stocking on top of already adequate natural populations.

(4) *U.S. Fish and Wildlife Service Review*

Because we wanted to see what fisheries professionals outside of DNR thought of some of the lakes in our sample, we asked the U.S. Fish and Wildlife Service (USFWS) to evaluate 16 lake files of various types from our sample of 119. We did not necessarily think these lakes had been mismanaged, but we had some question about the stocking rates, or the necessity of stocking, or the effectiveness of stocking on each lake.

While the information in DNR's files is not definitive the indications from the lake files the USFWS examined was that 12 of the 16 lakes did not need to be stocked and/or the stocking had been unsuccessful. The U.S. Fish and Wildlife Service response is included as Appendix A. Lake management plans had recently been prepared for some of these lakes, and the Fish and Wildlife Service regarded this as a positive factor. In general, the Fish and Wildlife Service felt that the success of DNR's stocking efforts had to be evaluated and modified if not successful. The USFWS and professors at the University both expressed the general view that DNR tended to stock too much without evaluating the results, and, in particular, that DNR tended to emphasize its walleye program even where stocking was not known to be successful.

Fishery Section management has the view that because Minnesota is well known for walleye fishing, and because fishing contributes significantly to the economy, stocking should be a major and expanding effort. The attitude expressed to us was that, although not all stocking efforts have proven to be effective, if the resource is not being degraded by stocking, it should be pursued. One reason for expanding stocking is that stocking is a very visible means of management. By expanding stocking, public perceptions about fishing opportunities are improved.

In summary, DNR is doing a good job of fish stocking on most lakes we examined. However, we noted a number of lakes where it is doubtful that stocking is needed, and some where stocking has not worked. Clear

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[9]Four of these 10 lakes were among lake files that the USFWS also examined. The USFWS review indicated that stocking was questionable on all four lakes.

policies outlining when stocking should be discontinued would greatly enhance managers' abilities to deal effectively with the public when managing these lakes.

- DNR needs to develop clear policies which will allow for discontinuance of ineffective stocking. Lakes should not be stocked just because of public pressure or because it has been done in the past.

6. STOCKING PROPOSALS

Beginning in 1985, the fisheries central office has required a proposed stocking list from each area office to determine the amount of fish to produce. Submitted in January or February, the proposed stocking list outlines anticipated stocking needs by lake or stream. Based on the stocking list, totals for each species are tabulated.

Proposed stocking reports frequently call for far more fish to be stocked into lakes than the department's guidelines would suggest. Fry stocking proposals, particularly in Region 2, call for far more fry to be stocked than the guidelines. Guidelines suggest stocking up to 1000 fry/littoral acre (a littoral acre is an acre of water less than 15 feet in depth). In Region 2, it is common for managers to propose over twice the recommended amount. In some cases, over 10 times the recommended amount has been proposed. Table 3.6 illustrates a few examples of proposals for higher than recommended walleye fry stocking. We recommend:

- Regional managers should review stocking proposals for reasonableness, and justify to the central office proposals higher than guidelines.

TABLE 3.6

1985 PROPOSED WALLEYE FRY STOCKING ON SELECTED LAKES

Lake Name	Proposed Stocking	Littoral Acres	Number Proposed Per Littoral Acre*
Two Island	2,000,000	515.0	3,883
Flour Lake	1,000,000	122.6	8,157
Smith	250,000	36.6	6,831
Mirror	500,000	48.0	10,417
McCarthy	500,000	41.0	12,195
Lawrence	1,000,000	315.0	3,175
West Lost	1,400,000	692.0	2,023

Source: 1985 Proposed Walleye Stocking List.

*Guidelines suggest up to 1,000/littoral acre.

Table 3.7 shows that actual stocking rates are also higher than guidelines on some lakes. One reason for such high stocking rates appears to be that many managers are stocking based on surface acreage rather than littoral acreage. Since many lakes have less than 50 percent littoral acreage, higher stocking rates result. A second reason is more practical. A common attitude in Region 2, where most eggs are taken and fry produced, was that, "We have the fry so why not stock them".

TABLE 3.7

ACTUAL FISH STOCKING RATES SINCE 1980 ON SELECTED LAKES

Lake Name	Littoral Acres	Year Stocked	Number Stocked (fry)	Number or Pounds Per Littoral Acre[1]
Victoria	120	1983	410,000	3,416.67
Wolf	145	1984	300,000	2,068.97
		1982	300,000	2,068.97
Astrid	57	1984	100,000	1,754.39
		1982	100,000	1,754.39
		1980	100,000	1,754.39
Island	311	1983	800,000	2,572.35
		1981	800,000	2,572.35
Two Island[2]	515	1983	2,400,000	4,660.19
		1981	2,000,000	3,883.50
Flour[3]	122	1984	1,000,000	8,196.72
		1983	800,000	6,557.38
		1982	1,000,000	8,196.72
		1981	1,000,000	8,196.72
Long	395	1982	800,000	2,025.32
Kabekona	532	1981	1,000,000	1,879.70
Florida	267	1985	1,900,000	7,116.10

Source: DNR.

[1]Guidelines call for less than 1,000/littoral acre.
[2]Management recommendations called for 2,500/acre.
[3]Management recommendations in 1984 called for "1,000 fry/littoral acre (100,000 fry) beginning in 1984."

DNR also stocks fingerlings at higher than proposed rates, but to a lesser extent. The main reason for fingerling overstocking is regional surpluses of fish. For example, in 1984 Region 3 proposed to stock 822,000 fingerlings in 90 lakes. Region 3 produced and stocked 1,146,000 fingerlings. Forty-seven of the 90 lakes were stocked at rates higher than proposed. An additional 15 lakes that were not proposed for stocking in 1984 were also stocked.

There are good reasons to not stock at such high rates. First, it is unlikely to be any more effective than the recommended rate. Second, it is wasteful. Fish unnecessarily stocked in one area could be stocked appropriately in other areas of the state. A corollary reason is that wasteful stocking means a higher capacity to hatch fry, and thus, more hatcheries are needed. We recommend:

- DNR fisheries proposals and stocking should more closely follow department guidelines.

7. FISH PRODUCTION

a. *Planned vs. Actual Production*

Using the totals from the stocking proposals the section can compare stocking requests to production capabilities and try to control the amount produced to match the proposed stocking. Production will never exactly equal the amount requested. In some years there will be extra fry, in other years not enough.

However, in the walleye fry program, production outstrips the proposed stocking significantly. The 1985 proposed stocking plans called for a total of 343 million walleye fry. The 1985 operational plan called for producing 554 million fry; 438 million were actually produced. No area managers indicated they were told to halt egg stripping because enough eggs had already been taken.

Overproduction results in stocking fry in lakes where it was unplanned, or stocking at higher rates than planned. In 1985, Region 4 hatched 44 million fry more than its proposed needs. Region 3, however, was 25 million short. Statewide, 96 million fry more than proposed were produced. Table 3.8 shows, by region, proposed fry needs and actual production for 1985.

DNR justifies overproduction because of fear of a production failure within an area or region, which would require compensation from other regions. However, an adequate planning system before the egg take and an adequate reporting system during the time eggs are being stripped should prevent excessive overproduction.

- DNR should take steps to ensure that fish production more closely follows stocking proposals.

TABLE 3.8

1985 WALLEYE FRY STOCKING

PROPOSED STOCKING AND ACTUAL PRODUCTION

(In Millions)

	Proposed Stocking	Actual Production	Extra (+) or Short (-)
Northwest Region 1	65.7	60.0	- 5.7
Northeast Region 2	182.7	256.4	+73.7
Central Region 3	57.3	32.2	-25.1
Southwest Region 4	28.7	73.4	+44.7
Southeast Region 5	.6	0	- .6
Metro Region 6	8.6	17.6	+ 9.0
TOTALS	343.6	439.6	+96.0

Source: 1985 Proposed Stocking in Lakes and Streams Report; 1985 Spawn-taking and Cost Summary Report.

b. *Rearing Ponds*

Rearing ponds are used to grow fry to a suitable size for stocking in public waters. Ponds used vary considerably in size, from as little as one to as large as 1,400 acres. Sometimes shallow lakes subject to winterkill are used.

There are three types of rearing ponds: state-owned or leased natural ponds, co-op natural ponds, and state-owned drainable ponds. Of the 348 rearing ponds used in 1984, 238 were state-owned natural ponds; 101 were co-op ponds, and 9 were drainable. The co-op ponds are cooperatively run with private groups, such as local sport fishing organizations or lake owners associations. Historically, co-op groups volunteered help in exchange for local stocking priority. DNR's current policy is to stock from co-op ponds in accordance with management plans.

The productivity of walleye rearing ponds differs markedly from region to region. Therefore, the number and size of fingerlings from ponds vary widely. The more productive ponds tend to be those with more fertile water which warms faster or earlier in the spring.

Poor weather can be a significant factor in the success of fingerling production. As a result, some ponds might produce well in some years and not at all in others. Other factors in pond production include whether there is an adequate forage base present, and whether there is a holdover from previous years' stocking. If there is inadequate forage base or a holdover population, fingerling production will be lower. Although these are factors that can be checked, DNR does not usually do so because the time it would check (spring) is its busiest time of the year. If it is at all possible, DNR should check these factors when choosing rearing ponds for the year.

What is clear, however, is that certain areas of the state have more and better ponds than others. DNR has traditionally managed rearing pond production on a regional basis. Although eggs are largely provided from a few areas in the state, the eggs or fry have been transported close to where they ultimately will be stocked. Production of fingerlings has been consistently better in certain areas, but fingerlings have seldom been transported outside the region. As a result, some areas of the state have more fingerlings than they need, and other areas do not have as many fingerlings of the proper size as they need.

In particular, DNR Region 2 does not have enough good quality ponds, and could utilize more and especially larger fingerlings than they can grow in regional ponds. Individual areas in other regions also have fewer good ponds than they need. However, a number of areas in the state have excellent ponds and the potential to add more. Table 3.9 shows walleye fingerling production by region from 1982 through 1984.

TABLE 3.9

REARING POND FINGERLING PRODUCTION 1982 - 1984

TOTAL POUNDS AND NUMBERS OF FISH - BY REGION*
(In Thousands)

	1982		1983		1984	
Regions	Pounds	Number	Pounds	Number	Pounds	Number
Northwest -1	41	1,670	24	506	61	1,638
Northeast-2	9	157	7	121	11	335
Central-3	26	728	25	434	39	1,240
Southwest-4	12	389	23	254	36	632
Metro-6	8	180	9	105	9	160

Source: Regional Production Reports - 1982-1984.

*Southeast Region 5 has no rearing ponds.

- DNR should coordinate production on a statewide basis. DNR should make greater use of the most productive areas for raising fingerlings.

A shift of production to the most productive areas of the state will require effective central coordination to get the eggs and fry to where they are needed, and to distribute the labor necessary to harvest the ponds. The result should be more and better quality fingerlings at a lower cost to the state.

d. *Distribution*

Interviews with field supervisors indicated that little effort is made to coordinate walleye production and distribution statewide. Although some effort is made to distribute eggs to different regions, fry are usually kept by the region where they were hatched.

Some regions have developed priority lists for stocking their lakes. Within each region, higher priority lakes are stocked before lower priority lakes. This helps to ensure that walleye stocking is more efficient. However, there is no mechanism to schedule stocking on top priority lakes in all regions before less important lakes are stocked. This scheduling would be most effective if done centrally.

For example, Region 4 was unable to produce all the fingerlings originally proposed for stocking in 1984, although both Regions 1 and 3 had a surplus of fingerlings. Region 4 was able to stock only six lakes with the number of fingerlings originally proposed. Sixteen lakes were stocked with less than half of the proposed amount and 22 lakes were skipped entirely.

Statewide in 1984, 4.17 million fingerlings were proposed for stocking; 4.25 million were actually stocked. However, only Regions 1 and 3 were able to stock the numbers of fish and the lakes which they proposed. Regions 2, 4 and 6 all experienced a shortage of fingerlings. Table 3.10 shows, by region, the number of fingerlings proposed and number stocked in 1984.

Clearly there were enough fingerlings in 1984 to meet the needs of all regions. Central coordination of fish distribution would ensure that all high priority waters are stocked before lesser priority, and that fish are transported to those areas where the need is greatest.

Several managers indicated that because no one is coordinating efforts, it is unlikely that fry transported to other regions would be returned as fingerling in the fall; therefore, managers are reluctant to send fry to more productive ponds in other areas. However, those same managers said that larger fingerlings from the more productive ponds would be cost-effective because of their better survival.

Another consequence of inadequate control over fingerling distribution is that stocking schedules are disrupted by stocking second and third priority lakes. The second and third priority lakes are usually those where the plan is to stock in every third year, or to skip every third

TABLE 3.10

1984 WALLEYE FINGERLING STOCKING--PROPOSED AND ACTUAL

By Region*
(In Thousands)

Region	Proposed	Actual
Northeast - 1	1,502	1,692
Northwest - 2	518	510
Central - 3	823	1,146
Southwest - 4	1,040	690
Metro - 6	288	213
TOTAL	4,170	4,251

Source: 1984 Proposed Walleye Stocking in Lakes; 1985 Regional Production Reports.

*Region 5 does not stock walleye fingerlings.

year. By stocking these lakes, the planned management is thrown out of its cycle.

- Fish distribution should be centrally coordinated, ensuring that top priority lakes across the state are stocked before lower priority lakes. Lakes where the management plan does not call for stocking should not be stocked just because there are unplanned regional surpluses of fish.

d. *Walleye Production Capacity*

DNR now has 13 walleye hatching stations, but has plans to add at least two hatching stations to expand the walleye program. These stations are only used about six weeks a year to hatch walleye eggs.

DNR considers an egg hatch rate of 70 percent to be a good year. The average hatch rate in 1983 was 66 percent and in 1984 was 68 percent. This produced over 438 million walleye fry in 1983 and over 366 million fry in 1984.

Construction of the new hatching station in Grand Marais is anticipated to cost about $100,000; operation of the facility, including stripping and hatching, will cost about $30,000 annually. DNR's rationale for a new hatchery in Grand Marais is that spawning at Grand Marais is about two weeks later than the rest of the state. Because spawning is later, the lakes where fry will be stocked have another two weeks to warm up and

begin to produce microrganisms for the fry to feed on. Because the run is later, DNR also maintains that Grand Marais will offer a last line of defense, so to speak, in case there are fewer eggs taken at other stations. Additionally, DNR believes that adding the two new hatcheries this year at Grand Marais and Hinckley will better distribute hatching capacity around the state. Nevertheless, the Grand Marais hatchery does not appear to be needed to meet local needs. According to managers in that area of the state, in the past, there has not been any difficulty in getting all the fry they could use.

Significant walleye hatchery capacity already exists. Table 3.11 lists the walleye hatching stations and their capacities. Currently, Minnesota is capable of hatching over 1 billion eggs; more than enough to produce the fish requested in the proposed stocking plans. Additionally, 30 portable hatcheries add another 330 million eggs to the hatching stations' capacities. Minnesota's research section has recommended in the past that more use be made of portable hatching devices. Additional capacity may be added relatively inexpensively through portable units.

Although new hatcheries' capital costs are eligible for reimbursement through the Wallop-Breaux program, operating costs are borne by the state. Since the hatcheries are only operated six weeks per year, but must be maintained all year, DNR should seek to minimize the amount of peak production capacity maintained. In addition, since DNR already overproduces walleye fry, it is questionable whether the state should add more hatchery capacity.

We conclude that:

- Current hatchery capacities are adequate for proposed walleye stocking. DNR should carefully evaluate the need for any additional walleye hatcheries.

C. EVALUATION ACTIVITIES

1. INTRODUCTION

The Fisheries Section uses several approaches in evaluating its activities, including lake surveys, creel census work, and research activities. The lake surveys provide biological information, creel censuses provide economic, harvest, and sociological data, while research produces long-term or specialized evaluations.

In general, we found that DNR does not do enough evaluation of its management activities. Although the department has increased the frequency of surveys, more are needed. In particular, more information is needed on the economic impact and payoff from management. Additionally, DNR needs to take action on the results of its evaluations.

TABLE 3.11

WALLEYE HATCHERY CAPACITY AND EGGS PROCESSED

1984
(In Millions)

Hatching Station	Capacity (Millions)	Eggs Processed 1984 (Millions)	1984 Percent of Capacity
Region 1			
Bemidji Area Hatchery	63	30.302	48%
Detroit Lakes Hatchery	100	23.453	23
Walker Lake Hatchery	99	68.477	69
Glenwood Area Hatchery	90	38.782	43
Park Rapids Area Hatchery	20	13.023	65
Washkish (Red Lake) Hatchery*	200	0	0
Region 2			
Cut Foot Hatchery	160	44.227	28
Duluth Area Hatchery	99	60.298	61
Tower Hatchery	150	92.160	61
Region 3			
Brainerd Area Hatchery	100	67.125	67
Region 4			
New London Hatchery	56	35.535	63
Waterville Area Hatchery	42	25.210	60
Windom Area Hatchery	26	3.782	15
Region 6			
St. Paul Hatchery	42	36.200	86
TOTAL	1,247	538.574	

Source: 1984 Regional Summary of Fish Production Reports.

*The Washkish hatchery has only been operated for hatching once in the last ten years. Eggs have been taken at Washkish in approximately half of the years since 1970. Problems with operating Washkish are weather conditions, no walleye spawning run in some years, and relatively more labor needed to take eggs and operate the hatchery.

2. LAKE SURVEYS

The most significant part of the section's evaluation activities is the lake survey. The surveys draw a biological picture of the lake resource by sampling fish populations and making other observations. We found that about 28 percent of staff time is spent on survey activity. Managers said that netting data from surveys was the most important information they had to evaluate their efforts.

Several different types of surveys are currently used, differing mainly in the scope of information gathered. Types of surveys include initial surveys and full resurveys, population assessments and test netting, and other specialized investigations. Also, a large lake sampling program began in 1983 to better monitor and evaluate the effects of increasing public pressures on the ten largest Minnesota lakes. Uniform techniques for the surveys are outlined in the Manual of Instructions for Lake Surveys.

Initial surveys and full resurveys provide baseline data which the manager uses to generate a management strategy or as comparative data for future evaluations. Initial surveys are the most complete surveys. Managers use the initial surveys and resurveys to collect information on the physical, chemical and biological features of a lake as well as descriptions of use, accessability, and development.

Specific data gathered during an initial survey or resurvey include water quality and chemistry, vegetation, lake depth and littoral acres (those less than 15 feet deep), normal water levels and fluctuations, watershed use and topography, shoreline description and uses, and suitabliity of spawning habitats. Resurveys or initial surveys also include test netting with both gillnets and trapnets.

Estimates of fish populations and estimates of growth for different species are obtained from testnets. *Gillnets* are used for netting walleyes, northern pike, suckers and perch. *Trapnets* are more effective in catching bass, panfish, and bullheads. Nets are set in representative areas of the lake.

Population assessments are less broad in scope than initial surveys. Netting information from these surveys includes aging data, growth rates on the important species, physical or chemical changes in the environment, length-frequency distributions, and fish weights and abundance. Fish age is determined from fish scales or from dorsal spine crossections, and is used to determine growth rates. Stunted growth rates can be indicative of over population or inadequate food base. Length-frequency data indicates the sizes of fish which are most common in the population and is used to help predict what size fish will be most available to the angler in the future. In reviewing surveys and population assessments from around the state we found that:

- Few Region 2 offices were performing length and frequency and aging analysis in conjunction with the surveys. Since this information is a useful management tool, we believe this analysis

should be done to some extent on every survey and population assessment.

Managers told us that netting data from survey work was the most important information they used in evaluating their efforts. Managers are able to assess the impact of stocking, habitat work, special regulations, and other resource management by comparing changes in population counts with established state indices.

Ideally, resurveys should be done at least every 10 years and population assessments every 3 to 5 years. Because Minnesota has such a vast resource, but a limited staff, not all of the fishing lakes are surveyed on a regular basis. Each area office has set up a rotating schedule which determines the year in which each lake will be surveyed. The most important lakes are surveyed most frequently and less important waters are fit in as time allows. Although not all lakes have had an initial survey, the most important fishing waters have been surveyed.

Although managers say they are doing as many surveys as they can, some lakes are only surveyed if problems arise. Some areas did less than 10 surveys in 1984, mostly because of staffing shortages. The International Falls area, with two lakes in the large lake sampling program and only three staff positions, completed only 11 lake surveys in addition to the large lake surveys in 1984. Table 3.12 lists, by area, the number of lakes, number of staff and number of 1984 lake surveys.

Our review of lake files made clear that lake surveys have been done with increasing frequency. Most lakes had only one survey in all the years prior to the 1970's. In our sample of 119 lakes, the average frequency of a survey or population assessment between 1970-1979 was 1.3. Between 1980 and 1985, almost as many, an average of 1.1 surveys per lake, have been performed. Higher priority lakes in the sample were surveyed more frequently than lower priority.

- DNR is increasing the frequency of lake surveys and population assessments.

Stocking activities should be cost-effective as shown by population assessments and creel censuses. We found that DNR had evaluation plans for 81 of the 119 lakes (73 percent) in our sample. All lakes that are being managed should have evaluation plans in place to determine the effectiveness of management. We recommend:

- DNR should ensure that an evaluation plan is in place on all lakes being actively managed.

Each survey form includes a place for management recommendations. The recommendations should be based on a careful analysis of the biological information and departmental guidelines. Management activities should reflect the recommendations until another survey is done.

Although a significant amount of effort is expended on surveys, management activities are not always based on the recommendations from them. We

TABLE 3.12

1984 LAKE SURVEYS DONE BY AREA OFFICES

Area Office	Total Staff	Number of Lakes	1984 Lake Surveys*
Region 1			
Baudette	2	6	1
Bemidji	7	125	18
Detroit Lakes	8	199	22
Fergus Falls	6	204	24
Glenwood	10	86	19
Park Rapids	4	74	17
Walker	8	65	10
Region 2			
Grand Rapids	12	1,093	53
Duluth	7	75	4
Ely	7	844	54
Grand Marais	3	132	27
International Falls	3	111	11
Finland	5	69	30
Region 3			
Aitkin	4	82	13
Brainerd	8	350	27
Hinckley	9	103	17
Montrose	7	154	23
Little Falls	3	78	21
Region 4			
Hutchinson	12	55	11
Ortonville	3	8	2
Spicer	8	60	7
Waterville	10	72	18
Windom	7	99	11
Region 5			
Lake City	6	7	7
Lanesboro	3	42	6
Region 6			
St. Paul	10	252	58
TOTAL	172	4,445	511

Source: 1984 Survey Report and July 1985 DNR Organizational Chart.

*Does not include the large lake surveys or the 86 stream surveys (52 of which were done in Region 5).

found that recommendations contained in the surveys were not being followed on 32 of 119 (27 percent) of the lakes we reviewed. Most commonly, stocking was done in numbers higher than recommended in the management plan. Managers told us that overstocking was often due to surplus fish on hand. In other cases, time and/or staff were insufficient to do the recommended activities. And, on one lake, the central office had suggested another management strategy.

- Steps should be taken to ensure that survey recommendations, based on all available data, are followed in management activities.

Although DNR has increased its survey activity, more needs to be done. Lakes that are actively managed should have high priority for assessments of management success.

One way that DNR has addressed the need for increased assessment is through the "large lakes program." The large lake sampling program began in 1983 because of increasingly heavy fishing pressure on Minnesota's largest lakes. To monitor and evaluate the resource, the sampling program requires complete annual surveys on each of the ten largest Minnesota lakes: Lake of the Woods, Leech Lake, Lake Mille Lacs, Lake Winnibigoshish (including Cut Foot Sioux), Lake Vermillion, Cass Lake, Kabetogama, Rainy Lake, Red Lake, and Lake Superior.

A written report with information on changes to the fishery over time and fish population data including growth rates, sizes, weights, and abundance is prepared each year. Creel census information on fishing success, by species and location, is also reported. We believe the large lake program is a positive and much needed effort on DNR's part to monitor a major portion of Minnesota's fishing waters.

3. CREEL CENSUS

Creel censuses survey anglers to determine how many fish they are catching and to gather other economic and sociological information. Creel surveys are used to supplement the biological information of lake and stream surveys with information about the impact of fishing on the resource. Recent research has improved the reliablility of creel censuses and expanded traditional approaches to allow estimates of angler satisfaction. This makes it easier for managers to identify public expectations and to manage the resource to better meet those needs. There are several different types of creel surveys currently used by the Minnesota DNR, including regular creel censuses, the Weithman-Anderson survey, and recreational use surveys.

Typically, creel censuses provide information on: a) fishing pressure (usually reported in hours/acre), b) harvest by species (number or pounds of fish/acre/day), and c) catch rate (the number of fish caught/hour of effort). Weithman-Anderson creels provide additional information on the economic value and the quality of fishing. Recreational use surveys give instantaneous counts of aquatic activities. They are easier and cheaper to conduct and still yield some basis for making judgments about increased use of the resource as the result of management.

The DNR has used the creel census as part of its fish management activities since 1939. Since then, several statewide surveys have been done, most recently in the mid 1970's. Fisheries did 18 creel surveys of various types in 1985. Between 1980 and 1984, 49 creel surveys were done.

Creel census information is becoming more and more important for effective management of the fishing resource. Demands on the resource have increased dramatically as fishing methods and equipment have improved. Concurrently, shoreline development has depleted spawning grounds, degraded water quality, and diminished aquatic vegetation. As it becomes more necessary to balance public demands, information about public preferences, recreational uses, and accurate fish harvest counts increasingly will be needed to make informed decisions.

Economic information from a creel census can help to justify fish management activities and expenditures. Data on how sport fishing dollars impact the state and local economy can be derived from a creel census. This enables DNR to estimate the true cost (or return) of fish management to the state. Dollar value is an important component of a cost/benefit analysis of management activities. As the resource becomes more constrained by public demands and finite funding, cost/benefit analysis will become a vital tool for managers.

Most area supervisors felt that more creel surveys would increase their effectiveness. However, they lack the staff and resources to do more. Area managers indicated that creel surveys are one way to improve relations with anglers and to determine what the angler desires. To better respond to public pressures, more resources should be directed toward determining public attitudes, expectations, and desires. With increased fishing pressure, creel census results will become more and more useful to fish managers. Creel census work is a reimbursable expense under federal aid programs. With increased federal aid, more money should be available to increase creel and other evaluation activities.

- We believe DNR should plan and budget for more creel census activities.

4. FISHERIES RESEARCH

The research unit exists to provide support, expertise, and information to the field managers. Minnesota's unit is highly rated by other professionals with whom we spoke.

Many of the current fish management practices are the result of research investigations. The Lake Management Planning Guide is a compilation of data from the investigations into one guide book. Some examples of these data include information on which species are most compatible, walleye production techniques, and evaluations of special regulations.

To ensure that research is focused on applied management problems, research supervisors prepared a project priority list several years ago with the help and input of the area managers. Most of the manangers felt they

had adequate input into research projects' subject matter. There was a significant minority, however, who felt that the research could be more statewide in scope and more directly useful to all managers. The annual training meeting provides an opportunity to become informed on current projects, but many managers feel that more interim communication about project findings would be helpful.

Criteria for judging a new project's suitability are based on the project's statewide applicability and whether or not the subject matter deals with a major fish species. If not of statewide appeal, a new project should encompass at least two regions.

In fiscal year 1986, DNR is funding 14 research projects. Research projects are 75 percent reimbursable by the federal government. In October, 1985, additional federal dollars became available and plans have been made to enlarge the research effort. The section intends to add seven new assistants for the biologists (90 percent time) and some new projects in 1986. Figure 3.1 lists the current research studies planned for 1986.

FIGURE 3.1

FISHERIES RESEARCH STUDIES
For Fiscal Year 1986

1. Evaluation of Lake of the Woods Walleye Fishery
2. Bluegill and Associated Fish Community Responses to Yellow Perch and Walleye Population Manipulation
3. Muskellunge Strain Evaluation
4. Walleye Hooking Mortality
5. Walleye Stocking Evaluation
6. Evaluation of Stocked Flathead Catfish Fingerlings
7. Evaluation of Lake Survey Sampling Nets
8. Evaluation of Trout Stream Habitat Management in Southeastern Minnesota
9. Evaluation of Three Strains of Lake Trout in Inland Lakes in Northeastern Minnesota
10. Evaluation of Special Regulations for Trout in Minnesota
11. Cohort Densities and Habitat Utilization of Juvenile Salmonids
12. Brown Trout Habitat Utilization and Relationship to Habitat Improvement
13. Simulation Model for Inland Lake Management of Rainbow Trout
14. Evaluation of Fluorescent Pigment Marking

Recently, the research unit has made a more concerted effort to coordinate projects and take advantage of outside expertise; there are now several projects in which the University of Minnesota is participating. There is no formal mechanism to insure that DNR research efforts are not being

duplicated elsewhere, but individual membership in the American Fisheries Society, emphasized by the research supervisors, has facilitated communication.

D. TROUT, SALMON, AND STREAM MANAGEMENT

The Fisheries Section manages about 2,000 miles of trout streams and 5,000 miles of warmwater streams. Minnesota also participates in the management of Lake Superior's sport fishery. In this section we discuss stream management and the trout and salmon programs. In general, we found that Minnesota is doing a good job in managing coldwater fish populations, a view shared by most coldwater anglers.

1. STREAM MANAGEMENT

Most of Minnesota's efforts in stream management are devoted to coldwater species, primarily trout and salmon. Stream management consists largely of four activities: surveys, stocking, habitat work, and regulation.

Over three-fourths of DNR's stream work occurs in the northeastern and southeastern parts of the state (DNR Regions 2 and 5). Particularly in the southeast, streams make up the majority of the resource available for fishing.

According to DNR officials, a large portion of the streams in the state have never been completely surveyed. Most of the survey work has been on trout streams in Regions 2 and 5. In 1984, Minnesota conducted 86 stream surveys and population assessments. Region 5 conducted 52 of the surveys and Region 2 conducted 17, with the remainder of the state surveying 17 additional streams. Fisheries managers we talked with around the state indicated they would like to do more stream work, but that with limited resources, stream work tended to have a lower priority. Only in Regions 2 and 5 did stream work receive higher priority.

Much of the management on streams consists of habitat improvement. Habitat improvement is undertaken to prevent bank erosion, provide greater amounts of fish shelter, improve spawning conditions, and to develop access to the streams. Since 1970, approximately 175 miles of stream have benefited from new construction.

One reason that more habitat improvement work is not done on streams is the expense of the heavy equipment and labor necessary. The costs can run from $1,000 to $20,000 per mile of stream improved. The average cost in 1983 was approximately $3,900/mile. Several projects have been done in conjunction with volunteer labor at lower costs.

Although not nearly as large as the inland lake stocking program, DNR does stock a number of warmwater fish into streams. In 1984, DNR stocked less than 25 warmwater streams.

DNR also maintains a relatively large trout and salmon stocking program. In 1984, DNR stocked over 6 million trout and salmon. The trout and salmon program is discussed in the next section.

2. TROUT AND SALMON PROGRAM

Minnesota has approximately 600 trout streams, a total of over 1,900 miles in length. Over 40,000 anglers fish for trout every year in streams. Minnesota also has 171 trout lakes, and 7 lakes that are managed both for trout and warmwater fish.

Over 450 stream segments are currently designated as wild trout streams. Although there are naturally reproducing populations of trout, demand is largely met by stocking fish raised in hatcheries. According to many we interviewed, trout culture has improved tremendously in recent years. Trout stocked are now larger at an earlier age and have a much better chance of surviving to the creel.

Despite improvements in trout culture, the program is still relatively expensive. Trout production and stocking are major expenditures for the DNR. Annual trout and salmon production in both 1983 and 1984 cost close to $700,000. Counting distribution costs, total salmonid production and distribution costs were about half the overall fish production and distribution budget. Table 3.13 shows recent expenditures for trout and salmon production and distribution.

a. *Lakes Managed For Trout*

Trout production has not been targeted solely at streams in Minnesota; approximately 170 lakes are also stocked with trout or salmon. Over 130 of these lakes have been made into a useful fishery through lake rehabilitation. Lake rehabilitation erradicates undesirable fish species in preparation for restocking with game fish. Lake rehabilitation is a costly procedure, varying in cost from $2,000 to over $20,000. Lake rehabilitations also need to be repeated periodically on most lakes. According to the department, the normal usefulness of a lake rehabilitation is approximately 10 years. Because this is an expensive process, DNR requires an acceptable cost/benefit ratio before rehabilitating lakes for trout; usually no more than two or three per year are done.

b. *Lake Superior*

Minnesota shares with Michigan, Wisconsin, and Ontario the responsibility for managing the waters of Lake Superior. Management is coordinated through the Great Lakes Fisheries Commission. A lake committee makes most policy and management decisions for its particular lake. The committees are composed of the person with primary fish management responsibilities from each surrounding state and Canada.

The lake trout population declined from an annual harvest of over 350,000 pounds in the 1920's-1930's to about 280,000 pounds per year in the 1940's due to fishing pressure. In the mid to late 1950's the Great Lakes were

TABLE 3.13

TROUT AND SALMON PROGRAM PRODUCTION AND DISTRIBUTION COSTS
1983 and 1984

1983		1984	
Hatchery	Costs	Hatchery	Costs
French River	$270,680.00	French River	$255,218.93
Spire Valley	47,867.96	Spire Valley	5,097.54
Crystal Springs	96,437.61	Crystal Springs	126,397.75
Lanesboro	207,701.94	Lanesboro	195,674.00
St. Paul	71,472.96	St. Paul	102,795.34
Subtotal	$694,160.47		$685,183.56
Regional Distribution Costs		Regional Distribution Costs	
Region 1	$ 7,020.00	Region 1	$ 12,652.02
Region 2	63,219.00	Region 2	67,673.00
Region 3	6,605.94	Region 3	3,229.52
Region 5	13,588.84	Region 5	17,120.99
Region 6	2,170.45	Region 6	1,540.00
Subtotal	$ 92,604.23		$102,215.53
TOTAL COSTS	$786,764.70		$787,399.09

Source: DNR.

invaded by the sea lamprey, contributing to the collapse of the lake trout population. By 1961, the commercial take in Minnesota waters had declined to 1,000 pounds. In 1962, Minnesota imposed strict limits on sport and commercial harvest of lake trout. Effective lamprey control measures were in place by the mid 1960's and Minnesota began to stock lake trout, salmon, and rainbow trout to build up populations.

Minnesota now stocks over 3.5 million trout and salmon each year into Lake Superior. In 1984, Minnesota received about 100,000 lake trout from federal fish hatcheries for stocking in Superior. The additional fish are part of a Minnesota effort to increase the populations and provide a viable sportfishery. In 1984, Minnesota also stocked 47 million herring to provide a forage base for the other species.

Management activities on the Great Lakes are organized to facilitate evaluation. Lake trout stocked into Lake Superior are fin-clipped or other-

wise marked. Selected stockings of other trout species are also periodically marked. Stocking success is evaluated by assessing stocked and non-stocked fish caught in assessment nets. An annual census is also conducted on Lake Superior to ascertain harvest, economic returns, and fishing pressure.

- Significant progress has been made on reestablishing fish populations in Lake Superior as well as introducing desirable species for the recreational angler's enjoyment.

c. *Trout Stamp*

Some of the costs for the trout program are borne by trout anglers through the sale of a $3.00 trout stamp. The trout stamp legislation was passed by the 1981 Legislature. It first required a $3 trout stamp be purchased by any angler fishing in designated trout streams in the state. In 1984 the law was amended to include both trout and salmon fishing in any designated trout stream, lake, or Lake Superior. In 1985, the trout stamp fee was raised to $5 effective in the 1987 license year.[10]

Table 3.14 shows the number of anglers purchasing trout stamps in recent license years, and the revenue generated from the trout stamp fee. The use of the revenue is *semi-dedicated* by statute. The statute reads that the commissioner shall approve projects for the following purposes:

> (a) Development, restoration, maintenance or preservation of trout streams and lakes;
>
> (b) Rearing and stocking of trout and salmon in trout streams and lakes and Lake Superior; and
>
> (c) Necessary related administrative costs in an amount not to exceed ten percent of the annual deposits into the game and fish fund attributable to the sale of the stamps.[11]

The department has not used more than the allowed ten percent for administrative costs. In fiscal year 1986, it plans to use the ten percent allowed administrative costs to pay for part of the salary and benefits of a trout program coordinator in the central office.

Table 3.15 shows the revenues, appropriations, and expenditures from the trout stamp monies since it was established. In several of the years the department has not spent all of the funds appropriated. When unspent, trout stamp appropriations cancel back to the Game and Fish Fund.

The trout stamp money has not been expended on unallowable expenses. Table 3.16 shows the expenditures in 1985 and the planned expenditures in

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[10]Minn. Stat. 97.4842. License year 1987 begins March 1, 1986.

[11]Ibid.

1986. Most of the money has gone for seasonal labor and equipment necessary to do stream habitat work.

However, the trout program does not seem to have expanded as the result of the trout stamp revenues. Stocking, stream improvement, and trout lake rehabilitation are the major expenditures of the program. Although over $150,000 in additional revenue was available in 1984, as Table 3.17 shows, trout program expenditures actually dropped by over $19,000.

DNR plans to allocate a portion of the fishing license surcharge to the trout program. In 1986, the department plans to spend $95,000 from surcharge money on stream improvement and research associated with the trout program.

TABLE 3.14

TROUT STAMPS PURCHASED AND REVENUE GENERATED

License Years 1983 - 1985

	Stamps Issued	Revenue
1983	42,512	$127,536
1984	47,361	142,083
1985	42,291	126,873

Source: DNR.

TABLE 3.15

TROUT STAMP REVENUES, EXPENDITURES, APPROPRIATIONS AND CANCELLATIONS
Fiscal Years 1983 - 1987

(In Thousands of Dollars)

Year	Revenue	Appropriation	Expenditures	Cancellations
1983	22.2			
1984	135.5	150.4	123.4	28.6
1985	183.8	179.2	136.4	42.8
1986	230.5*	250.0	N/A	N/A
1987	384.1*	250.0	N/A	N/A

Source: Statewide Accounting System and department estimates.

*Estimated.

TABLE 3.16

TROUT STAMP EXPENDITURES
1985 and Planned 1986

1985		
Personnel (primarily seasonal labor)		$104,854
Repairs		2,254
Printing		2,039
Supplies		13,555
Equipment		
- 4X4 pickup	$ 12,312	
- 14 foot boat	725	
- 12 foot boat	325	
- furniture	355	
	$ 13,717	
TOTAL		$136,419
1986		
Equipment		
- 2 distribution tanks	$ 7,000	
- boat for Lake Superior	50,000	
- 1 truck	18,000	
- hatchery equipment	30,000	
	$105,000	
Trout Program Coordinator Salary		$ 25,000
Seasonal Labor		90,000
Supplies and Materials		$ 30,000
TOTAL		$250,000

Source: Statewide Accounting System and DNR.

TABLE 3.17

TROUT PROGRAM EXPENDITURES

FY 1983 - FY 1984

Fiscal Year	Stream Improvement	Lake Rehabilitation	Production and Distribution
1983	$144,842	$10,694	$786,764
1984	100,774	34,538	787,399

Source: DNR.

E. OTHER DEPARTMENT EFFORTS

DNR management efforts encompass a wide range of activities. In this section of the report we briefly review the department's activities to ensure adequate access to Minnesota waters and to regulate fishing.

In general, we found the department is doing a good job in these areas. The department operates a good public access program. This program has helped expand fishing opportunities considerably. Finally, special regulations have proven to be valuable tools in regulating, diversifying, and monitoring fishing opportunities.

1. PUBLIC ACCESS

The Minnesota Department of Natural Resources is authorized by statute to acquire, develop and maintain water access sites for public use. The term "public access" means a site that provides facilities for launching trailered boats into the water.[12] Sites are usually two acres and contain a boat launch ramp, parking lot, and entrance road; high-use sites also contain toilets and trash barrels. There are approximately 1,200 state-owned public accesses and another 700-800 city or county-owned accesses throughout the state.

Since 1979, DNR's Division of Trails and Waterways has been responsible for carrying out the department's public access program.[13] DNR policy is to acquire public access sites either as an individual unit or in cooperation with local government. Joint projects usually involve the department providing financial assistance for purchasing or developing sites that local units of government operate and maintain.

The access program operating budget for the 1984-85 biennium was approximately $4.58 million. The access program is funded largely through the sale of state bonds, appropriations from the Legislative Commission on Minnesota's Resources (LCMR) and receipts from the unrefunded marine gas

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[12]Because public access must be present before the department can stock fish or spend public funds on fish management, the Fisheries Section defines public access in a broader fashion. It interprets public access to mean ". . . that at least part of the shoreland is in public ownership over which the public can move from a roadway or public watercourse to the shore without crossing private land. This means that fisheries management work will not be confined to those waters that have developed boat launching ramps and vehicle parking." (Draft Policy Statement, May 1985.)

[13]The Fisheries Section also acquires land to provide access to fishable water. However, its program is limited to purchasing easements along trout stream corridors. This allows the public to fish from the shoreline. During the 1982-83 biennium, 10.21 miles of trout stream easements were obtained at a cost of $246,670.

tax. The program receives no direct funds from the sale of fishing licenses, although some of the costs of access development are reimbursable under the Wallop-Breaux program. Table 3.18 shows the program's funding for the last three bienniums.

TABLE 3.18

BIENNIAL FUNDING FOR PUBLIC ACCESSES
(In Millions)

	1980-81 Biennium	1982-83 Biennium	1984-85 Biennium
LCMR	$1.00	$1.00	$1.40
Resource 2000 Bonding	1.74	1.74	2.10*
Gas Tax	.87	.90	1.00
TOTAL	$3.61	$3.64	$4.50

Source: Public Water Access on Twin Cities Metropolitan Area Lakes, Annual Report, 1980, 1982, 1984.

*Not all of the funds have been made available due to delayed bond sales.

Accesses are acquired and developed according to a set of priorities. In 1979, Trails and Waterways, in conjunction with the Fisheries Section, rated all lakes of at least 150 acres in size. Lakes were rated on three criteria: size, fish type, and water clarity.

Priority lists for acquiring and developing public access sites were established for each county in outstate Minnesota. Lists for the seven metropolitan counties were developed according to somewhat different criteria.

Trails and Waterways staff located in regional DNR headquarters each work down their own priority lists. Using these priority lists, the Trails and Waterways Unit have acquired and developed approximately 110 access sites since 1979.

Most area and regional fisheries managers agreed that access acquisition and development had increased considerably since the program was formalized within Trails and Waterways in 1979. Good relationships with regional Trails and Waterways staff were reported.

In general, field staff reported that some additional accesses were needed, but that the number of accesses had improved since Trails and

Waterways took over the program in 1979. Many field supervisors expressed a need for upgrading existing accesses and for more accesses on some large lakes. One problem noted in some areas was acquiring access on smaller lakes less than 150 acres in size.

Current statutes require an intensive management plan before accesses are developed on lakes less than 150 acres.[14] Trails and Waterways' policy requires that the Fisheries Section first submit an intensive management plan before the unit attempts to acquire access.

The minimum acreage requirement needs clarification among area fisheries staff. While lakes smaller than 150 acres are only assigned priority in the metropolitan area, trails and waterways staff can and do pursue accesses on those lakes where fisheries has indicated an interest and submitted plans to intensively manage them. This is most evident in the trout program where 137 of the 171 lakes managed for trout are less than 100 acres and have some type of public access.

- The Fisheries Section should clarify the 150 acre minimum to its field staff and establish procedures to acquire accesses on lakes less than 150 acres where a need exists. In addition, it should clarify what is meant by the term "intensive management".

In addition, priority lists for outstate counties should be developed in the same fashion as they are for the metropolitan area. There are many outstate areas with high population densities and few large lakes. Besides lake size, population density, number and size of other area lakes and fishing pressure should be considered in developing access priority lists for outstate Minnesota. The Fisheries Section should seek input into this process of updating outstate acquisition and development priority lists.

Acquiring public access on smaller fishable waters can be a useful tool to help alleviate fishing pressure on nearby high use lakes and distribute it across a wider base. In addition, increasing the number of lakes managed in an area could allow area staff to shift some of their efforts to lakes that may require less intensive management with more of a return to the creel than some of the lakes presently managed.

- The Trails and Waterways Division should update its outstate acquisition and development lists to include lakes of 100-150 acres and access adequacy. Input should be obtained from fisheries staff.

2. FISH MANAGEMENT REGULATIONS

Regulation is a widely accepted method of managing natural resources. In both hunting and fishing activities, licenses are required to participate. License holders are expected to know and follow a wide variety of rules and regulations designed to protect the resource from overuse.

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[14] Minn. Stat. 97.48, Subd. 15.

In wildlife management, restricting access by limiting hunting licenses is common. Game animal populations are highly visible and the effects of too much hunting are obvious. Anglers have not been limited in their access to fish. Fish populations, however, are not nearly as visible as game. So a threat to the fish population structure from angling in a lake is not as easily discerned.

In this section, we discuss the kinds of regulations currently used by the DNR and the role of regulations. Fish populations can be protected with regulations designed to make anglers less efficient or those which protect desirable sizes or species. Bait and equipment restrictions would be examples of angling efficiency restrictions. However, fish mangement regulations usually consist of catch or size limits which help to maintain a diverse population.

a. *Size and Catch Limits*

Size and catch regulations vary as to the species of fish and the type of waters being fished. In Minnesota, a possession limit of one fish for both muskellunge and sturgeon is the most restrictive catch limit. Smelt and whitefish have no possession limits.

Size limits range from no limits on a variety of underutilized species to a minimum size limit of 45 inches for sturgeon. Size limits are often used to protect those fish which will add most to the reproduction of that species. Other limits are used to protect a species from overexploitaion before a desirable size is reached.

b. *Experimental Waters Program*

In 1983, Fisheries was authorized to expand the experimental waters program to not more than 100 lakes and 25 streams. Designation as experimental waters allows the DNR to establish regulations especially suited to the management of a specific lake or stream. For example, on Saganaga Lake in Cook County, anglers are limited to possessing only one walleye over 22 inches.

On experimental waters, the DNR is empowered to establish special seasons, limits, methods of angling, or to take any other desirable actions. Public meetings are required before any lake or stream is included in the program.

c. *The Role of Regulations*

All of these regulations are intended to help maintain the health of Minnesota's fish populations. With increasing public demands, more efficient anglers, and increasing shoreline development, a healthy resource is becoming more and more difficult to maintain.

There is some controversy over how strongly regulations should enter into fish management. Area managers generally agree that regulation is a useful tool. However, many saw real problems with enforcing a set of rules which become too complex or cumbersome.

Unfortunately, only a limited impact on fish populations is realized with more efficient fish production and stocking, improved habitat development, or restrictions on angler techniques and equipment. A University of Minnesota fisheries scientist feels that more restrictions on the angler's access may be necessary in the future. He said,

> The next step (in fish management) is the least popular of all--and that is to limit the number of participants... We've been very slow to come around to that kind of recognition in fisheries. We're already to the point on many lakes where it's biologically impossible to maintain large numbers and large sizes of fish with an increase in the fishing population...[15]

Recognizing that more regulation will be an unpopular option, this biologist adds that public input into the management process will be a necessary ingredient. Unless a method of voluntary cooperation between the public and fish management is developed, there may indeed be a necessity for more restrictions on Minnesota's waters in the future.

F. COMMENTS OF ANGLER GROUPS

DNR trys to manage the fishery resource in order to provide the best fishing possible for Minnesota anglers. Angling groups are among the most interested and knowledgable audiences that DNR has for its resource management plans. Because of this, we were interested to determine angling groups' views on how well DNR is doing in managing the resource. We sent letters to a number of angling groups asking their views on the following questions:

1. How would you rate DNR's success in managing Minnesota's fishery?

2. Do you see any problems with DNR's current management? How would you like to see those practices changed?

3. In what areas is DNR doing a good job and in what areas could DNR improve its practices?

With some exceptions, angling groups that responded thought DNR was doing a good job in managing the resource. In particular, the following areas were cited as successful or good programs by most groups: Lake Superior trout and salmon programs, the habitat improvement program, the walleye program, the public access program, the commercial fishing buyout on Lake of the Woods, and the experimental lakes and waters program.

Despite a general perception by sport groups that DNR is doing well, they noted a number of areas that DNR could improve. Every group that re-

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[15]Interview with George Spangler, Duluth News Tribune, May 6, 1984, p. 1B.

sponded mentioned that an improvement was necessary in public education, information, or public relations. The general perception appeared to be that DNR did not get credit when it did well. At the same time, several groups' responses noted that DNR could improve in its openness with the public about its programs. One idea mentioned was an advisory board to comment on DNR plans. Several groups mentioned that DNR should try to utilize volunteers on cooperative projects.

Another theme that seemed to run through the responses was the need for increased staff in general, and for increased research in particular. Several groups also mentioned that more resources should be devoted to field work and less to central office "bureaucrats." One group also mentioned that improvement was needed in communication and coordination between DNR area offices.

Several groups thought DNR needed to improve long range planning, and should develop plans for surcharge and increased federal aid. Several groups also mentioned that waters should be managed based on a sound biological basis and less on a political basis.

We found the angler groups' comments very thoughtful and have included the responses as Appendix B.

GAME AND FISH FUND

Chapter 4

A. INTRODUCTION

Like most states, Minnesota funds the activities of its Department of Natural Resources (DNR), Fish and Wildlife Division, primarily through license fees from resource users. In Minnesota these fees are deposited in a separate fund of the state treasury known as the Game and Fish Fund. The fund is dedicated to pay for the activities of the Fish and Wildlife Division.

Our review of the Game and Fish Fund included an examination of certain financial transactions of the fund during fiscal year 1985, as well as the basic budgetary and financial controls over the fund. We also reviewed current expenditures from the fund, and examined the fund's current status. A financial audit of the Game and Fish Fund was conducted concurrently and will be issued separately in February.

In this review of the Game and Fish Fund we set out to examine:

1. What have been the historical levels of revenues and expenditures for the programs financed through the Game and Fish Fund?

2. Are the funds collected by the department expended on the activities required by statute and are proper controls over those funds in place?

3. How well has DNR managed and planned for the expenditure of game and fish funds?

4. Has DNR charged the appropriate amounts to the Game and Fish Fund for administration and other shared departmental functions?

We make the following major points about the Game and Fish Fund:

- Total Game and Fish Fund revenues and expenditures have grown over time, in both nominal and constant dollars.

- Most of the growth in revenues and expenditures is attributable to special purpose programs that have been added by the Legislature in the last ten years.

- Expenditures on basic fish and wildlife management programs have not grown in constant dollars.

- The Game and Fish Fund has been operating at a deficit since 1982. Without the use of fishing license surcharge funds, the balance of the fund would have been negative in 1985.

- Overall financial management of the fund has been lacking, although individual financial transactions of the fund are adequately controlled.

- DNR needs to improve significantly its management of federal aid projects.

- The Legislature may want to reexamine the current mix of revenue sources and expenditures of the fund. Many have suggested that license fees are no longer adequate to finance all of the current and proposed activities of the fund.

- Clarification is needed regarding certain statutory spending restrictions placed on semi-dedicated revenues of the fund.

The purpose of this chapter is to provide descriptive and background information on the Game and Fish Fund. We did not find that a financing crisis currently exists, yet the trend is clear. Although license fees do not need to be raised this year, if the current expenditure levels are maintained, more revenue will be needed soon.

The Legislature has added more and more special purpose programs to the fund. Whether the current structure of the fund is adequate is a question open to discussion.

This chapter is presented in four parts:

- An overview of the fund's purpose, revenues, and expenditures, including a discussion of whether certain programs should be financed from the fund;

- A discussion of the role of the fund balance in maintaining the fiscal solvency of the fund, and of the current fund balance trend;

- A discussion of the current financial controls over the fund, and their adequacy; and

- A review of federal aid receipts and administration.

B. OVERVIEW OF THE GAME AND FISH FUND

In this section of the report we provide an overview of the sources of funding, expenditures, and the fund balance for the Game and Fish Fund, and discuss some of the issues that face the fund.

1. SOURCES OF FUNDING

The Game and Fish Fund derives most of its revenues from license fees. In 1985, almost 85 percent of the revenues of the fund were from sport license sales. Figure 4.1 shows the major sources of financing for the Game and Fish Fund. As might be expected from the fund's name, the major two sources of revenue are from fishing and hunting licenses.

The other major source of financing is federal aid. All states receive a portion of excise taxes on sporting equipment to aid state fish and wildlife programs. Federal aid has made up anywhere from approximately 10 to 25 percent of the annual receipts of the fund.[1]

Table 4.1 shows that the total revenues of the Game and Fish Fund have grown since 1975 from $10 million to almost $30 million. In constant dollars, revenues have also grown, as Figure 4.2 shows.

The primary reason for revenues increasing in constant dollars is the addition of several new special purpose revenues that supplement license fees for basic hunting and fishing activities. These additional fees have taken the form of additional stamps or licenses required to pursue certain activities. In 1985, these fees were approximately $4.6 million or 16 percent of the Game and Fish Fund receipts.

In the next two sections we look at the revenues from fishing and hunting licenses and from the new semi-dedicated receipts of the fund.

a. *Fishing and Hunting Licenses*

Over one million resident and non-resident fishing licenses were sold in 1985. Table 4.1 shows that fishing license sales brought in over $12.3 million in fiscal 1985.[2] A total of over 900,000 hunting licenses were sold in 1985, generating over $10.4 million in revenue for the fund.[3]

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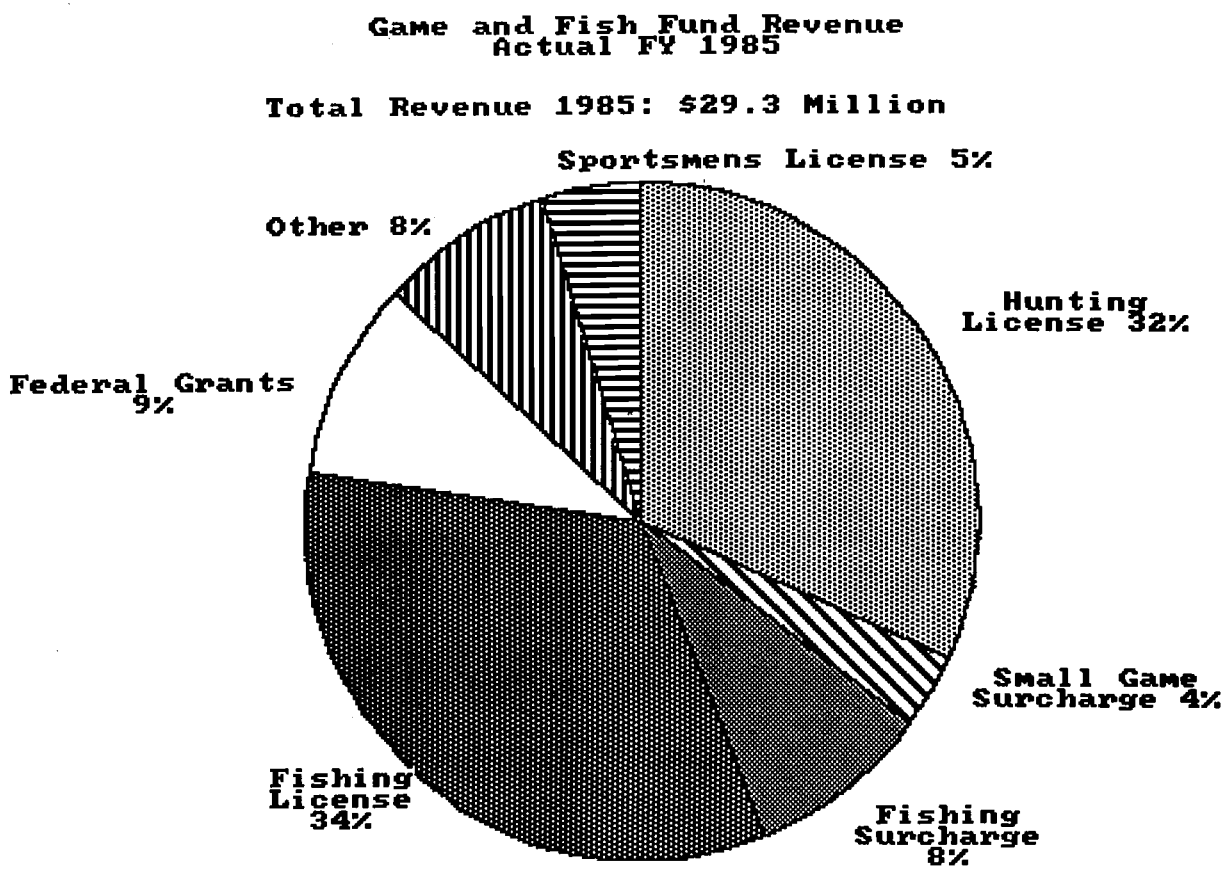
[1]Minnesota receives federal funds from the Dingell-Johnson (now the Wallop-Breaux) program for fisheries and the Pittman-Robertson program for wildlife programs, as well as smaller amounts from several other federal programs.

[2]This includes surcharge and trout stamp. The number of licenses is reported on a license year basis, revenues on a fiscal year basis.

[3]This includes small game surcharge, waterfowl stamp, and pheasant stamp. The number of licenses is reported on a license year basis, revenues on a fiscal year basis.

FIGURE 4.1



Source: Game and Fish Fund Budgetary Statements, fiscal year 1985.

TABLE 4.1

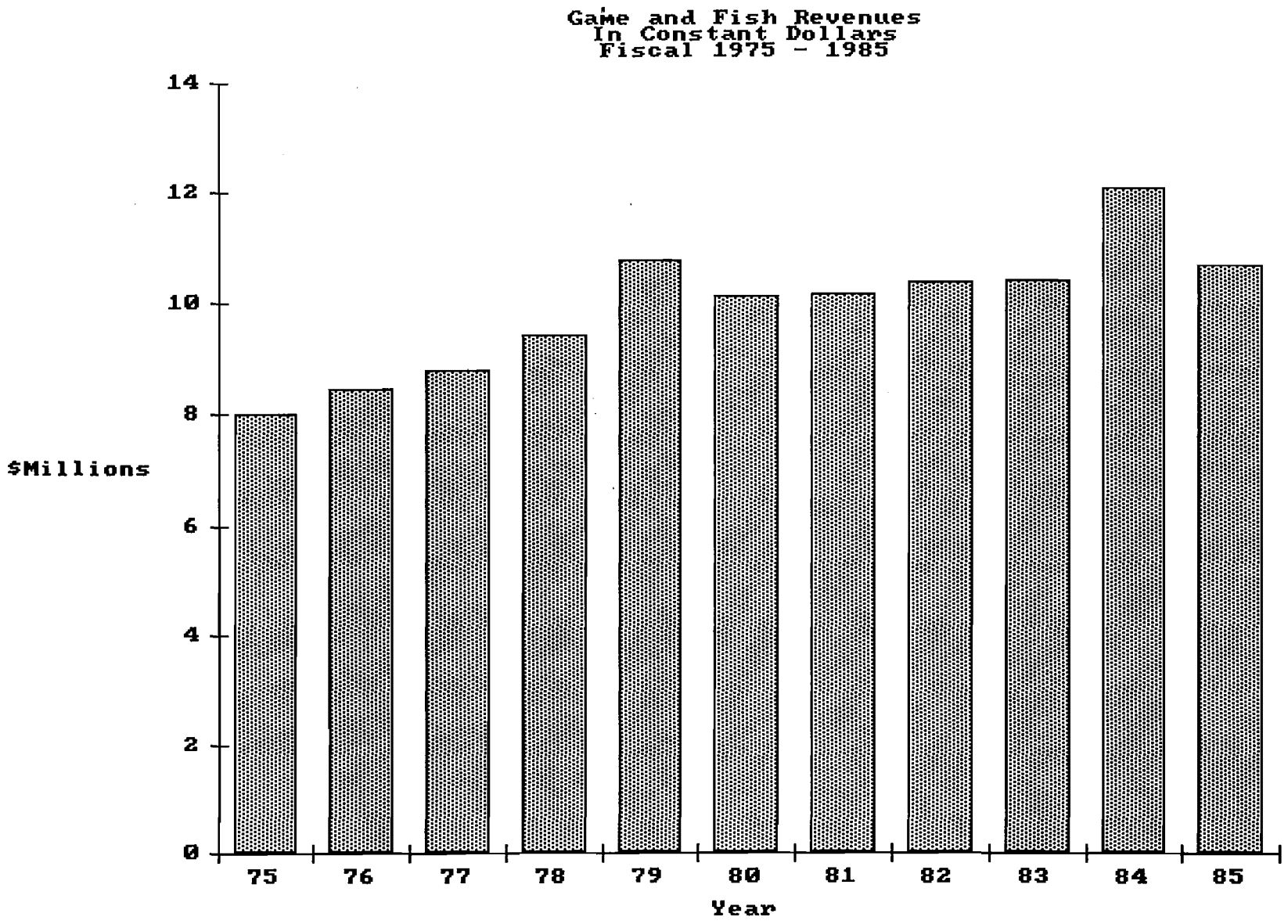
GAME AND FISH FUND REVENUES

Fiscal Years 1975 - 1985
(In Thousands of Dollars)

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Balance Forward	$ 4,078.7	$ 556.6	($ 719.1)	($ 374.5)	($ 265.8	$ 3,406.1	$ 5,691.6	$ 6,284.4	$ 5,089.0	$ 2,436.3	$ 2,239.1
Prior Year Adjustments	--	--	217.5	32.2	611.0	490.2	453.5	92.1	295.7	330.6	515.9
Adjusted Balance	4,078.7	556.6	(501.6)	(342.3)	345.2	3,896.3	6,145.1	6,376.5	5,384.7	2,766.9	2,755.0
Revenues											
Federal Grants	1,197.9	2,076.4	2,441.0	1,900.0	4,359.5	4,323.6	4,295.1	4,230.8	2,414.5	6,361.5	2,466.7
Occupational Permits & Licenses	56.0	55.5	102.2	121.6	121.6	122.5	129.2	183.6	176.7	168.2	182.7
Non-Occup. Permits and Licenses	56.2	62.4	0.0	0.0	48.9	83.0	101.8	57.4	74.1	114.0	148.6
Fishing License Surcharge	--	--	--	--	--	--	--	--	--	780.0	2,493.2
Hunting Licenses	3,618.1	3,711.1	3,637.0	4,937.6	4,830.2	6,324.5	5,530.8	5,867.3	7,456.8	8,489.4	8,451.4
Sportsman's License	--	--	--	253.8	825.1	966.5	1,390.4	1,574.1	1,714.6	1,491.9	1,364.3
Fishing License	5,140.3	5,355.6	6,375.7	7,103.0	7,916.0	6,795.0	7,896.7	8,099.8	9,614.2	9.752.7	9,709.1
Migratory Waterfowl Stamp	--	--	--	332.7	344.4	365.3	399.4	417.1	438.2	357.4	441.7
Trout Stamp	--	--	--	0.0	0.0	0.0	0.0	0.0	22.2	135.5	183.8
Pheasant Stamp	--	--	--	0.0	0.0	0.0	0.0	0.0	0.0	345.7	474.9
Property Rentals	104.1	131.1	109.6	97.7	95.9	117.7	106.8	143.5	218.3	261.4	238.5
Sale of Natural Resources	88.9	108.3	117.6	124.1	61.4	61.6	60.1	77.9	(combined with Rentals)		
Fines, Forfeitures, Etc.	0.1	0.6	107.3	92.9	217.4	310.3	305.8	372.2	333.9	360.0	366.0
Small Game Surcharge	0.0	0.0	0.0	0.0	0.0	0.0	794.1	737.1	1,310.5	1,110.5	1,049.7
Adult Hunter Education	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Interest Income	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,262.2	825.1	718.0	694.1
Other	136.8	169.6	126.8	74.9	21.9	11.2	78.9	43.0	49.4	22.4	30.8
Revenue Refunds	0.0	0.0	(2.6)	(1.9)	(132.0)	(174.0)	(13.9)	(31.0)	(33.4)	(35.7)	(45.7)
TOTAL REVENUES	$10,398.4	$11,670.6	$13,014.6	$15,036.4	$18,710.3	$19,307.2	$21,075.2	$23,035.0	$24,615.1	$30,432.9	$28,249.8
Transfers from Other Funds											
General Fund	--	--	--	--	--	--	12.4	--	--	--	--
Special Revenue Fund	--	--	--	--	--	--	0.0	10.0	--	--	--
Highway User Tax	--	--	416.2	444.7	450.3	432.4	333.1	275.7	209.5	270.9	746.1
Federal Fund	--	--	--	--	--	--	9.3	--	--	--	300.8
Computer Services Fund	--	--	--	--	--	--	10.6	--	--	--	--
TOTAL TRANSFERS	$ 0.0	$ 0.0	$ 416.2	$ 444.7	$ 450.3	$ 432.4	$ 365.4	$ 285.7	$ 209.5	$ 270.9	$ 1,046.9
TOTAL RESOURCES AVAILABLE	$14,477.1	$12,227.2	$12,929.2	$15,138.8	$19,505.8	$23,635.9	$27,585.7	$29,697.2	$30,209.3	$33,470.7	$32,051.7

Source: Budgetary Fund Statements Fiscal Years 1975 - 1985.

FIGURE 4.2



Source: Program Evaluation Division analysis of Game and Fish Fund budgetary statements, fiscal years 1975-1985.

In addition, 100,000 Minnesotans bought sportsmen's licenses for both fishing and hunting, contributing almost $1.4 million in revenues.

Most of the revenue from fishing and hunting licenses comes from just a few types of licenses, primarily, the resident fishing and resident deer licenses. For example, resident deer licenses account for about $6 million, or 80 percent of hunting license receipts, not counting dedicated or semi- dedicated revenues. Resident individual and combination fishing licenses account for about $5.3 million of fishing license receipts.

As a result, it is important that these licenses be examined periodically to determine if they are adequate. In the past, the Legislature has reviewed these licenses every six years. Resident fishing licenses were raised in license year 1982 and the surcharge was added for license year 1984; resident hunting licenses were raised in both the 1982 and 1983 license years. The 1987 Legislature will probably again be faced with examining resident license fees.

Collections from both fishing and hunting licenses have risen steadily over time. However, in constant dollars, license revenues have been trending downward. Figure 4.3 shows the trend for the resident and non-resident fishing licenses, without the fishing license surcharge. Even with the fishing license surcharge included, Figure 4.4 shows that fees are at about the average level of the last twenty years.

- Revenues from fishing licenses, even with the fishing license surcharge, are at about the average level of the last twenty years, in constant dollars.

The same trend holds for hunting licenses as Figures 4.5 and 4.6 show.

- Revenues from deer licenses are less than the average level of the last twenty years in constant dollars.

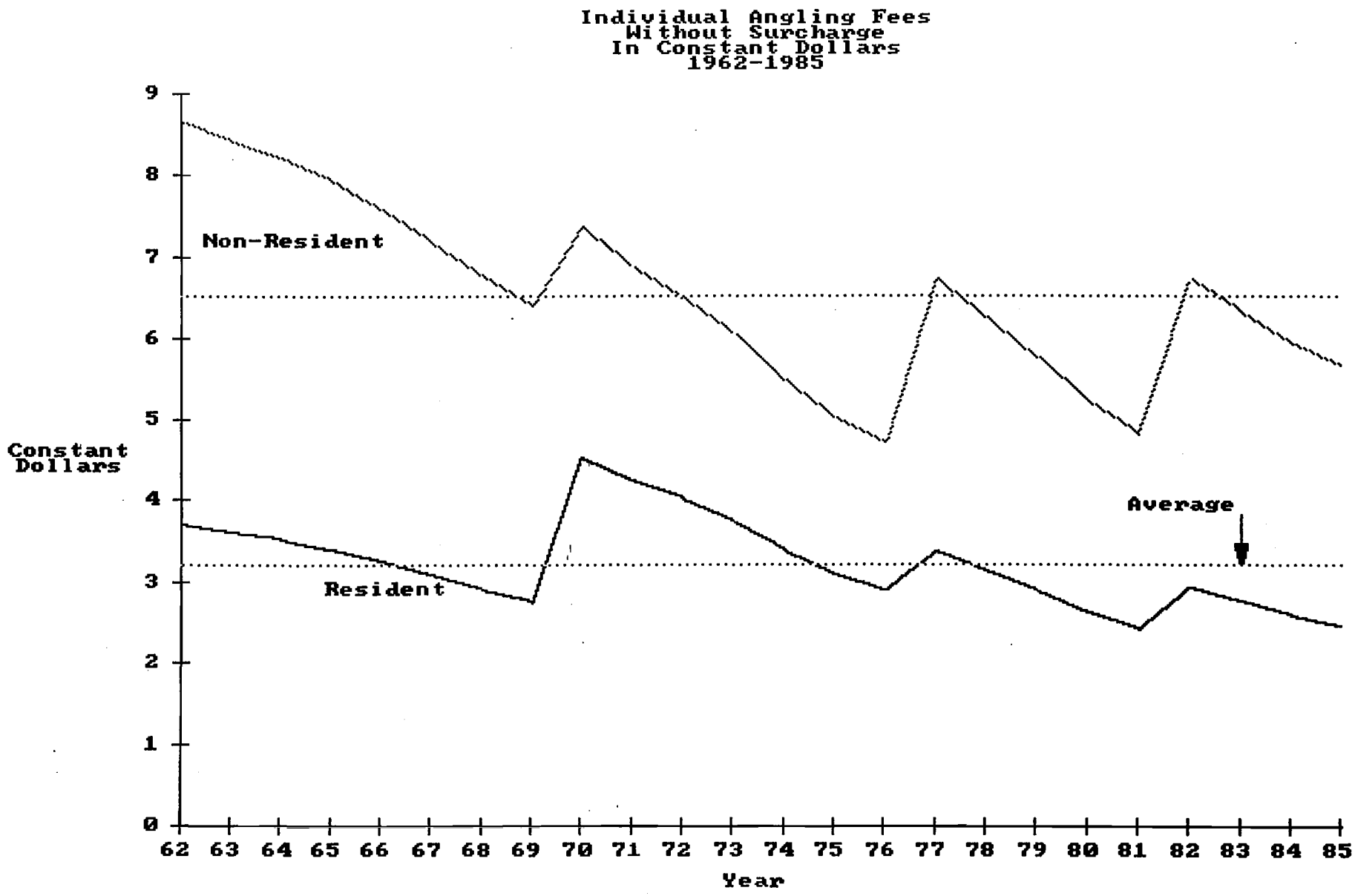
b. *Dedicated and Semi-dedicated Funds*

One of the first special purpose sources of financing was a small game surcharge, enacted in 1957. The small game surcharge of $4 (originally $1) is added to each small game hunting license for the purpose of acquisition and development of wildlife lands. In 1985, 150,000 small game surcharge fees were paid.

The small game surcharge is a *dedicated fund*, that is, the proceeds of the surcharge *must be* used for the purposes outlined in Minnesota Statutes 97.481 to 97.484. If all of the surcharge proceeds are not used in one year, any balance carries over into succeeding years rather than reverting to the general balance of the Game and Fish Fund. Because the proceeds of the surcharge must be spent on acquisition of wildlife lands, any carryover balance must be separately accounted for.

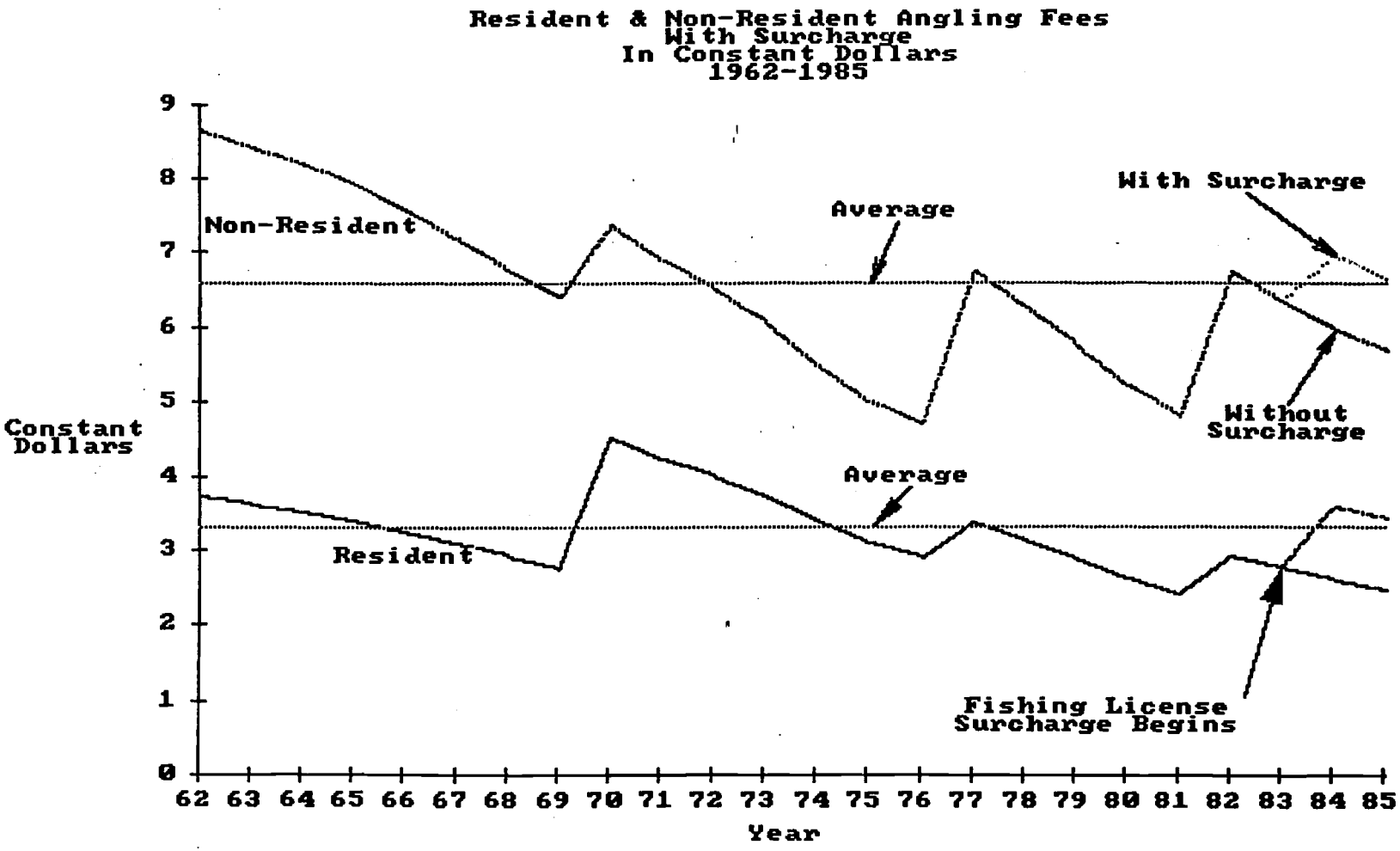
Unlike the small game surcharge, the other new funding sources added in recent years are not dedicated funds. They are what we shall call *semi-dedicated funds*. For *semi-dedicated* receipts the Legislature has

FIGURE 4.3



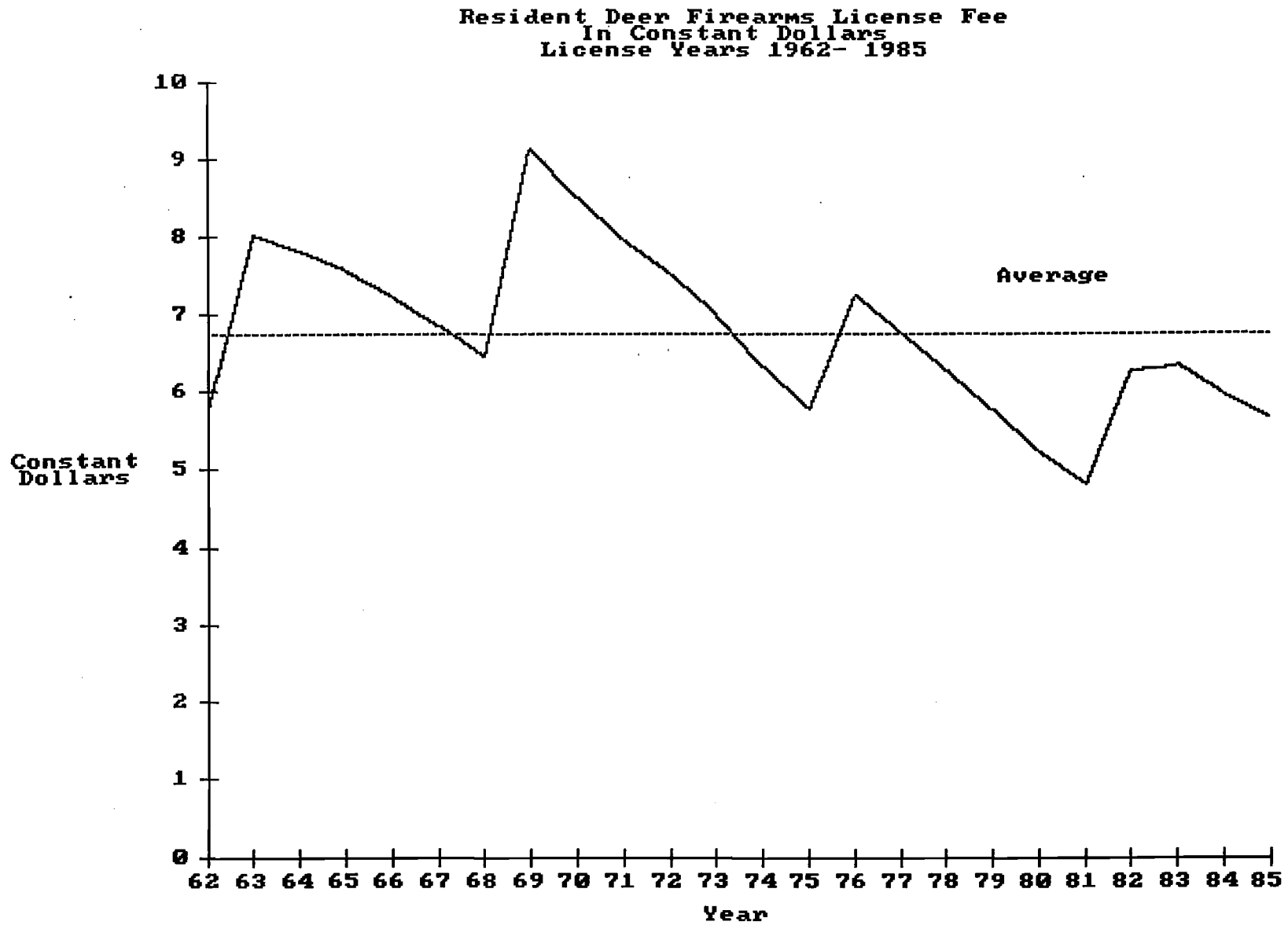
Source: Program Evaluation Division analysis of Game and Fish Fund budgetary statements, license years 1962-1985.

FIGURE 4.4



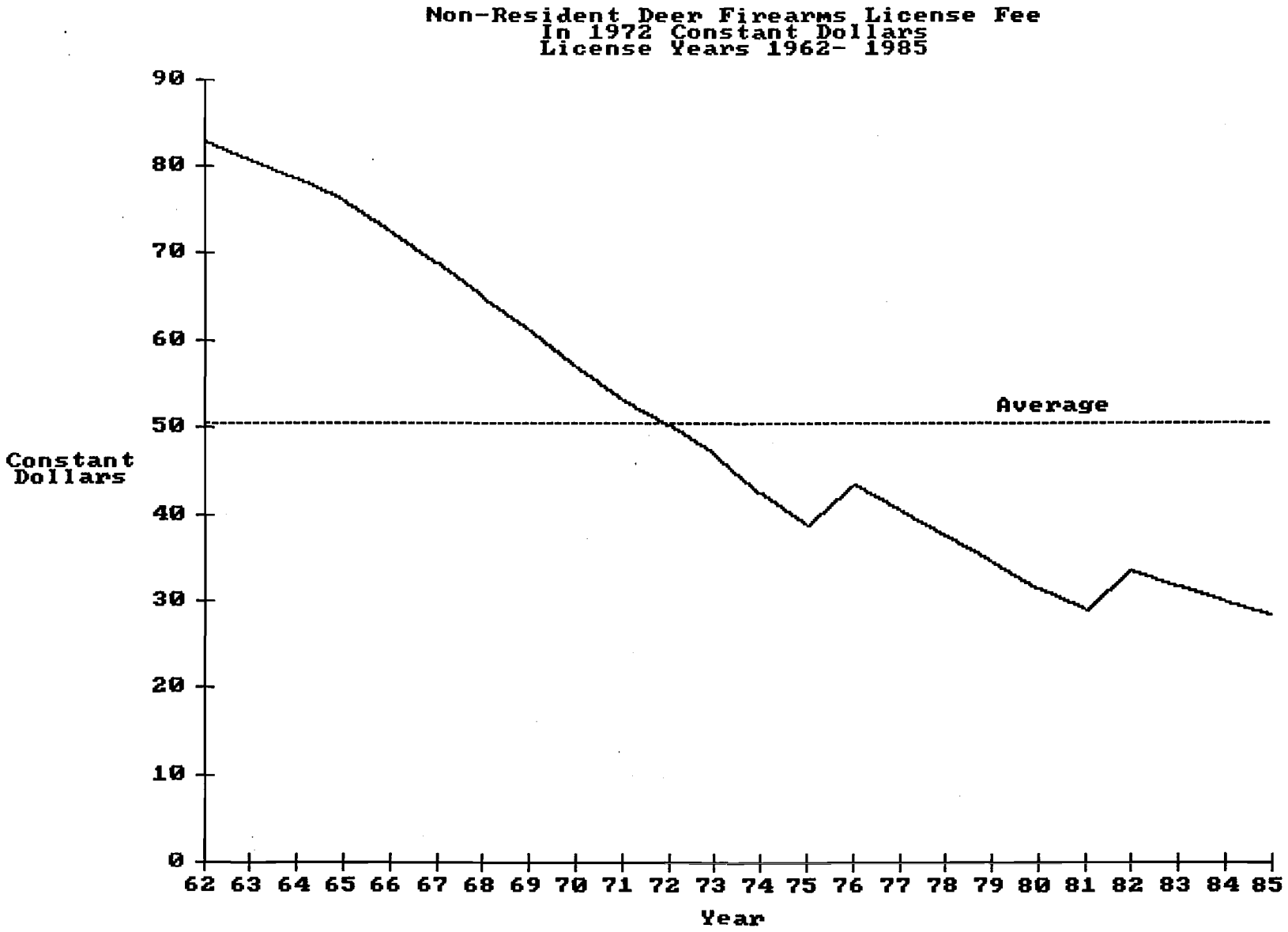
Source: Program Evaluation Division analysis of Game and Fish Fund budgetary statements, license years 1962-1985.

FIGURE 4.5



Source: Program Evaluation Division analysis of Game and Fish Fund budgetary statements, license years 1962-1985.

FIGURE 4.6



Source: Program Evaluation Division analysis of Game and Fish Fund budgetary statements, license years 1962-1985.

expressed a statutory purpose for the use of the funds, but there is no legal requirement that the revenue raised must be spent for that purpose.

Examples of semi-dedicated receipts include: the Migratory Waterfowl Stamp, enacted in 1977, the Trout and Salmon Stamp, enacted in 1981, the Pheasant Stamp, enacted in 1983, and the Fishing License Surcharge, enacted in 1983.

These semi-dedicated revenues are collected from sportsmen with a specific purpose in mind, but they are deposited into the Game and Fish Fund without a requirement that they be expended on the intended purpose. The reason for this is to retain flexibility in managing the cash flow of the Game and Fish Fund. All the same, there is an attempt made in the appropriations process to maintain a general link between the amount of funds generated from a specific license fee and the appropriations for that purpose.

Each of these fees is paid by individuals engaged in pursuing a specific activity, and paid only by those individuals. These fees are essentially user fees designed to raise additional revenues from a group of individuals to benefit the species they are interested in.

One option for the Game and Fish Fund would be to treat all of these semi-dedicated funds as truly dedicated funds, like the small game surcharge. What this would accomplish is to insure that all of the funds that sportsmen paid in for special purposes would be used only for those purposes. The disadvantage of dedicating the funds is that it would remove flexibility in managing cash flow and fund balance.

Although the Legislature has put statutory restrictions on the expenditure of *semi-dedicated receipts*, some of these restrictions are somewhat ambiguous. For example, the statutory language for administration of the trout and waterfowl habitat stamps limits expenditures for "necessary related administrative costs" to ten percent of the deposits into the fund. The pheasant stamp and fishing license surcharge receipts provide for "administrative and personnel costs" not to exceed ten percent of the deposits into the fund. It is somewhat unclear what constitutes administrative costs and whether personnel costs are included in administrative costs under the trout and waterfowl habitat programs.

In at least one case, DNR has violated the restriction that not more than ten percent of the annual *deposits* into the fund be spent. DNR argues that the Legislature meant for the deposits to be able to carryover from year to year. However, the statutory language does not allow that. We recommend that:

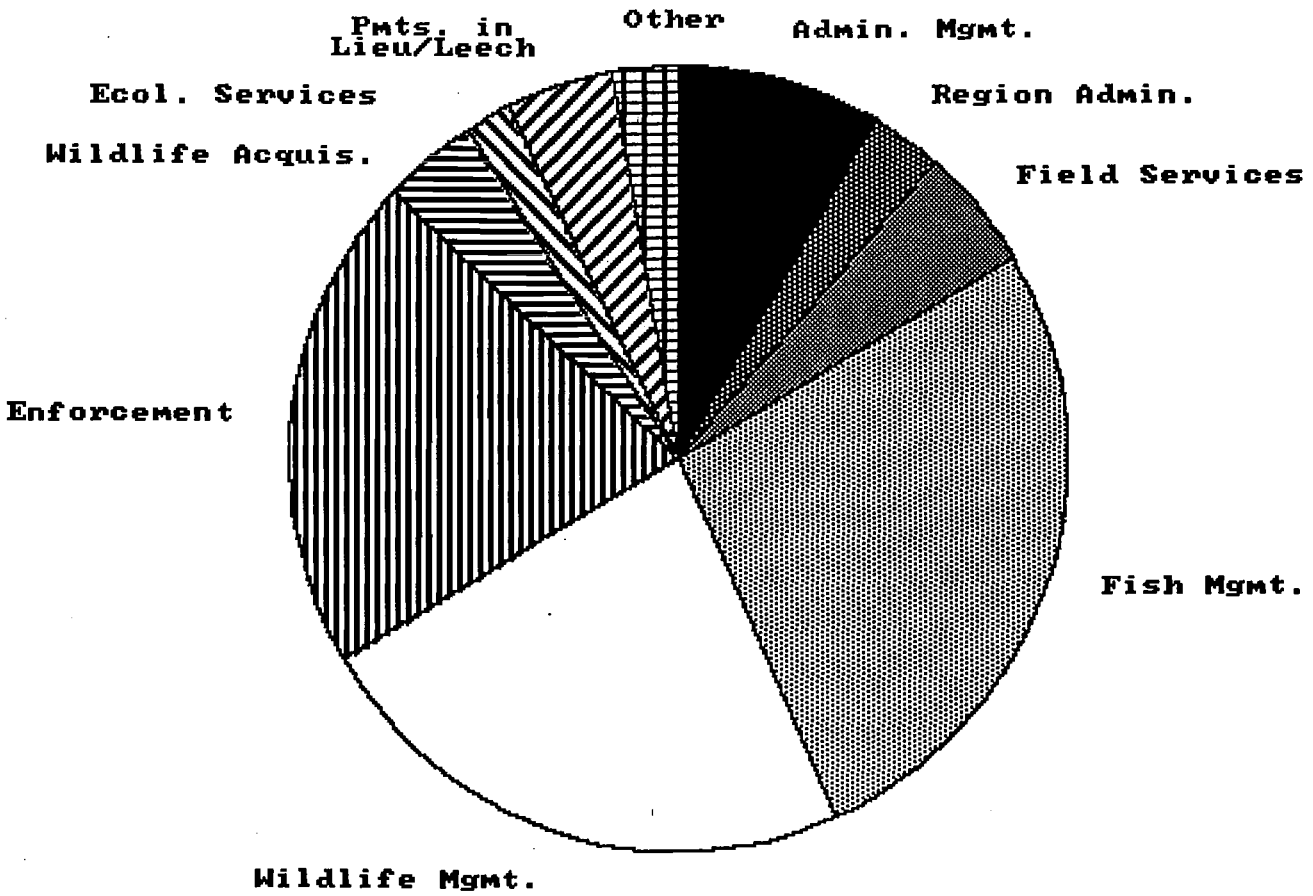
- The Legislature should clarify statutory restrictions on the expenditure of semi-dedicated receipts.

2. GAME AND FISH FUND EXPENDITURES

Figure 4.7 shows the major programs financed from the Game and Fish Fund. The primary expenditures are for the fish and wildlife management pro-

FIGURE 4.7

Game and Fish Fund Expenditures
By Program
Fiscal Year 1985



Source: Game and Fish Fund budgetary statements, fiscal year 1985.

grams, and for the enforcement program. Expenditures on fish management in 1985 were over $8.1 million, expenditures on wildlife management were over $7 million. Table 4.2 shows expenditures of the fund on various programs for the last ten years.

Despite the name of the fund, a large portion of the expenditures, approximately 40 percent in 1985, are on programs other than fish and wildlife management. Other programs financed through the fund include enforcement, administration, payments to counties in lieu of tax, ecological services, and payments to the Leech Lake Indian Reservation. These programs all benefit game and fish activities in some way, although the extent to which they should be funded from the Game and Fish Fund is an issue.

Expenditures from the Game and Fish Fund for *enforcement*, the largest non-fish and wildlife management program, were over $6.2 million in fiscal year 1985. The rationale for funding enforcement from the Game and Fish Fund is that the activities of the Enforcement Division primarily benefit sportspersons. The enforcement program exists to "protect our natural resources and guard against their abuse and depletion." Conservation officers protect all public lands, waters, parks, timbers, wild rice and wild animals of the state. Although enforcement activities do benefit fish and wildlife management, they also benefit and serve much broader state interests. One can make the argument that a smaller proportion of enforcement's budget should come from the Game and Fish Fund, however, that proportion has risen recently.

- The proportion of enforcement's operations and maintenance budget that comes from the Game and Fish Fund has risen from 58 percent in 1981 to 82 percent in 1984.

This shift of funding from the General Fund to the Game and Fish Fund was one way to help the General Fund during the budget crisis of the early 1980's. The effect of this, however, is to decrease the amount available for expenditure on fish and wildlife programs. If enforcement had been financed in 1984 from the General Fund at the same level as in 1981, an additional $1.8 million would have been available for fish and wildlife expenditures. This change of financing for enforcement contributed significantly to the fund balance decrease since 1982.

Another major expenditure item from the fund is the Department of Natural Resources *administrative overhead* costs. Money is appropriated from the fund for the administrative management, regional administration, and field services programs of the department. In fiscal year 1985, these three programs accounted for over 16 percent of the expenditures from the fund.

Administrative expenditures fund a portion of the central management activities of the department, including: the commissioner's office, financial management, engineering, land bureau, and the license center. Regional administration includes the regional fish and wildlife supervisors, regional administrators, and support staff. And field services includes central purchase of equipment, equipment repair, building maintenance, and

TABLE 4.2

GAME AND FISH FUND EXPENDITURES

FY 1975 - FY 1985

Expenditures	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Administrative Management	$ 1,611.1	$ 1,347.3	$ 1,314.6	$ 1,317.2	$ 1,455.2	$ 1,532.6	$ 1,742.5	$ 2,144.7	$ 2,262.9	$ 2,490.3	$ 2,617.8
Regional Administration	406.7	3.5	78.2	93.0	97.3	111.3	692.3	679.1	736.6	788.8	841.9
Field Services Support	932.1	853.6	810.3	837.9	894.4	916.9	942.1	1,408.9	1,472.6	1,547.4	1,573.5
Water Bank	--	--	--	--	--	--	--	200.0	200.0	0.0	0.0
Fish Management	3,141.0	4,179.9	4,090.1	4,780.5	5,018.2	5,309.6	5,601.9	6,461.6	6,946.0	7,983.6	8,002.1
Trout and Stream Management	0.0	0.0	--	--	--	--	--	--	--	123.4	136.4
Wildlife Management	2,319.2	2,812.9	3,430.6	4,540.1	4,107.9	4,468.0	--	--	4,689.2	5,465.9	5,350.5
Deer Habitat Improvement	--	--	--	--	--	--	--	--	323.9	832.4	872.8
Waterfowl Habitat Improvement	--	--	--	--	394.3	323.4	--	--	426.5	448.5	287.7
Pheasant Habitat Improvement	--	--	--	--	--	--	--	--	0.0	357.3	491.7
Total Wildlife Management	2,319.2	2,812.9	--	--	4,502.2	4,791.4	6,195.6	6.906.0	5,439.6	7,104.1	7,002.7
Computerized Licensing	--	--	--	--	--	--	--	--	158.6	210.6	208.4
Payments in Lieu of Tax	138.6	185.0	--	--	--	--	--	--	818.0	631.7	653.4
Wildlife Acquisition	--	--	--	--	--	--	--	--	694.9	1,955.1	1,111.8
Ecological Services	335.6	259.7	281.2	278.0	298.1	323.1	444.4	370.7	424.1	495.0	604.8
Enforcement	2,851.0	2,427.7	2,714.0	2,781.6	2,984.8	3,250.1	3,902.9	5,128.4	5,808.8	6,168.4	6,225.1
Water Access	422.5	533.2	330.3	281.0	292.4	353.1	517.2	434.2	464.6	483.0	536.5
Unemployment Comp. Deficiency	--	159.1	226.1	--	297.5	--	345.8	0.0	795.5	--	--
U.E. Interest Penalty	--	--	--	--	--	--	--	--	--	--	--
Workers' Comp. Deficiency	--	--	78.5	--	--	--	--	--	348.3	--	--
Leech Lake Payments	--	--	--	--	--	--	566.0	443.9	746.3	652.5	695.2
Game and Fish Contingency	--	--	--	--	--	--	--	--	--	--	--
Retirement Contrib. Reduction	--	--	--	--	--	--	--	--	--	--	--
Other	1,657.6	--	--	--	8.1	3.2	--	--	55.1	151.0	64.3
Expend. Special Revenue Fund	--	--	--	--	--	814.3	--	--	--	--	--
Estimated Cancellations	--	--	(54.8)	0.5	0.0	(1.3)	--	--	--	--	--
TOTAL EXPENDITURES	$13,815.4	$12,761.9	$13,299.1	$14,909.8	$15,848.2	$17,404.3	$20,950.7	$24,177.5	$27,371.9	$30,784.9	$30,273.9

Source: Budgetary Fund Statements Fiscal Years 1975 - 1985.

other property related functions. In 1985, other special revenue accounts of the department did not contribute to the financing of the central overhead activities of the department. In 1985, DNR had over $12 million in funding from special revenue accounts.

Payments to counties in lieu of tax are made by DNR to reimburse counties for property taxes they would have received if DNR had not acquired the land for public purposes. Payments in lieu of tax for other natural resource land, such as forestry and parks, are made from the General Fund. The rationale for making payments from the Game and Fish Fund is that the fund should pay the in-lieu tax for land acquired for public hunting grounds and wildlife refuges. The opposing argument is that these lands are also used by non-anglers and hunters, and that the payments should be consistent for all lands acquired by the department. The Governor's Citizens Commission to Promote Hunting and Fishing recommended in December 1984 that in-lieu of tax payments to counties be made from the General Fund. These payments amounted to over $650,000 in fiscal year 1985.

Water access acquisition has in the past been partially funded from the Game and Fish Fund. Water accesses are acquired by the Trails and Waterways Division of DNR acting in concert with the Land Bureau. In fiscal year 1985, over $500,000 was paid from the Game and Fish Fund to acquire and develop water access sites. The revenue to fund this activity comes into the Game and Fish Fund from a percentage of the unrefunded gas tax from the Department of Transportation. In addition, the Legislative Commission on Minnesota Resources (LCMR) has made significant contributions to water access over the years.

In fiscal year 1986, water access development will be paid from a new water recreation account. Access acquisition and development are reimburseable expenses for the federal aid programs; any reimbursements from these federal aid programs must be used for fish and wildlife related purposes. Beginning in federal fiscal year 1986, a minimum of 10 percent of a state's allotment under the Wallop-Breaux program must be used for development of boat accesses. Minnesota will be eligible to receive approximately $4.6 million under Wallop-Breaux in federal fiscal year 1986.

Another item financed from the Game and Fish Fund is the payment made to the *Leech Lake Indian Reservation* under the terms of a 1980 agreement. In return for allowing non-tribal members rights to hunt and fish on the reservation, Leech Lake receives five percent of the proceeds from all fishing and hunting licenses sold in the state. The tribe previously collected a fee directly from anglers and hunters who used the reservation to fish and hunt. When the agreement was reached with the reservation, no additional sources of revenue were targeted for the Game and Fish Fund to pay for the agreement. The result, then, was a three percent decrease in revenues available from fish and wildlife licenses. In fiscal year 1985, Leech Lake received $695,000 from the Game and Fish Fund.[4]

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[4]See Minn. Stat. 97.431-97.433. Sixty percent of the reservation's payment is from the Game and Fish Fund.

The Game and Fish Fund also finances part of the activities of the *Ecological Services* Section in the Division of Fish and Wildlife. The Ecological Services Section is responsible for providing centralized laboratory services to the department, statewide supervision of the Aquatic Nuisance Control program and Lake Aeration program, environmental review for fish and wildlife, investigation of pollution problems including acid rain, and coordinating the Division of Fish and Wildlife's long range planning process.

Ecological Services is also partially (about 40 percent) funded from the General Fund. In fiscal year 1985, approximately $600,000 was paid out of the Game and Fish Fund for this activity.

Game and Fish Fund expenditures have risen over time with inflation from $13.8 million in 1975 to over $30.3 million in fiscal 1985. Figure 4.8 shows that in constant dollars expenditures from the fund as a whole have also risen slightly over this time period.

Although expenditures from the fund have risen over this time period in constant dollars, it is largely because of the addition of new revenue sources and the additional responsibilities that came with them, and because of other decisions regarding what should be financed from the fund. (For example, funding the Leech Lake payments and increasing the amount of the enforcement program financed by the fund).

Overall, our analysis suggests that:

- The constant dollar increase in Game and Fish Fund expenditures has not been a result of increases in the basic fish and wildlife programs.

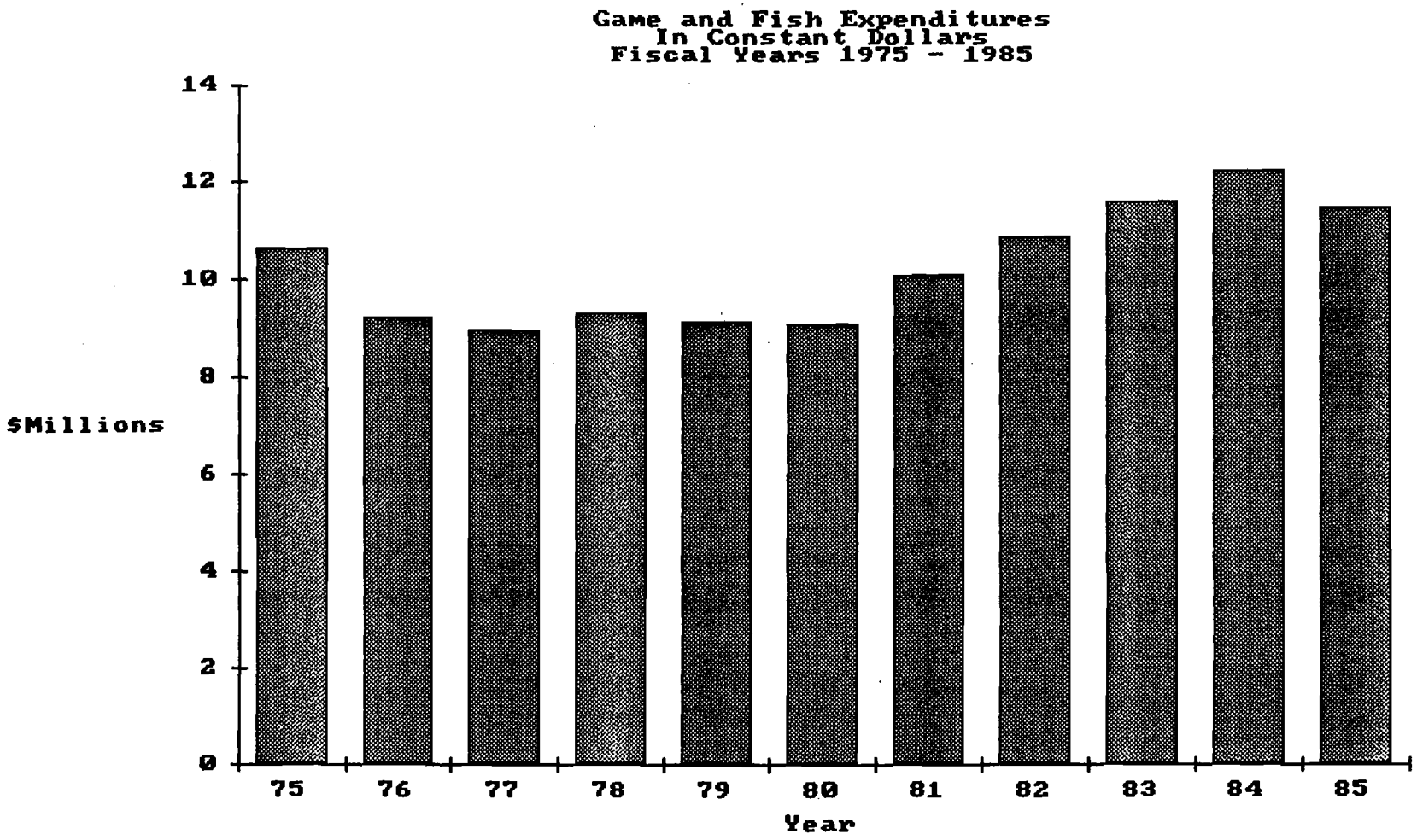
Fish and wildlife programs now make up about 50 percent of the total expenditures from the fund versus about 55 percent ten years ago.

C. FUND BALANCE

The Game and Fish Fund is a separate *dedicated* fund in the State Treasury. The revenues accruing to the fund must be expended on the purposes of Minnesota Statutes Chapters 97 to 102. Any end-of-year balance of funds unspent is carried forward as a fund balance into the next fiscal year. This carryover plays an important part in the financing of game and fish activities. Because license fees are set by statute, the fees are not normally changed every year. Instead, a fund balance is used to provide a cushion that can be spent down between fee increases.

One reason why the Game and Fish Fund exists as a dedicated fund is to fulfill requirements of federal funding. The federal government has historically provided part of the financing for state game and fish activities through the Pittman-Robertson Act for wildlife and the Dingell-Johnson Act for fisheries. These two acts require as a condition of

FIGURE 4.8



Source: Program Evaluation Division analysis of Game and Fish Fund budgetary statements, fiscal years 1975-1985.

receiving the federal money that there be laws passed in each state that "... shall include a prohibition against the diversion of license fees paid by hunters (fisherman) for any other purpose than the administration of (the) state fish and game department."[5]

Despite this provision, however, there appears to be no requirement that a separate fund exist. Nonetheless, having a separate Game and Fish Fund is a reasonable response to the federal requirement.

The proceeds of all of the fees collected from Chapters 97 to 102 of Minnesota Statutes are annually appropriated to finance the activities of the Division of Fish and Wildlife subject to any restrictions contained in appropriation acts.[6] Although the department has this open appropriation authority, it has not spent funds under that authority for several years. Instead, the department has submitted its budget request to the Legislature and has gone through the normal budget and appropriation process. Given the department and the Legislature's current process of allocating funds from the Game and Fish Fund, we recommend:

- The Legislature should remove the annual appropriation language from MN Stat. §97.49.

1. HISTORICAL FUND BALANCE

The balance of the Game and Fish Fund carries over from year to year. The license fees that make up the fund balance have typically been raised in every third biennial budget cycle, or every six years. The first biennium after license fees are raised there is usually a healthy fund balance that is slowly drawn down over the next two bienniums, necessitating a new fee increase. One can clearly see this trend by examining Figure 4.9 which shows the fund balances and Figure 4.10 which shows revenues and expenditures at the end of each fiscal year since 1963.

2. RECENT FUND BALANCES

The Game and Fish Fund has been running a deficit since 1982. That is, expenditures have exceeded revenues and the fund balance has been depleted from over $6 million to $1.4 million in 1985. The reason for this decline is twofold. First, the decline is partially attributable to the normal cycle of raising license fees every six years, with a declining balance in between fee increases. Second, additional expenditure items have been added to the fund. As we have seen, payments to the Leech Lake Indian Reservation began in 1981, and, the proportion of the Enforcement Divi-

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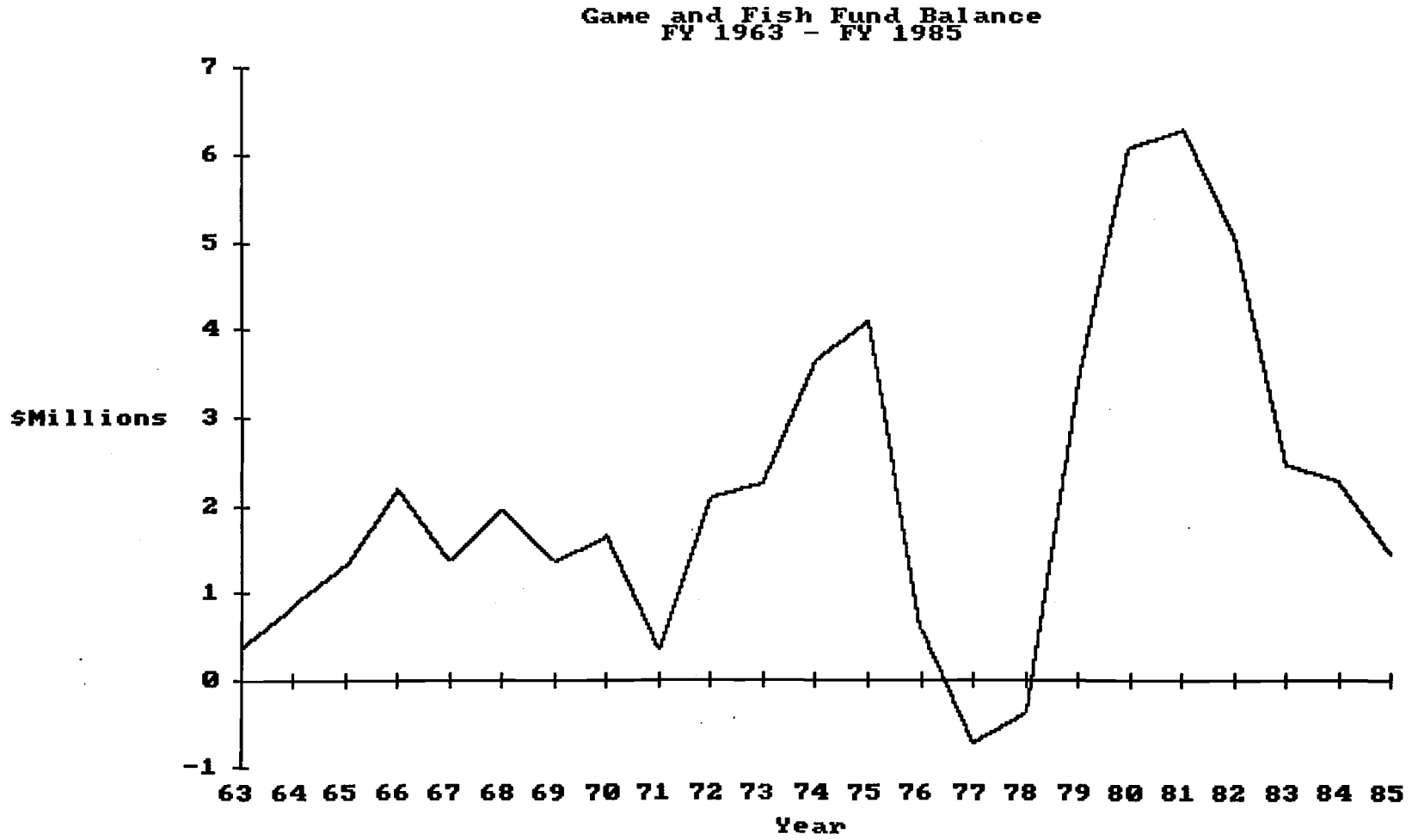
[5]Federal Aid in Wildlife Restoration Act (Pittman-Robertson Act) 50 Stat. 917, as amended 16 U.S.C. 669-669b, 669c-669i, and Federal Aid in Sport Fish Restoration Act (Dingell-Johnson Act) 64 Stat. 430, as amended 16 U.S.C. 777-777k.

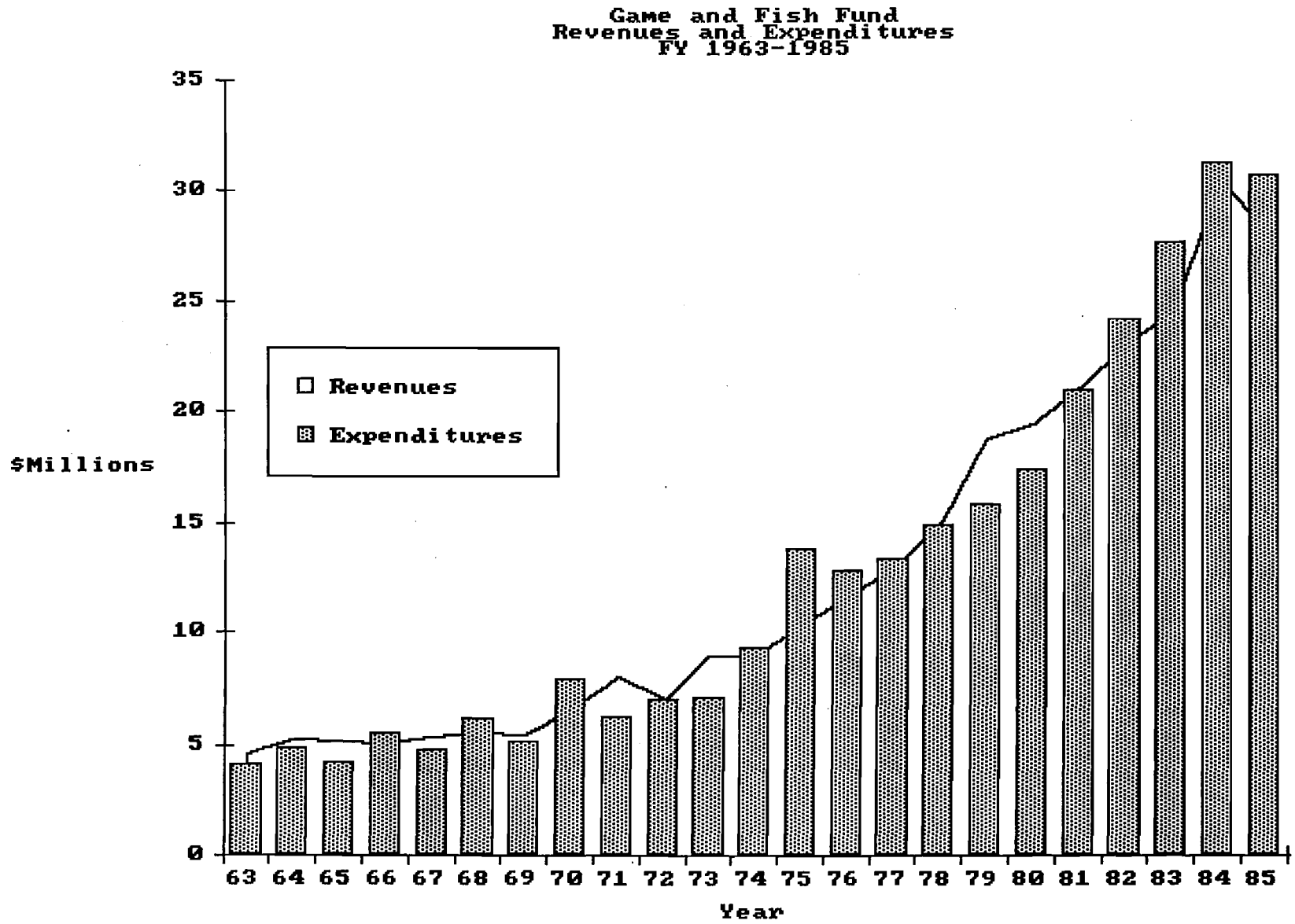
[6]Minn. Stat., Section 97.49.

FIGURE 4.9



Source: Game and Fish Fund budgetary statements, fiscal years 1963-1985.

FIGURE 4.10



Source: Game and Fish Fund budgetary statements, fiscal years 1963-1985.

sion's budget financed from the fund jumped from 58 percent to over 80 percent in 1982. These additional expenditures have helped draw down the fund balance much sooner than otherwise would have been the case. In fact, had it not been for the passage of a fishing license surcharge in 1983, the Game and Fish Fund would have been in even more difficulty.

In license year 1984, the fishing license surcharge of $2.50 on each fishing license went into effect. Since the fishing license year begins on March 1 of each year, only $780,000 was collected in fiscal year 1984. An additional $2.5 million was collected from the surcharge during the fiscal year 1985.

At the 1985 fiscal year end, the Game and Fish Fund balance was $1.4 million. Approximately $200,000 of the balance was reserved for wildlife acquisition. The fund had received $3.3 million from the fishing surcharge through the end of fiscal 1985, but expended none on fishing enhancement because there was no appropriation for fishing enhancement. The Legislature had appropriated more money from the fund than would have been available without the surcharge revenues.

- Without the money collected from the fishing license surcharge in FY 1984 and FY 1985, there either would have been a negative balance of over $2 million in the Game and Fish Fund at the end of fiscal 1985, or $2 million in cuts in other Game and Fish programs would have been necessary.

The result is that money from revenues that came into the fund from the fishing license surcharge were expended on other legislatively approved functions of the Game and Fish Fund. The department notes that in a sense the money was expended on fish management since the fishing management program would have had some budget cuts unless the surcharge money was available.

3. CURRENT FUND BALANCE

Although it was not the year for fee increases on the normal six-year cycle, DNR sought fee increases during the 1985 legislative session because of a deteriorating fund balance. The major revenue increases were from non-resident fishing licenses. Increases were also granted for a number of smaller license fees. These license fee increases were estimated by the department to provide an additional $1.25 million to the fund in fiscal 1986 and $1.74 million in fiscal 1987. Unfortunately, the department's projections were incorrect because it inaccurately accounted for when the new license fees would begin to accrue to the fund. As a result, instead of taking in $1.25 million in 1986 from the new fees, the department now estimates increased revenues at about $700,000 in fiscal year 1986.

The department also estimated at the end of the 1985 legislative session that the fund balance would be $2.8 million at the end of fiscal year 1985. The fund took in considerably less in federal aid reimbursements than the department projected (for reasons we will examine later), and as

a result the fund balance going into fiscal year 1986 was $1.4 million lower.

The combined effect of these two miscalculations is that instead of a positive fund balance of $1.5 million in 1986, the department now is taking steps to cut allotments and trying to increase revenue flow. The department's initial projections of fund balance at the end of September 1985 showed a negative $.5 million balance at the end of fiscal 1986 and a negative $1.6 million balance at the end of fiscal 1987.

This situation occurred because DNR has lacked a good system of tracking revenues into the fund and of forecasting future fund balances. Until recently, the Financial Managment Bureau of the department has been only minimally involved with the fund management. Previously, its role was to prepare a fund statement once per biennium for the budget. Managers in the Fish and Wildlife Division did not have a good handle on the financial status of the fund, and were not trained to make revenue estimates, yet they had to make projections for use during the legislative proceedings.

The department has taken the following steps to alleviate this situation:

- The Fish and Wildlife Division has instituted a new accounts receivable tracking system.
- The Financial Management Bureau has taken an expanded responsibility for and role in the management of the fund.
- The Financial Management Bureau has instituted a new revenue tracking system that will examine each source of revenue and each federal aid project to determine if revenue projections are on track. They will be reviewing any variance from initial projections and developing pro forma fund statements monthly.
- The Financial Management Bureau will also be examining all revenue projections prepared by the Fish and Wildlife Division for reasonableness.
- In conjunction with the Fish and Wildlife Division managers, the Financial Managment Bureau has prepared a plan to cut back allocations for certain activities of the division. Allocations were cut a total of $700,000.

As the result of these actions DNR now estimates a positive fund balance of about $300,000 in fiscal 1986.

In the next section we briefly review the financial controls over the fund and their adequacy.

D. FINANCIAL MANAGEMENT

The Legislative Auditor was asked to review the Game and Fish Fund in part because of concern over the use of the money in the fund by DNR. Some concern was expressed that DNR might be expending the game and fish funds on activities of DNR unrelated to the fund. We tested expenditures from both the fish management and wildlife management accounts and found that the expenditures were appropriately made. In short, we did not find any evidence that DNR was spending Game and Fish Fund money on unallowed department activities. Expenditures were appropriately reviewed by supervisors in the field before being paid by the Financial Management Bureau.

Weaknesses noted in previous audit reports in the license center operation of the department have been largely corrected by the implementation of a new license accounting system.

The department is also taking a major step toward improving financial controls and management information through the implementation of a new cost accounting system. The cost accounting system, eventually planned for department-wide implementation, is now being tested by the Divisions of Forestry and Fish and Wildlife. The system is expected to be fully implemented in July 1986. Although not a cureall, we expect the new cost accounting system to improve DNR's financial management, and to provide the basis for a meaningful reporting system.

The division currently has a poor time reporting system, and as a result, it cannot accurately account for expenditures on a programmatic basis. The division cannot currently report accurately the amount of time and money expended on the management of particular species or even on particular programs. The cost accounting system will allow the Division of Fish and Wildlife to accumulate the costs associated with specific program activities, e.g., fish stocking or lake surveys.

The cost accounting system will also replace the current procedure of filling out a separate timesheet for those projects reimbursed by federal funds, and should allow for increased control over federally reimbursed projects. The cost accounting system should go along way toward satisfying the U.S. Fish and Wildlife Service's concerns over the proper accumulation of costs for federally reimbursed projects.

In summary, we find that sufficient budgetary and financial control exists over the fund. That is, the fund is subject to the appropriations and budgetary control process, is accounted for by the Statewide Accounting System, has allocations and expenditures monitored by the Department of Finance, and is audited by the Legislative Auditor.

E. FEDERAL AID

The Federal Aid in Fish and Wildlife Restoration programs are administered by the U.S. Fish and Wildlife Service (USFWS). They consist of two

separate programs: the Federal Aid in Wildlife Restoration Act (commonly known as Pittman-Robertson), and the Federal Aid in Sport Fish Restoration Act (formerly known as Dingell-Johnson, now known as Wallop-Breaux). The programs are a federal effort to preserve, protect, and enhance fish and wildlife resources and to increase public enjoyment of these resources.

1. PITTMAN-ROBERTSON

The Pittman-Robertson Act is funded by an 11 percent tax on sporting arms and ammunition, a 10 percent tax on pistols and revolvers, and an 11 percent tax on certain archery equipment. The money derived from the tax on arms and ammunition, and half of the tax on archery equipment and handguns is allocated to the states for wildife restoration. The allocation is based 50 percent on land area and 50 percent on the number of licensed hunters. A maximum of five percent may go to any one state and a minimum of 1/2 percent. Minnesota will receive approximately $3.5 million in federal allocations under the Pittman-Robertson Act in federal fiscal year 1986.

2. WALLOP-BREAUX

The Dingell-Johnson Act was passed in 1950 and was modeled after Pittman-Robertson. It collects a 10 percent excise tax on fishing rods, reels, creels, and artificial lures, baits, and flies for use in sport fish management and restoration.

In 1984, as part of the Deficit Reduction Act of 1984, the Sport Fish Restoration Program, now known as the Wallop-Breaux program, was amended to broaden the items on which an excise tax is collected. Minnesota will receive approximately $4.6 million from the expanded Wallop-Breaux program, up from approximately $1.4 million in federal fiscal year 1985.

3. ADMINISTRATION OF FEDERAL AID

We examined the administration of federal aids because federal money makes up a large portion of the receipts of the Game and Fish Fund (between 10 and 20 percent), and because past audit reports have found problems with federal aid administration.

Under both the Pittman-Robertson and the Wallop-Breaux programs the state is reimbursed up to 75 percent of allowable costs for projects approved by the U.S. Fish and Wildlife Service (USFWS). The fish and wildlife federal aid process begins with the state submitting a proposed project to the USFWS for approval. Following a project's submission, it is reviewed by the USFWS.

Once a project agreement is signed by the USFWS the state can submit requests for reimbursement as the costs for the project are incurred. The U.S. Fish and Wildlife Service has generally received its initial allocation of funds from the excise taxes in October of each year, with a final

allocation following usually in January. Once the state has been allocated money to approved projects, reimbursement requests may begin.

There is no required frequency for requests for reimbursement although the state is encouraged to submit progress payments as the work progresses at intervals not less frequently then every three months. Minnesota has submitted requests for payment less frequently than even once every three months. We found that:

- Requests for payment were submitted on average 3 times per year. Many times the first invoice for reimbursement has not been sent until 6 or 7 months after the project was approved and funds allocated to it.

Since the Game and Fish Fund earns interest on its fund balance, this process has cost the fund tens of thousands of dollars in potential investment income.

- We recommend that Minnesota submit its costs incurred on federally approved and reimburseable projects once per month.

By so doing Minnesota will substantially improve its cash flow from federal projects.

Another way that Minnesota can improve its cash flow to the Game and Fish Fund is to change the project year dates. Minnesota has set project years on a number of different basis. Some projects are on a calendar year basis, others are on a fiscal year basis, and most fisheries projects run from April 1-March 31. The USFWS reports that some other states follow this practice, some use the federal fiscal year, and some use a July - June fiscal year. Minnesota has generally used a calendar year as the project year for Pittman-Robertson (PR) projects.

The result of having a variety of project dates is not only confusing, but can actually cost Minnesota money. Since the federal fiscal year begins in October, most of Minnesota's annual allocation of federal aid becomes available to the state in October. The effect of a later project year means that Minnesota can not begin accruing its allowable costs until later, thus delaying the point at which the state can begin submitting invoices for reimbursement. As a result, we recommend:

- DNR change the project agreement dates for federal aid projects to the earliest possible date after the federal funds become available to the state.

We believe many federal project years can be moved up at least several months. The effect of this change will be to speed up the reimbursement of the federal funds the state is due, and substantially increase interest earnings.

A related problem is the way that Minnesota plans for federal projects. In 1985 and previous years, projects were submitted shortly before the proposed project year began. In a number of cases proposals were not

immediately approved. Since the state cannot accrue matching costs until the project is approved, a delay in approval can conceivably result in Minnesota not accruing enough allowable costs to meet its required state match. At the very least it delays reimbursement. Regardless of when the project year begins, Minnesota needs to plan for and submit project proposals to the USFWS far enough in advance of the project year's start to allow the USFWS time to review, and Minnesota time to respond to any questions about the projects.

Another way to speed up cash flow is for the state to get its federal reimbursement through a letter of credit arrangement that can be drawn down as the state incurs its costs allowable for reimbursement. This would eliminate the approximately one to two month delay inherent in the current process of approving and issuing a check for each invoice submitted. We estimate that this move alone can earn the fund at least an additional $50,000 per year in interest income. Minnesota is the only state in this region that is not eligible to utilize a letter of credit.

DNR's Financial Management Bureau is pursuing a letter of credit arrangement for the state. According to the USFWS, Minnesota does not currently meet federal financial management standards. Specifically, the USFWS feels that:

- DNR does not currently have a good system of tracking costs incurred for some of the federal aid projects.
- DNR needs to improve its procedures for insuring that only allowable costs are submitted for reimbursement.
- DNR needs to be better able to track program income so that it is credited back to the proper program as appropriate.
- DNR needs to improve its system for providing documentation for project completions, particularly for land acquisition projects.

We believe all of these difficulties can be relatively easily overcome. With the implementation of the new cost accounting system for the Division of Fish and Wildlife, the foundation for meeting the USFWS objections to our current financial management practices will be in place. The new cost accounting system will allow much better control over the state match of federal dollars, as well as the ability to track allowable costs by project. The other problems can be addressed if DNR management will carefully delineate what the required standards for submission of federal aid invoices are, disseminate this information to all those concerned with federal aid submissions, and then hold all personnel accountable for meeting those standards. We recommend:

- DNR should actively seek an immediate authority for a letter of credit from the USFWS. DNR should identify all objections to a letter of credit and submit a plan to USFWS that addresses all deficiencies necessary to receive approval for a letter of credit.

We believe by actively seeking a letter of credit, the department can generate a continuing flow of additional interest income to the Game and Fish Fund.

APPENDICES

APPENDIX A

RESPONSE OF

U.S. FISH AND WILDLIFE SERVICE

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Federal Building, Fort Snelling
Twin Cities, Minnesota 55111

IN REPLY REFER TO:
AF/FS-2

JAN 3 1986

Mr. Thomas A. Walstrom
State of Minnesota
Office of the Legislative Auditor
Veterans Service Building
St. Paul, Minnesota 55155

Dear Mr. Walstrom:

This is in reply to your letter of December 2, 1985 relative to the Legislative Auditor's Office study of the Minnesota Department of Natural Resources fish management program. You supplied partial files on sixteen lakes for our review. Not all files contained similar material and some contained only selected letters and/or reports. This makes a comparable comparison difficult. We also understand that these particular lakes were selected from about 4,000 fishing lakes under direct state management, but we don't know the criteria for selection.

We analyzed each of the files submitted, based solely on the material supplied, and attempted to rate the management as poor, fair, or good. On the basis of this review, the management of two lakes we rated as poor, eight as fair, and six as good. Most of those rated fair could be elevated to good with establishment of individual lake management plans.

In reviewing the sixteen files, some general observations were made in regard to historical stocking, lake surveys, planning effort, and local interests. These thoughts may be helpful in conducting your audit:

1. Historically most lakes were stocked with northern pike and walleye fry because these were the sport species of primary interest. For some lakes, historically no systematic method was used to evaluate efficacy of stocking versus natural reproduction.

2. Removal of undesirable species such as suckers and bullheads was routine in many lakes. Routine winter rescue operations were aimed at sport fish, which were transferred to other lakes.

3. In some instances walleye were stocked without assessment or were stocked when assessment or surveys showed stocking had limited impact.

4. In more recent times, 1970 and on, additional emphasis was placed on population assessment and the technical aspects of fishery management.

5. Pressure from local sportsman groups appears to have been the primary reason for continued stocking in some cases. This is not necessarily undesirable in that the constituency is satisfied and something is being done to improve fishing. We know that stocking native species usually will have no adverse effect on the existing population.

6. Current lake management planning by the DNR appears to be much more professional. They are striving to develop lake management plans for each lake, complete with fish population assessment and measurement of impact of stocking. In cases where lake management plans are available, they are well thought out and based on the fishery potential of the waters sampled.

The attached comments on each lake are general observations based on material in each file and represent our impressions of management applications. If you desire further information, please call John Quam, (612) 725-3447.

Sincerely yours,

Harvey K. Nelson

Harvey K. Nelson,
Regional Director

Attachment

MINNESOTA LAKE MANAGEMENT AUDIT

1. Lake Mary - Douglas Co., I.D. No. 21-92
Lake survey of 1974 supports only NOP stocking, WAE abundance is 4X area average. Lake survey of 1982 recommends no stocking of WAE or NOP but is not being followed. Length-Frequency distributions show good year class representation of both species. Biologically, no stocking is necessary. Credibility of management effort is weak because of lack of evaluation reports and justification for continued stocking. Rate as poor management.

2. Big Cormorant Lake - Becker Co., I.D. No. 3-576
Good WAE lake, lake survey of 1981 recommends 1.5 million fry stocking every other year. A 1974 report recommended stocking only in specific years when poor natural reproduction is demonstrated. This is accepted practice but should probably stock fingerling walleye in lieu of fry. Most years no stocking necessary because many year classes are represented. Rate as fair management.

3. Big Pine Lake - Ottertail Co., I.D. No. 56-130
Lake survey of 1983 states that stocking essentially does not affect year class strength, indicating that natural reproduction is normally adequate. However, this lake does have a management plan which is set-up to measure effect of fry, fingerling, and no stocking of walleye on year class strength. At end of study management plan will be re-written to accommodate findings. Rate as good because future management will be on firm scientific basis.

4. East Silent Lake - Ottertail Co., I.D. No. 56-517
Lake survey of 1981 shows overpopulation of yellow perch and lack of adequate predators. All walleye year classes are represented which would indicate adequate reproduction is occurring. Should not stock additional WAE without evaluation. NOP population is low due to lack of spawning habitat, thus stocking is justified. Rate as fair management.

5. Shell Lake - Becker Co., I.D. No. 3-102
Lake survey of 1962 and map verifies lake is too shallow for fishing lake, too deep for waterfowl production, and is subject to winterkills. No basis for stocking other than a lot of local demand. Local fishing pressure is not very high. Lake survey of 1981 shows overpopulation of bullheads and recommends stocking 500,000 WAE fry/year. This is not really a WAE lake. Rate as poor management, on basis this is not really a potential fishing lake.

6. Limestone Lake - Wright Co., I.D. No. 86-163
Lake survey of 1974, did not report any results of WAE stocking. Follow-up survey in 1982 showed overpopulation of NOP and only marginal success with WAE stocking. Lake Management Plan written in 1985 addresses these problems; lake is to be managed for WAE as the primary species, with assessment of stocking. Stocking will be used only to the extent it produces results. Rate as good upon implementation of plan.

12. Greenstone Lake - Lake Co., I.D. No. 38-718
Original lake survey of 1964 classified lake as NOP-LMB and recommended no stocking, with possibility of SMB and trout introductions if demand required it. Apparently introduction of WAE fry beginning in 1967 was successful as they appeared in 1976 samples in several year classes. Lake survey of 1980 showed WAE represented in seven different year classes, indicating natural reproduction is successful. Recommend stocking of WAE fry every other year at 1000/acre, even though they say natural reproduction is occurring and the stocking frequency can be reduced. Additional stocking should have little or no effect on WAE population unless a complete spawning failure would occur in any one year. Rate as fair.

13. Fall Lake - Lake and St. Louis Co., I.D. No. 38-811
Lake survey of 1980 reveals WAE have slow growth rate but is not related to abundance. The report also states annual WAE fry stockings do not appear to affect population, but recommend reduced stocking every other year based primarily on water level fluctuations. Lake survey of 1982 shows six age groups of WAE and no correlation between stocking and year class strength, but still recommends biennial stocking. Lake survey of 1984 indicates WAE year class strength is erratic and unrelated to WAE fry stocking, with reference to management plan. Lake Management Plan of 1984-85 set specific goals for WAE and NOP populations as well as method to measure contributions of WAE fry stocking to year class strengths. Rate as good, based on establishment of management plan.

14. John Lake - Wright Co., I.D. No. 86-288
Initial survey of 1961 showed good NOP population, limited WAE and only moderate amount of suitable WAE habitat. Lake was classified as WAE-LMB and recommended stocking WAE at two year intervals and evaluate by angler success. Lake survey of 1980 showed same results; stable NOP, LMB, BLG, BLC population, very low WAE; stocking appears to have no effect. This lake should obviously be managed for warm water because thermocline was at ten feet, leaving little water suitable for WAE. Recommends stocking every third year to maintain fishable population. If there is any natural reproduction at all, the small niche for this species will probably be filled automatically. A lake management plan should be developed to clearly state objectives. Rate as fair.

15. Mud Lake - St. Louis Co., I.D. No. 69-275
Lake survey of 1976 reported small WAE population, lack of suitable spawning habitat, and recommended stocking fry at 2 or 3 year intervals. Lake survey of 1980 confirmed WAE was still at low numbers, that stocking was ineffective and should be discontinued, and that the lake should be surveyed again in two years. Lake survey of 1983 found same conditions and referred to Lake Management Plan. There is no plan in the file. This lake is obviously another warm-water body with shallow thermocline that will only support a very small WAE population which it is doing naturally without benefit of stocking. A management plan is needed. Rate as fair, pending preparation of plan.

7. Wabedo Lake - Cass Co., I.D. No. 11-171
Lake survey of 1978 does not support stocking, yet recommends stocking of WAE every third year, and Mississippi strain muskie. The fish age-class distributions show six year classes of WAE, six of NOP, and four of muskie. This indicates a healthy population and stocking should not be needed unless there is a reproductive failure. There is no management plan or periodic assessment of stocking efforts. Rating is fair.

8. Shagawa Lake - St. Louis Co., I.D. No. 69-69
Lake survey of 1979 recommends WAE stocking every other year, but states there is good natural reproduction in most years. It has been shown consistently that stocking is unnecessary in view of this. Lake survey of 1981 could not correlate population size with stockings, although above average populations were present. Lake survey of 1983 states all year classes of WAE are present and natural reproduction appears successful. About 2,000,000 fry stocked 1977-83 but no possible way to measure impact on population. A formal plan was to be prepared in 1985, which is needed to evaluate and justify stocking. Rate as fair.

9. Benedict Lake - Hubbard Co., I.D. No. 29-48
Lake Management Report in 1954 recommended stocking of LAT and no other species. Lake survey of 1974 recommends stocking of both NOP and WAE based on small littoral area and marginal spawning habitat. Length frequency distributions tend to support this stocking. The lake is also relatively infertile and has a small carrying capacity. Lake survey of 1981 further confirms previous findings and recommends stocking of WAE and NOP on alternate years. Data supports this recommendation. Rate as good.

10. One Lake - Lake Co., I.D. No. 38-605
Lake survey of 1977 recommended 1,000,000 WAE stocked annually based on below average population. This is questionable based on fact lake is relatively infertile, much suitable spawning habitat is available, and several year classes are represented, although in limited numbers. Lake survey of 1980 showed essentially same WAE population structure even though stocking had occurred. Also indicated forage base is probably too low because of infertile waters. Stocking is still recommended. Lake survey of 1984 showed essentially same population structure, which is probably the natural level for this lake. There were no apparent results from stocking. Lake Management Plan developed in 1985 calls for stocking and evaluation of stocking large WAE fingerlings. This may not add to population structure either, but evaluation will tell. Rating goes from fair to good with new management plan.

11. Kremer Lake - Itasca Co., I.D. No. 31-645
Very deep lake suitable for trout. Early attempts to establish LMB, crappies, and suckers, failed and destroyed by rotenone, RBT established by annual stocking program. Lake survey of 1981 did not catch representative sample but angler harvest records showed satisfactory population. Lake Survey of 1984 showed good survival in many size groups and only white suckers as a companion species. This lake is deep and oxygenated and is especially adapted for trout. Direct returns are accrued from the present management program. Rate as good.

16. Dark Lake - Koochiching Co., I.D. No. 36-14
Lake survey of 1969 shows low but probable stable population of WAE, maybe 3-4 year classes. 1976 report shows low level population with 4-5 year clases. 1979 shows very low populations, with only three fish caught, and recommends stocking to supplement poor natural reproduction. WAE(YY) captured only in 1981 at one station, may be year class failures. Lake survey of 1984 shows fair catch of WAE in several year classes. Report points out that walleye reproduction is limited and fingerling stocking of 81 and 82 has produced results; also recommends discontinuance of fry stocking. Assessment netting will be accomplished two years following fingerling stocking. Rate as good but management plan desirable.

APPENDIX B

RESPONSES OF

ANGLING GROUPS

WALLEYE'S UNLIMITED
7213 Major Av No
Brooklyn Center, Mn 55429

November 8, 1985

Mr. Thomas A. Walstrom
Project Manager
Legislative Audit Commission
Veterans Service Building
St Paul, Mn 55155

Dear Mr. Walstrom;

Thank you for the opportunity to comment on the Minnesota DNR's fish management practices. Walleye's Unlimited is a rather large fishing organization scattered over the state of Minnesota, therefore, we elected to sample a portion of our constituency for some answers to your questions. Those answers have been summarized in Section A, whereas my personal comments are included in Section B, both of which are appended below.

Section A - Organizational Response.

Question 1. How would you rate the success of the DNR in managing Minnesota's fishery?

Answer: The sample groups responses indicate an average of "fair" for the Departments management practices. The lowest 'grade' received was "barely adequate", and the highest was a "fair plus". Additional comments indicate that some groups enjoy a good working relationship with the local fisheries offices on specific projects, however, these same groups indicate a lack of confidence in the middle through uppermost management.

Question 2. (a) Do you see any problems with DNR's current management practices? (b) How would you like to see those practices changed?

Answer 2. (a). The unanimous response to this question was "yes" with several qualifying comments. There is a perceived need for more honesty and openness in dealing with the public on matters of policy or regulatory change. There also seems to be a feeling of negativism in the attitudes of the older,

middle management staff. There is a feeling that too many dollars are spent on middle management and administration with not enough actually filtering down to the resource.

Answer 2. (b). In general, answers received indicate that people appreciate a sincere, open door policy. They also indicate a strong feeling that we ought to get the politics out of the DNR - particularly in the middle to upper management levels. We would also like to see more visibility and accountability as to where our fishing dollars are being spent. We see a need for more trained biologists working within Fishery's, one at every area office would be a bare minimum. A companion suggestion was to have more decisions made based on biological fact rather than political expediency.

Question 3. In what areas is DNR doing a good job and in what areas could DNR improve its practices?

Answer 3. We feel that Fishery's is doing a good job in the following areas:

a. The lake classification program is good although work is progressing too slowly.

b. Fish stocking is rated at fair on an overall basis. More emphasis should be placed on fingerling stocking rather than fry stocking because of better survivability.

c. Water quality improvement is fair but proceeding too slowly.

d. Public access program is good but some accesses need better maintenance.

e. The Department is showing some signs of improved responsiveness to the public.

f. Joe Alexander is perceived as the best commissioner we have had, although he has a tendency to side with businesses rather than the sportsmen whose dollars are funding the program.

Answer 3.(b). We feel that the DNR needs improvement in these areas:

a. Better communication with the Departments rank and file as well as with the general public.

b. Better law enforcement - more of it and eliminate the 'nuisance' citations.

c. Develope more experimental programs to take advantage of

the experimental water program legislated in 1983.

d. More decisions based on sound, biological fact rather than management politics. This, of course, implies more research and experimentation.

e. More money to the resource rather than the bureaucratic middlemen.

Section B - Personal response of the undersigned.

Question 1: I would rate the DNR's overall fishery resource management as fair.

Question 2. (a). Too many decisions are made on a fishery politics basis. Example: the night ban at Mille Lacs has no biological soundness. It appears to have been installed to placate some vocal resorters over the objections of hundreds of fishermen. Another example is the Departments attempts to close or restrict the Red Wing Dam area fishery in early spring to placate a vocal Red Wing area group who enjoy a close friendship with the Department. This in spite of the fact that the Department has a published report based on 15 years of research that indicates a closure or restriction is not needed, nor is it justified. Since the waters involved are joint waters with Wisconsin, the Wisconsin DNR's cooperation is necessary. Wisconsin's position based on biological findings is that the fishery does not need additional restrictive regulation. Either the studies are wrong and managements intuition is right, or the studies are right and management is wrong. In either event - there is an obvious need for correction.

Answer 2. (b). I would like to see all resource judgements of this nature exposed to a full public meeting with a presentation of 'all" pertinent biological data (in the past, Fishery's management has been guilty of selection of data to be presented).

Answer 3.(a) There are Fishery's offices such as the Metro Region and the Lake Vermillion area that enjoy a good, working relationship with local volunteer groups. There are others whose spirit of cooperation is somewhat lacking.

Answer 3. (b) (i). The DNR needs a great deal of improvement in communicating and coordinating among its own offices. As example: the Metro Region has a quota of 150,000 walleye fingerlings (priority one) for metro area stocking. Operation Walleye, in the Alexandria area (Glenwood office) will have to allow an estimated 200,000 fingerlings to overwinter, and possibly freeze out because the Department could not or would

not authorize the harvest of these fish. In addition, the fish that were stocked were stocked not only in priority one lakes but in priority two and three lakes as well, in spite of the fact that priority one lakes in the Metro area went wanting. This was of course a waste, and the loser was the resource.

Answer 3. (b) (2). The Fishery's Section needs a great deal of improvement in their advance planning. Example: under the new federal "Fisheries Restoration Program" (formerly D-J) $3 million was allocated for Minnesota as of October 1st and an additional $1.2 million will be allocated about December 1st of this year. It is not clear how The Department intends to avail themselves of this new money. A direct query to the Fisheries Chief indicated that they will just submit projects as they come along. Discussions with the USF&W Service indicates that they understand that Minnesota intends to utilize this money for hatchery contruction and renovation projects. Note: hatchery contruction/improvement monies were included as line items in the capital improvement budget this past legislative year. USF&W also indicated that this hatchery work may cover us for a couple of years but our forward planning for fund untilization is practically non-existent.

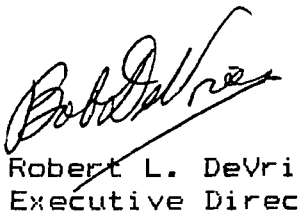
Answer 3.(b) (3). Since the Legislature keeps a tight lid on permanent personnel for the DNR, the Department should avail themselves more of the fish research capabilities within the University of Minnesota. I'm sure that much more work could be done by the U of M on a contract basis.

Answer 3.(b) (4). Cooperative ventures in walleye fingerling production by private, non-profit organizations seems to be outdistancing the Departments own success in fish rearing. Yet, the technology seems to be known and understood by the Department. Why then has Deparrtment walleye fingerling raising failed so miserably in the Glenwood, International Falls and Hinckley areas this past season?

Again, let me thank you for this opportunity to comment on fishery's management practices. I would like to also add that I attended both the Senate and the House Natural Resource Committee hearings this summer where the Fishery's Chief reported on the status of the fishing license sur-charge expenditures. I was disappointed in the fact that both committees sat through these presentations with practically no questions being asked, when I personally considered both presentations vulnerable to criticism and further investigation.

If I may be of further assistance or if you need clarification on any of the above, please feel free to call.

Respectfully;



Robert L. DeVries
Executive Director

phone: 561-8756 or 561-7809

October 30, 1985

State Of Minnesota
Office Of the Legislative Auditor
Veterans Service Building
St. Paul, MN 55155

Attn: Mr. Tom Walstrom
Project Manager

Dear Mr. Walstrom:

We are in receipt of your letter from the Legislative Audit Commission asking our (Muskies Inc.) views regarding the success of DNR's Fish Management Practices. We addressed the questions that you raised to us at the Twin Cities Chapter of Muskies Inc. board meeting and we then obtained six volunteers from our board to sit down and review the various issues we discussed at that meeting and to try to answer your questions in an appropriate manner. We feel that the six individuals represented in constructing this answer create a cross-section of the various opinions of the members of Muskies, Inc here in the Twin Cities area.

The first question that you asked, "How would you rate the success of the DNR in managing Minnesota's Fisheries?" Overall, we feel that Minnesota has had great success in managing Minnesota's fisheries, however, we feel that compared to North Dakota, Wisconsin and Iowa, our Minnesota DNR does not seem to be as aggressive nor is it making the advances that these other states are doing. We would rate Minnesota's DNR on a scale of 0-10 at about a 6-6½ with the other states at about a 7½ on this scale.

Number 2: "Do you see any problems with DNR's current management practices and how would we like to see these practices changes?" First response is that we are concerned about the DNR managing lakes the same from one area of the state to the other. It appears as though Canadian boarder lakes are managed very similarily to those lakes that boarder Iowa and we would like to see more creativity on the part of the DNR in being more specific with management according to certain lakes. Another response was that we feel the DNR is willing to try exotic species in some lakes while at the same time not putting enough effort to maintain and improve native species. Number 3, too often the personnel in the department do not try inovations because they do not wish to cause "waves" ~~is~~ and are ~~mearly~~ instead content with the status quo even if it doesn't do the job. Number 4, Fisheries has started several good programs but seems to drop them before they can be proven successful or a failure. (This may be due to a lack of funding on the part of the legislature.) Number 5, It is impossible for regional fisheries manager to properly and effectively manage as many as 800 plus lakes. We need more qualifies fisheries personnel in the field to accomplish the goals needed. Number 6, the DNR desperately needs a long term plan regarding fisheries and wildlife. Number 7, we feel that there is a significant lack of accountability within the DNR department

(continued)

and what we would like to see with regards to change in the practice of accountability is we would like to propose that a lay-board be established consisting of known representatives of sport fishing and of hunting who can monitor the DNR's activites and advise the DNR with regards to future activies. This is a sensitive issue as we know the DNR is very protective and is sensitive to outside interference. A critical issue regarding the formation of any type of lay-board, who would be in charge of appointing these individuals. Keeping politics out of this would have to be very important.

The third question: "In what areas is the DNR doing a good job and in what areas could the DNR improve its practices?" Our DNR does many real good things that are not brought to the sportsmans attention. The ~~[illegible]~~ I & E department appears to fail in this regard. A real effort has to be made in this direction of informing the public. Number 2, the Walleye program appears to be a great success, but we're concerned that every lake across the state is being managed for Walleye's and not enough emphasis is being placed on other species, such as our native Large Mouth Bass and Small Mouth Bass and of course, we're concerned about a more intense management of our Muskies. Number 4, the DNR's about-face on their Muskie program dramatically advanced their effort in improve that species in Minnesota and should be complimented. Also, the programs in Lake Superior appear to be very successful. Number 7, we agree whole-heartedly with the experimental regulations now in effect on several lakes and would like to see more of this tried across the state. We are in especial agreement regarding the size limits imposed on Mille Lacs and Saganaga~~[illegible]~~ (?) Lake. Number 7, the public access program is doing a good job but needs more funding from the legislature. One other area of concern is that the various disciplines within the DNR seem to go their own way and do not cooperate effectively with the other divisions of the DNR. Also, a question was raised regarding the funds received from fishing licences. We would like to know if these funds go only to fishing programs or are they used to also fund wildlife programs?, and if so, for what amount is that and for how long? We would also like to recommend that no state or private project that effects the environment wildlife or fisheries be started until it's impact on fishing or hunting is reviewed by the DNR. Lastly, we'd like to comment on the proposal for a lay-board. We know that this was an issue that was raised some time ago and was defeated due to what appeared to be the political nature regarding the appointments to this board. We feel strongly that a board like this would be very helpful and that the appointments to this board should be somehow kept out of the hands of the politicians but should be made from within the sportsmen and fisheries groups. An example of why we feel that this board is needed was that this last spring the state legislature passed a piece of legislation allowing the DNR to ban spearing on lakes that contain fishable populations of Muskies. As of this date, October 30, 1985 even though there has been considerable personal effort on the part of many individuals to try and stimulate the DNR to enact this law on the various lakes which they had asked our opinions on, on which lakes should be banned to spearing, there has not been one lake on which spearing has been banned and the lakes are soon to freeze and spearing season will begin very shortly. We feel that the DNR has dragged their feet on this issue and

(continued)

we're not sure where we can go to find some accountability on their part in this regard. This is one of issues that we feel that a lay-board responsible for accountability within the DNR would be very helpful. Somebody to monitor what their doing, give advise regarding the feelings of the hunters and fishermen that the DNR's policy so effect and to try to direct the DNR in a way that would be most beneficial to the hunting and fisheries resources within our state.

If you have any further questions of Muskies, Inc. please feel free to contact us again, as we would be willing to help out in any way that we can to improve fisheries in the state of Minnesota.

Respectfully submitted,

Dr. Alex Worobel
for:

Dr. Alexander Worobel,
Frank Schneider, Jr.
Lynn Trombley
Smokey Swenson
Guy Donohue
Dave Griffin

October 18, 1985

Mr. Thomas A. Walstrom, Project Manager
Legislative Audit Commission
Veterans Service Building
St. Paul, MN. 55155

Dear Mr. Walstrom:

We would like to thank you for the opportunity to present our views on DNR fish management programs.

Q.1. How would you rate the success of DNR in managing Minnesota's fishery?

A.1. It is our feeling that the DNR is managing Minnesota's fishery in a barely adequate manner.

Q.2. Do you see any problems with DNR's current management practices? How would you like to see those practices changed?

A.2. We feel that DNR is top heavy with bureaucrats and affirmative action people with too little money actually going to managing the resource.

We would like to see investigation of the Missouri Commission form of organization as an alternative to Minnesota's method. Minnesota's fishermen deserve a more responsive, efficient DNR.

Q.3. In what areas is DNR doing a good job and in what areas could DNR improve its practices?

A.3. Joe Alexander is the best Commissioner DNR has had in the last 20 years.

We mainly have experience with Metro Region Fisheries, which we understand is an exceptional region. Their successes include expanded public access opportunities, kid fishing programs, and species experimentation.

Continued from page 1:

A.3. Metro's biggest asset is its Fisheries Manager, Duane Shodeen, who goes out among the fishermen to find out what is going on in the "real world".

Statewide successes include stricter enforcement, public access programs, and the beginning of the experimental lakes program.

Improvements could be made in the following areas:

(a.) Getting more money to the resource.

(b.) Better public relations - many times the department has done a good job, but doesn't get its message to the sportsman.

(c.) Cull the unproductive "dead wood". Between Commissioner Joe Alexander and the fisheries' managers there seems to be an awful amount of "dead wood" that appears to be more intent on "covering their derrieres" than doing what is best for improving fishing. The problem is how to streamline DNR without gutting it.

We sincerely believe that Minnesota's fishermen deserve a more responsive and efficient fisheries management. We appreciate the opportunity to provide input.

Sincerely,

Richard Dyer

Richard Dyer, Coordinator
MN Sportsmen for Public Lakes
6070 Brand Circle
Shorewood, MN. 55331

TROUT UNLIMITED

October 22, 1985

Thomas A. Walstrom
Project Manager
Office of the Legislative Auditor

RE: Legislative Audit
Minnesota Dept. of Natural Resources
Fisheries Division

Dear Mr. Walstrom;

The following is a summary of the views of the Root River Chapter Board of Directors on the questions asked by your office, in regard to the legislative Audit you are conducting on the D.N.R. Fisheries Division.

As you know, the Trout Unlimited is a Organization dedicated to the preservation and enhancement of our cold water fisheries. Our response on these questions relates only to the cold water fisheries, primarily in Southeastern Minnesota.

1. How would you rate the success on D.N.R. in managing Minnesota Fisheries?

- Our Chapter deals primarily with the Lanesboro management area, and the management in the Lanesboro area is very good.

2. Do you see any problems with D.N.R. current management practices? How would you like to see those practices changed?

- We would like to see management of each area be controlled by the area itself. We feel that area personnel know what there specific problems are, and are qualified in handling them. Problems are specific in individual areas, stocking, beaver control, Etc.

3. In what area is D.N.R.doing a good job an in what areas could D.N.R. improve its practices.

- Good Job in
  Improvement of Trout Stream Habitat
  The Stocking Program

- Needs Improvement In

  Working more with University of Minnesota on

Research of Cold Water Fisheries when possible.

- Make a better effort to keep up good relations with private landowners, and public education.

- Change the stream trout possession limit to only one fish over 16inches, instead of the current three over 16 inches. In Southeastern Minnesota streams, this would leave more large trout for reproduction.

- Institute a late season stocking program, increasing the number of catchable fish for the following season opener.
- Increase Stream Improvement Budgets, also the labor force for Stream Improvements, and up grade equipment; by doing this personnel moral would be lifted.

- Put more money into Law Enforcement to have better control over specially regulated streams.

Thank you for the opportunity to voice our opinions on these questions, we hope this will be helpful.

Sincerely,

Pres.

Board of Directors
Root River Chapter
Trout Unlimited

cc
Minnesota State Council
Trout Unlimited
Melford Daugstad

Date: December 23, 1985

To: Thomas A. Walstrom
Project Manager
Legislative Audit Commission
St. Paul, MN 55155

From: Dave F. Scantlin
Minnesota BASS Federation

Subject: Evaluation Of Minnesota Fish Management

Please accept this letter as the Minnesota BASS Federation's response to your questions on the Minnesota DNR fish maqnagement program.

Our answers to the specific questions are as follows;

1) We rate the success of the DNR's fish management above average. The diversity of fisheries creates a difficult job to preserve and enhance the multi-species we have in Minnesota.

2) The over-all problems could be eased with less direct political involvement in the day-to-day activities of the DNR. We realize government controls go with government funding. However, we have highly educated and trained specialists in our DNR. A possible suggestion to this would be an elected 'District Board' to coordinate legislative funds and the DNR. The state of Arkansas has a procedure similar to this.

3) The most obvious positive results of the DNR efforts are the Lake-of-the-Woods buy-out of the commercial netters, the on-going upgrading of public accesses and the tagging/studies to determine trophy lakes.

Our suggestion for large improvement of the DNR would be in enforcement. The road blocks have shown positive results. All programs, plans and projects are least effective without some sort of enforcement and education of the public to see them through.

We thank you for being invited to participate in this evaluation.

Sincerely,

Dave F. Scantlin

Dave F. Scantlin
Minnesota BASS Federation
9481 Trenton Ln.
Maple Grove, MN 55369
424-4548

The Izaak Walton League of America

DEFENDERS OF SOIL, AIR, WOODS, WATERS, AND WILDLIFE

September 30, 1985

Mr. Thomas A. Walstrom, Project Manager
Office of The Legislative Auditor
Veterans Service Building
St.Paul, MN. 55155

Dear Mr. Walstrom:

Re: Legislative Audit Commission - Evaluation of the DNR (Fish Management Program)

On the 17th of September you mailed Erika Sitz, our Immediate Past State President, a request for imput, which was forwarded to our current State President, Dr. Paul Toren. Paul forwarded your letter to me and asked me to respond on behalf of the Minnesota Division, and the following comments will attempt to do just that.

Your first question is: "how would you rate the success of DNR in managing Minnesota's fishery". Minnesota's Department of Natural Resources has excellent programs, some of them of national reputation in fisheries management. Especially noteworthy are their programs for Walleye fisheries, which set national standards, and rescue operations for lakes that winterkill for such species as Northern Pike, pan fish, et cetera. I would rate Minnesota's success as at least reasonably good, considering the declining resource, and the burgeoning human pressure upon it, and I'd also point out that the job that Minnesota's DNR has been and is doing is one under severe budget restraint. The legislature has hampered potential improvement in programs by consistently underfunding, cutting back, and results have been programs which have been less effective than they otherwise would have been, and it has deleteriously affected morale in the agency from top to bottom.

The second question is: "do you see any problems with DNR's current management practices, how would you like to see those practices changed"? The Izaak Walton League consistently preaches letting the professionals manage the natural resources, and keeping the lay public out of the day to day management of those resources. It is difficult to answer question number 2 without getting into the day to day operation of the Agency, and very few of us are qualified to do that. All of us have specific issues, people such as myself who harbors significant interest and activities such as Trout and Steelhead fishing, all have our axes to grind with our particular programs and would like to see the DNR improve them. But I think those particular areas are best covered under question number 3, and with my closing general comments, and so I will proceed to number 3.

"In what areas is DNR doing a good job and in what areas could DNR improve its practices". I previously mentioned that we have a national reputation for the excellence of our Walley fishery. One of the things that's very encouraging is the passage of legislation in 1984 that is known as experimental lakes and rivers legislation that lets the Agency set up special regulations, and management programs for individual lakes and streams. This will go a long way toward enabling Minnesota's fishery management to recognize the vast

differences between watersheds, lakes and rivers, and various parts of the state.

Minnesota could do an even better job of being out front in terms of innovations, rather than managing on standards that may not be fully applicable today. By that, I mean that we're finding that with a more sophisticated group of fishermen, and the inability in most cases of the resource to be any more productive, that demands are being put on lakes and rivers that just a decade or two were not foreseen. Imposing special regulations to improve the quality of the fishing experience, encouraging catch and release where it's appropriate biologically, managing for trophy purposes, educating the public on the role that the public plays in sustaining a quality fishery, are all things that the DNR should significantly expand its emphasis in.

The DNR in general, as well as the fisheries group, does spend considerable time working with the public, but I do believe there is a need for a liason with sportsmen and women that does not exist, some sort of a mechanism, a council of some type for closer relationship with fishing people. This has been discussed before, it has its own potential problems, but I do believe that regularly meeting and sharing views and exchanging ideas with lay "experts" in the various regions of the state, and representing various fishing interests, would be mutually beneficial to the DNR and the citizens of Minnesota.

The Agency should also do more work with sportsmen's organizations- such as the Izaak Walton League, Trout Unlimited, Muskies and other groups to work on habitat projects, hands on projects that lay people are able to do effectively under proper supervision, to accomplish some things that current budget and personnel staffing may not allow. For too many years, the DNR has resisted doing these kinds of things for a number of reasons, among them, liability if someone should become hurt, the necessity to have professionals involved at all stages, and the reluctance to get involved with citizen groups. With strict budget problems, and with the success that organizations such as Trout Unlimited are showing with habitat improvement programs, I believe that the time has come to greatly expand the efforts in working with sportsmens groups. In my region of the state work between the DNR and the Lake Superior Steelhead Association, and the Izaak Walton League, are further support for my contentions and I believe the DNR would agree with this at this time, but I do believe we need more of it.

The greatest thing that could come of this review in my judgment is to have the legislature face the basic fact that it is under funded, our primary programs in fish and wildlife management for years. There's an opportunity afoot in the legislation introduced in the 1985 legislature known basically as the RIM (Reinvest in Minnesota) that has great potential to benefit our natural resources and our citizens.

Finally, I would like to refer you to the Report of the Governor's Citizen Commission to promote Hunting and Fishing in Minnesota. Pages 8 through 15 reflect the Fishing Sub-committee Report, accepted by the total committee, reported on to Governor Perpich and approved by him in December of 1984. The Citizen's Commission represented a broad cross section of men and women and outdoor interests in the State of Minnesota, and I believe reading those pages would be of use to the review requested of you by the Legislative Audit Commission.

Please feel free to contact me if you have any questions. I'd be glad to be of any further assistance.

Sincerely,

David F. Zentner, CLU
For Minnesota Division IWLA
824 Norwest Center
Duluth, MN. 55802

TO: Mr. Thos. Walstrom
Office of the Legislative Auditor

DATE: 11-1-85

FROM: John Goplin, President
Twin Cities Chapter, Trout Unlimited

SUBJECT: Fisheries Audit

Thank you for the opportunity to give you our views on the DNRs Fisheries management program.

Since we are an organization concerned with Trout and Salmon we will focus our response on the cold water fisheries area only.

Question #1 - "How would you rate the success of DNR in managing Minnesotas fishery?"

Very good. Our contacts with fisheries personnel have been positive. We are impressed with the dedication and professionalism of the majority of the Fisheries staff. Trout fishing in Minnesota today is substantially better than it was 4 or 5 years ago.

Question #2 - "Do you see any problems with DNRs current management practices? How would you like to see those practices changed?"

There appears to be an attitude problem in Minnesota, frequently expressed by the Governor and the Legislature, that the State's natural resources exist to be exploited for the benefit of the tourist recreation industries and indirectly, the state tax coffers. This attitude, unfortunately, has a negative impact on the management practices of state agencies such as DNR. We suspect that DNR professional staff would be greatly relieved if the State were to adopt and communicate a policy of preservation and protection of our natural resources for their own intrinsic value and their preservation for future generations.

Question #3 - "In what areas is DNR doing a good job and in what areas could DNR improve its practices?"

Good job areas - cold water resources

a) Developement of special regulation fishing areas, particularly on the South Eastern trout streams.
b) Trout stream habitat improvements.
c) Restoration of sport fishery in Lake Superior and in North Shore streams, particularly the St. Louis River estuary.
d) The ban on night angling on North Shore streams.

Areas needing improvement:

a) Strengthen the Fisheries research capabilities. Current staff are stretched too thin. Improved management must be based upon sound research. For example - experience has shown that in Trout and Salmon management there are very few constants. Each stream or lake has different characteristics. A management plan must be custom made for that stream or lake. This requires careful research. While DNR fisheries has implemented several special Trout regulations in the last few years their current staffing does not allow them to really tap the vast potential that exists with Minnesotas Trout streams and lakes.

   We believe that at least 10 more staff are needed in the cold water fisheries section alone. Addtional research staff are no doubt just as badly needed in the warm water fishery section also.

b) Expanded public education emphasizing catch and release. With increasing numbers of Anglers one way to reduce the Angler harvest is by education programs that emphasize the non-consumptive aspects of fishing. This will require a large public education effort, targeted we believe, in the schools and on the young.

c) We applaud the Fisheries efforts in the Atlantic Salmon area. We believe this has good potential as a quality sport fishery, particularly on the North shore. We would hope that this program could be expanded.

d) We also applaud the Fisheries efforts to improve the habitat in our Minnesota Trout streams. Considerable work has been done. Considerable additional work needs to be done. We would hope that this proven program would be greatly expanded and that maintenance of previously done habitat work could also be made a part of this program.

We believe the DNR is doing as much as can be expected in these areas in view of their currently available resources. It is clear to us that additional resources are necessary.

The problem is how these extra resources are to be acquired? We submit the following suggestions for your consideration.

1) Maximize use of federal allocations and non-state grants.
   a) make sure Minnesota receives all federal funds we qualify for under Dingle-Johnson.
   b) agressively pursue other federal grants.
   c) agressively pursue other private grant funds.

2) Consider earmarking a portion of the cigarette tax for Fisheries Mgt. We understand 1¢ tax on cigarettes brings in approximately $4 million annually.

3) Increased LCMR support for fisheries mgt. by the LCMR. Since LCMR funds are supposed to be used for experimental, research and pilot projects it would appear they could be provided for the expanded fisheries research we believe is necessary. Historically the LCMR has provided very little support for Fisheries related projects. We believe its time to change the focus of the LCMR grants so that both Game and Fish receive greater consideration than they have in the past.

4) Currently the Game and Fish fund fiances approximately $6.2 million of the DNRs law enforcement costs. We suggest consideration be given to shifting of that amount to the general fund thereby freeing up funds to accomplish the expanded activities of the Fisheries Division.

5) Reinvest in Minnesota financing. If the 1986, or subsequent, legislatures should adopt a meaningful RIM program with decent funding then the program expansions we support should be given a high priority for RIM financing.

Once again thank you for this opportunity to express our opinion. We hope that this will be of some help to you in your project.

cc: Trout Unlimited, National Office
Trout Unlimited, State Council

John R. Goplin

TO: Mr. Thos. Walstrom DATE: 11-1-85
Office of the Legislative Auditor

FROM: Tom Anderson, President
Lew Jewett Chapter
Federation of Flyfishers
7500 University Avenue
Mpls., Mn. 55432

SUBJECT: Your Memo of 9/17/85-Fisheries Div. Audit

Thank you for the opportunity to participate in your program audit of the DNRs Fisheries Management Program.

In response to your questions we would like to respond as follows:

Question #1 - "How would you rate the success of DNR in managing Minnesotas fishery?"

Very good considering the scarce resource which they have to resolve state wide problems. Our contacts with both central office personnel and area fisheries personnel have been positive. We are impressed with the concern and sincerity of the majority of the Fisheries staff.

Question #2 - "Do you see any problems with DNRs current management practices? How would you like to see those practices changed?"

We have a problem in regard to a philosophy, which is not limited to DNR, but seems to prevail throughout state government; and that is the idea "that our natural resources are to marketed and sold for the benefit of the tourist industry." This was particularly apparent during the debate over the 1985 Reinvest In Minnesota (RIM) legislation.

We believe that there needs to be a better balance between the conservation of our limited natural resources and the economic desires of special interests. We would like to see a clear statement from the Executive and the Legislative branches endorsing a policy which stress a better balance between the economic needs of special interests and the need to conserve, enhance and protect our limited natural resources from harmful exploitation.

Question #5 - "In what areas is DNR doing a good job and in what areas could DNR improve its improve its practices?"

Good job areas.

a) Developement of special regulation fishing areas, particularly on the South Eastern trout streams.
b) Lake and stream habitat improvements.
c) Buy out of commercial fishermen. Lake of the Woods.
d) The ban on night angling on North Shore streams.
e) Mille Lacs special Walleye regulations.
f) Expansion of items designated in the 1983 fishing improvement bill (Chapter 356) to be financed by license surcharges. These are yet to be fully realized but we believe that a solid foundation has been established and, once the commercial fisherman buyout is completed, the DNR will move ahead rapidly.

Areas needing improvement:

a) Strengthen the Fisheries research capabilities. Current staff are minimal and stretched too thin. Improved management must be based upon sound research. We recommend a minimal of 10 additional professional research staff.

Estimated Annual Cost = $400,000

b) Expanded public informatiion programs emphasizing catch and release, fish for fun approach for selected species. With increasing numbers of Anglers we must try to reduce the Angler harvest by education programs that emphasize the non-consumptive aspects of fishing. This will require a massive public information efforts focused we believe on the young.

Estimated Annual Cost = $600,000

We wish to make it clear that we believe the DNR is doing as much as can be expected in these areas in view of their currently available resources.

The problem of course is how will this extra one million in resources be made available? We submit the following suggestions for your consideration.

1) Maximize use of federal and non-state funds.
   a) make sure Minnesota receives all federal funds we qualify for under Dingle-Johnson.
   b) aggressively pursue other federal grants.
   c) aggressively pursue other private grant funds.

2) Consider earmarking 1/4¢ to 1/2¢ of the cigarette tax for Fisheries Mgt. We understand a 1¢ tax on cigarettes brings in approximately $4 million annually.

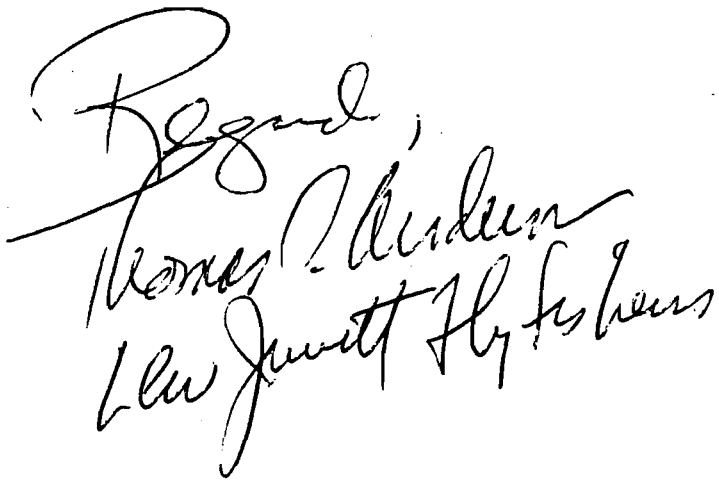
3) Increased support for fisheries mgt. by the LCMR. Since LCMR funds are intended for experimental and research projects why can't LCMR funds be provided for expanded fisheries research? The LCMR has provided very little for Fisheries related projects. We believe its time to refocus LCMR grants so that both Game and Fish receive greater support than they have in the past.

4) The Game and Fish fund now finances approximately $6.2 million of the DNRs law enforcement costs. We suggest consideration be given to shifting one million of that amount to the general fund thereby free up funds to accomplish the expanded research and public information activities of the Fisheries Division.

5) RIM financing. If the 1986, or subsequent, legislatures should adopt a meaninful RIM program with adequate funding then the program expansions we support could be financed via RIM.

Thank you for this opportunity to express our opinion. If you have any questions do not hesitate to contact me at 572-3782.

cc: FFF ~~Natural~~ NATIONAL Office, West Yellowstone Mt.
Directors and Officers.



TROUT UNLIMITED

October 29,1985

To; Mr. Thomas Walstrom
Office of the Legislative Auditor

From; Joel Sherburne
Win-Cress chapter Trout Unlimited

It has been brought to our attention that you are doing an evaluation of the D. N. R. fish management program. This matter is of interest to us and we would appreciate any information you can give us on this matter.

We feel the D. N. R. is doing a terrific job on the cold water fisheries in southern Minnesota. Being this is the area we are involved in, it is the area we can inform you on.

For the past five years our chapter has been doing work on little trout creeks without the advice and help from the D. N. R. This project would have been a flop; instead it is one of the greatest success stories in national trout unlimited stream enhancement programs.

Our membership is also well aware of the special regulation section the D. N. R. is trying, and support it fully. It is impressive how they check on it and keep detailed records on it; we can see the impact it has. We are also aware of the many streams they have improved in past years and thank them for their recent work on Garvin Creek and Hemmingway Creek and because of the tremendous amount of trout streams in southern Minnesota and the potential they have, we come to the big problem with the D. N. R. They are terribly under-staffed/.

Looking back at the amount of work they have done, and continue to do, it is annoying. As hard-working as they all are it is very noticeable they are understaffed. The trout streams in southern Minnesota are a tremendous resource and cannot be wasted with the increase of staff. Neither the warm water or cold water fisheries would be neglected.

Minnesota prides itself on it's fishing tourist trade and the revenue it creates. If both the warm and cold water fisheries are improved state-wide how can we all not prosper? In order to increase our attraction we need to improve our lakes and streams.

Yours truly, Joel B. Sherburne

Joel B. Sherburne
1355 Conrad Ave.
Winona, Minnesota 55987
Phone 507-454-6375

STUDIES OF THE PROGRAM EVALUATION DIVISION

Final reports and staff papers from the following studies can be obtained from the Program Evaluation Division, 122 Veterans Service Building, Saint Paul, Minnesota 55155, 612/296-4708.

1977

1. Regulation and Control of Human Service Facilities
2. Minnesota Housing Finance Agency
3. Federal Aids Coordination

1978

4. Unemployment Compensation
5. State Board of Investment: Investment Performance
6. Department of Revenue: Assessment/Sales Ratio Studies
7. Department of Personnel

1979

8. State-sponsored Chemical Dependency Programs
9. Minnesota's Agricultural Commodities Promotion Councils
10. Liquor Control
11. Department of Public Service
12. Department of Economic Security, Preliminary Report
13. Nursing Home Rates
14. Department of Personnel: Follow-up Study

1980

15. Board of Electricity
16. Twin Cities Metropolitan Transit Commission
17. Information Services Bureau
18. Department of Economic Security
19. Statewide Bicycle Registration Program
20. State Arts Board: Individual Artists Grants Program

1981

21. Department of Human Rights
22. Hospital Regulation
23. Department of Public Welfare's Regulation of Residential Facilities for the Mentally Ill
24. State Designer Selection Board
25. Corporate Income Tax Processing
26. Computer Support for Tax Processing
27. State-sponsored Chemical Dependency Programs: Follow-up Study
28. Construction Cost Overrun at the Minnesota Correctional Facility - Oak Park Heights
29. Individual Income Tax Processing and Auditing
30. State Office Space Management and Leasing

1982

31. Procurement Set-Asides
32. State Timber Sales
33. *Department of Education Information System
34. State Purchasing
35. Fire Safety in Residential Facilities for Disabled Persons
36. State Mineral Leasing

1983

37. Direct Property Tax Relief Programs
38. *Post-Secondary Vocational Education at Minnesota's Area Vocational-Technical Institutes
39. *Community Residential Programs for Mentally Retarded Persons
40. State Land Acquisition and Disposal
41. The State Land Exchange Program
42. Department of Human Rights: Follow-up Study

1984

43. *Minnesota Braille and Sight-Saving School and Minnesota School for the Deaf
44. The Administration of Minnesota's Medical Assistance Program
45. *Special Education
46. *Sheltered Employment Programs
47. State Human Service Block Grants

1985

48. Energy Assistance and Weatherization
49. Highway Maintenance
50. Metropolitan Council
51. Economic Development
52. Post Secondary Vocational Education: Follow-Up Study
53. County State Aid Highway System
54. Procurement Set-Asides: Follow-Up Study

1986

55. Insurance Regulation
56. Tax Increment Financing
57. Fish Management

Programs for Mentally Retarded People: The Impact of *Welsch* (in progress)

Programs for Mentally Ill People: The Linkage Between State Hospitals and the Community (in progress)

Public Employee Pensions (in progress)

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*These reports are also available through the U.S. Department of Education ERIC Clearinghouse.