

**STATE FUNDING
OF NATURAL RESOURCE
PROGRAMS AND AGENCIES:
EVALUATION OF FISCAL ENVIRONMENTS
AND INNOVATIVE FUNDING RESPONSES**

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July 1997

STAFF PAPER SERIES NUMBER 123

Department of Forest Resources

**College of Natural Resources
and the Agricultural Experiment Station
University of Minnesota
St. Paul, MN 55108**

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**State Funding
of Natural Resource Programs and Agencies:
Evaluation of Fiscal Environments
and Innovative Funding Responses**

by

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July 1997

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EXECUTIVE SUMMARY

Maintaining adequate funding natural resource programs is an important concern of state governments. This study focused on determining the type and extent of changes in state budgets and funding sources, the political and economic factors affecting state agency funding, and the circumstances leading to establishment of innovative funding mechanisms. Focus was on the fiscal condition of resource management agencies in 6 states (Florida, Michigan, Minnesota, New York, Pennsylvania and Washington) during the period 1975 through 1990.

Regardless of a state's economic condition, agencies with natural resource and environmental management responsibilities generally did better than other state agencies. However, natural resource programs of agencies with only natural resource responsibilities (non-combined agencies) fared better in terms of total budget levels, but less favorably in terms of general fund budget levels, than natural resource programs of agencies that were responsible for some combination of natural resource, environmental protection and agricultural programs (combined agencies). When natural resource programs are combined with environmental programs into a single agency, they generally have lower but more predictable and stable budgets.

Historically there has been a strong link between natural resource programs and dedicated funds that are used to support such programs. In the states studied, the dedicated fund portion of natural resource program budgets increased from 48 percent in 1975 to 65 percent in 1990. This contrasts with nationwide declines of 28 percent in dedicated funds for all state programs. The relationship between program and fund source has become increasingly blurred. Revenue sources (lottery, sales or excise taxes, voluntary check-off schemes) that do not directly involve natural resource activities represent larger pools of potential funding, while narrowly linked dedicated funding arrangements (fishing license fees, mining royalties, park entrance fees) generate relatively less revenue. Administrators consider dedicated fund sources as means for stabilizing program funding and for relieving stresses associated with making annual budget requests. In contrast, the tendency of dedicated funding sources to reduce flexibility in the allocation of funds is often viewed as a problem by legislators.

Important considerations when seeking dedicated funding arrangements are to: avoid narrowly focused revenue sources, match revenue sources to long-term program funding needs, avoid substitution of dedicated funds for funds from other sources, link

program benefits to those providing funds, and avoid advocating dedicated funding sources during times of statewide fiscal stress. In terms of actually seeking authority for a dedicated funding source, it is important to: resist compromise of a funding proposal's core elements, take risks needed to preserve the integrity of these core elements, engage trusted advocates (champions) to guide the funding proposal through difficult political situations, and early-on involve people and organizations that are supportive of the proposed funding source.

INTRODUCTION

State Budgetary Challenges

Budget difficulties have afflicted state governments since the mid-1970s. Most serious during this period were the fiscal shortfalls that occurred during national recessions in 1982-83 and 1990-91 (Economic Trends 1991). Decreased federal aid to state and local governments and the transfer of program responsibilities from the federal level to the state level magnified these budget difficulties as did widespread citizen resistance to increased taxes. As a percentage of state-local outlays, federal aid fell steadily from 26 percent in 1978 to an estimated 17 percent by 1988 (Swartz and Peck 1990). As a result of these difficulties, 35 of 50 states made mid-year reductions in their 1992 budgets (Star Tribune 1992), and despite the political dangers of increasing taxes, 23 states did so in 1990 (New York Times 1990). During the 1981-82 recession, 28 states increased income taxes and 30 states increased sales taxes (Rivlin 1992). In spite of all these actions, 14 states had deficits of over 5 percent of state spending in 1991, 7 had deficits of 3 to 5 percent and 9 had deficits of 0 to 3 percent. In most cases, the 21 states with no deficit had state constitutions that prohibited deficit spending (Economist, 1991a).

State deficits have resulted from a combination of increased spending and decreased tax revenues. Of 14 states with deficits of over 5 percent of state spending in 1991, seven were states with the biggest increase in spending in the 1980's, one was a state with the smallest increase, and the remaining six were somewhere in between (Economist, 1991b). Excessive state spending was not the only problem. Of the 14 states with deficits over 5 percent of state spending in 1991, only three had state tax rates over the national average (State Legislatures 1991b). These states had taxed and spent below the national average for some time, but became caught between increased demands for public services and stagnant or falling revenues. Broder (1991a) and Rast (1989) echo these dismal statistics and the frustration state legislators experienced when attempting to satisfy new demands with shrinking or stagnant resources. Rivlin (1992) documents this "fiscal roller coaster,"

When the economy weakens - either nationally or regionally - income, sales and property tax revenues shrink. At the same time, more unemployed and needy citizens seek state and local help.

As state and federal agencies struggle to adjust to these new realities, each has adopted different strategies. Most often, managers undertake incremental change in response to short-term political pressures and demands for stability in program priorities. Such change can be expressed in a number of ways, including a search for new revenues or stabilizing existing revenue sources, increasing agency productivity, or redirecting agency resources (Levine, 1980).

State Natural Resource Programs

State governments commonly exercise responsibility for the management of a wide variety of natural resources. Often extending beyond management of state owned lands, these responsibilities may also include efforts to influence activities on private lands via technical assistance and incentive programs as well as broader state actions (e.g., forest protection, insect and disease control) focused on forests regardless of ownership (Webster 1992). As such, the stability of state funding for natural resource management is an important issue.

In 1987, state agencies managed 26,705,000 acres of timberland or 5.5 percent of the nation's total timberland (Waddell et.al. 1989). This is an increase from 19,183,000 acres in 1952 when state owned and managed land constituted 3.8 percent of the nation's timberland base. Only forest industry also increased their timberland ownership during this time period. State-owned lands are geographically concentrated in the Pacific Northwest (including Alaska) and the five states adjacent to the Great Lakes.

Increasing timberland area owned by state governments is significant for a number of reasons. First, since 1987, restructuring in the forest products industry has led to several well-publicized attempts by industry to sell large blocks of timberland, especially in Northeastern United States. Second, only 21 percent of the total land area and 66 percent of the total forest land area of the U.S. was classified as timberland in 1987. Third, timberland acreage shows a steady downward trend. Since 1952, timberland acreage nationally shrunk five percent. Timberland represents a source of raw material for U. S. forest products industries -- industries that are important components of the nation's economy. As such, state-owned timberland will in all likelihood be relied on to provide an even larger component of the nation's wood supply in the future.

Recreation, wildlife, fisheries, and other benefits of the forest -- in addition to wood fiber -- are heavily dependent on forest land classified as timberland. Because demand for these non-timber products is also increasing, resource agency management capability and intensity are crucial to accommodating rising demands for various products of the forest. In addition to timberland, states also own and manage other types of lands such as deserts, lowland areas, prairies, and rocky mountainous lands. These lands can be very fragile and also require extensive management to protect the resources on them.

State natural resource agencies also have long standing and increasing influence over management activities occurring on private lands. This influence is prominent in the areas of forestry and soil and water management. State natural resource agencies initiate major programs to implement both federal and state regulatory and incentive programs to protect soil and water resources. Some common activities include permitting programs for construction in shoreland areas, incentives for retention of wetland areas, and incentive or regulatory programs to reduce soil erosion. These state programs apply to all lands in a state regardless of ownership.

Assistance and incentive programs directed toward non-industrial private forest landowners have also been within the program domain of state natural resource agencies. Such programs encourage private forest landowners to properly manage their forests for wildlife, timber, recreation, or any other objective desired by the landowner. In recent years many states have initiated harvesting and forest management guidelines for private forests. Usually called best management practices, these standards commonly specify road construction standards, reforestation requirements, and shoreland cutting limits. In some states these practices are voluntarily applied while in others they are mandatory, enacted into law as state forest practices acts. State forest practices acts often involve state inspection and permitting systems.

State natural resource agencies exert influence over fire, wildlife and fisheries. Wildfire does not respect property boundaries and wherever it occurs in rural areas, state agencies often have primary suppression responsibilities, except on federal ownerships. State fire agencies also have primary responsibility for fire prevention education and provision of fire equipment useful in wildland fire suppression (usually refurbished surplus military vehicles) to rural fire departments. States also have major responsibility for the management of fish and wildlife. Similar to wildfire, fish and wildlife do not respect property boundaries and consequently, management responsibility is vested with the state in the setting of hunting and fishing regulations. Also wildlife is often declared "common property" in state constitutions. Several exceptions to this rule exist in the case of migratory waterfowl and threatened and endangered species. In general, however, state agency regulations predominate in guiding the use and management of both game and non-game species.

In sum, state governments exercise significant influence over the forest resource activities that maintain the economic and environmental health of a state. Considerably more has been written about federal agency programs and activities suggesting these agencies have an overriding influence on all natural resource management. Although the federal government have in the past often provided important portions of state natural resource agency budgets and leadership in many program areas, this is far from true today. As state programs have developed and the federally funded portion of their

budgets has decreased, states have become more independent of federal direction. There is still considerable interaction between these levels of government, but state agencies have become more equal vis-a-vis federal natural resource agencies and are likely to become even more independent as time goes on. This fact, in addition to the importance of current state programs, makes state natural resource funding an important topic for investigation.

STUDY OBJECTIVES, SCOPE AND METHODS

Objectives and Scope

The study was initiated to gain a better understanding of state natural resource funding conditions, including circumstances that influence the development of innovative funding mechanisms. Specifically, the study sought to gain a better understanding of:

Type and Extent of Changes in the Budgets and Funding Sources. Of interest was the identification of information about agency appropriations, receipts, and transfers. To be tested were the presumptions that (a) state funding committed to natural resource management has decreased in the last decade and a half compared to state government spending overall, and (b) state agency funding derived from general funds and federal transfers to the states has declined while reliance on user based or otherwise restricted use funds has increased.

Political and Economic Factors Affecting Agency Funding. Focus was on determining correlations between funding change and various environmental variables. To be tested were the presumptions that (a) natural resource programs that are in agencies that carry out other functions (primarily environmental protection) have more unstable funding than natural resource programs that are in agencies exclusively devoted to natural resource management, (b) the degree of funding erosion has been most severe in states experiencing severe economic downturns, and (c) there are differences between functional areas regarding the stability of funding and the proportion of funding that is derived from the state general fund.

Circumstances Leading to Innovative Funding Systems. Innovations designed to create new or stabilize existing funding sources have occurred in circumstances and environments unique to individual states or agencies -- circumstances sometimes drastically, sometimes subtly different from place to place even though the essential "problem" (lower budgets for example) may be identical. Focus under this objective was

on describing successful funding source change and under what circumstances it occurred, namely why state agencies chose the funding source they did and what factors contributed to the success or partial success (by their own estimation) of that new funding source. To be tested were the presumptions that (a) state economic circumstances are an important motivator in getting funding innovations approved, (b) four different groups of people are involved in funding innovations: creators of the idea, technical specialists, political specialists, and entrepreneurs who steer the innovation among these three groups, and (c) most of the policy process from the initial idea to final implementation of a new funding source is done quietly without extensive public or interest group involvement.

The focus of the study was state natural resource programs which were grouped into nine functional areas for the purposes of analysis. For each functional area, personnel levels and budget levels were examined. The period of analysis for the study was 1975 to 1990. During this period, natural resource managers had to contend with enormous economic and political change. While it is true, historically, there have been times of more dramatic change in the environments of natural resource agencies, the type of change was decidedly different -- expansion rather than contraction as was the case during the period in question.

Procedures

The study involved three major steps, namely establishment of a general model to guide analysis, a questionnaire survey of state natural resource agencies, and the development case example programs that highlight especially unique funding arrangements.

Analysis Model

The model used to guide the analysis involved examination of four major political and organizational levels important to an understanding of program funding conditions, (Rubin 1997), namely resource functional level, natural resource agency level, all state agencies level, and statewide economic environment level. *Functional level* consisted of nine subunits: forestry, fire, wildlife, fisheries, enforcement, parks and recreation, minerals and energy, soil and water, and administration and support services. *Natural resource agency level* consisted of state agencies or departments that contain units involved with one or more of the functional level subunits. The *all state agencies level* consisted of all state government agencies regardless of function. The *state economic level* consisted of general economic and social elements in the state that indirectly influence agency funding and programs, but over which the agency has little control. Within this structure, focus was on the degree of instability at each level (and each subunit within a level), how instability had changed over time at each level, and if change at one level is correlated with change at another level. To determine change over time, information was collected for the years

1975, 1980, 1985, and 1990.

State Survey

Information about funding trends for 1975, 1980, 1985, and 1990 was gathered via a mail questionnaire (Appendix A) from state resource management agencies in nine states, namely Florida, Massachusetts, Michigan, Minnesota, Montana, New York, Pennsylvania, Texas, and Washington. The following budget information was sought: total budget amounts, general fund appropriations by functional area, budget amounts from non-general fund sources by functional area, and budget amounts from federal transfers. In addition to budget information, data were gathered on personnel levels and agency organizational structure. The survey questionnaire was pretested by budget officers in Minnesota and Michigan.

Criteria used to select the states that received the mail questionnaire included total state spending, total forest/range land, total state/county public lands, per capita state spending, and available data on total state spending for natural resource programs. A total of 25 natural resource agencies and/or commissions within the nine states were contacted with the mail questionnaire. Despite extensive pre-survey contact with recipients, repeated post-survey follow-up, and flexibility regarding the form in which the data could be returned, response rates were low. Agencies and commissions in six (Florida, Michigan, Minnesota, New York, Pennsylvania and Washington) of the nine states responded. However, only 12 agencies and commissions in the responding states completed the questionnaire.

Secondary Information

Supplemental information about state fiscal conditions was obtained from previously published information on various funding sources, including user fees, bonding schemes, and dedicated or restricted funds. The information gathered from published sources was organized into three general categories, the economy (general state of the economy or funding levels within the four environmental levels), personnel (number of state employees and personnel levels within the natural resource agencies and functional area environmental levels, and structure (organizational structure of natural resource agencies).

Case Studies

Focusing on especially innovative funding mechanisms, case studies were carried out in Minnesota and Michigan. Of interest in Minnesota was the Environmental and Natural resources trust Fund, while in Michigan focus was on the Forest Development Fund. Detailed information was obtained via written and verbal inquiries of officials involved in the development and implementation of these funding programs (Appendix B). Of

special interest was how the innovation was conceived, how adoption was achieved, the environment within which this occurred, and success to date.

BUDGETARY AND FISCAL CONDITIONS

State-Level

Fiscal Condition

The condition of a state's overall economic and fiscal climate is a reflection of a number of specific conditions, including employment by state government, statewide unemployment rate, nominal per capita personal income, nominal total state spending, and nominal total state general fund spending. Information about these variables was provided by the six responding states (Table 1). Changes in these variables during the period 1975 to 1990 varied greatly from one state to the other. For example, within the context of a national 35 percent increase in total state government employment from 1975 to 1990,

Table 1

Table 1 cont

Table 1 cont

Pennsylvania experienced a decline (minus 6 percent) in this variable), while Florida had the highest growth rate, namely 72 percent. The percentage spread between the two is 78 percent. The least spread between highest and lowest states (75 percent) occurred for growth in nominal per capita income, while nominal total state general fund spending showed the greatest spread (380 percent)(excluding Florida). The percentage difference between high and low states for nominal total state spending was 178 percentage points.

Comparison of the growth rates in each state with growth rates nationally from 1975 to 1990 give some indication of how consistently rates vary within each state (Table 1). Growth rates of all five indicators tend to vary in the same direction when compared to national growth rates. In Michigan, the growth rates of four indicators are below national rates and the unemployment rate is higher than the national rate in all four years sampled. A similar pattern exists in Pennsylvania except that the unemployment rate is higher than the national rate in two years and lower in two years. Florida shows the same pattern as Pennsylvania except in the opposite direction -- four indicators were above national growth rates with unemployment rates below national rates in all four years sampled.

The remaining three states show a less consistent pattern. In New York, the growth rates of three indicators were above national rates while one was below (Table 1). The unemployment rate was above national rates in two years and below national rates in two years. Unemployment rates in Washington and Minnesota varied in the same direction for all four years sampled when compared to national rates, above and below respectively. In Washington the growth rates of two indicators were above and of two indicators below national rates and in Minnesota the growth rates of three indicators were below national rates, and above national rates for one indicator.

These differences between states suggests that the fiscal stress faced by each state varies. It also suggests that Michigan faced the highest amount of state fiscal stress and Florida the least. Pennsylvania also had a weak state economic environment while the positions of the remaining three states was uncertain. This characterization is partially supported by Gross State Product (GSP) changes over time. Michigan had GSP growth of minus 0.3 to plus 1.9 percent from 1977 to 1989, within the grouping of states with the lowest rates. Florida had GSP growth of 4.0 to 6.9 percent in that same period and was included in the grouping of states with the highest rates. Pennsylvania and New York had GSP growth rates in the 1.9 to 2.8 percent range while Washington and Minnesota had growth rates in the 2.8 to 4.0 percent range (Federal Reserve Bank of Cleveland, 1992). The detailed examination which follows clarifies the relative positions of each state.

A more detailed examination of the health of state economies generally indicates that Michigan was had the poorest economic and fiscal environment during the period in question (Table 2). In 14 of 17 comparisons with national rates, Michigan had growth rates or levels below (or in the case of the unemployment rate, above) national rates. Nominal per capita personal income was above national rates in three years, however, from 1975

to 1990 it deteriorated considerably. Pennsylvania also can be viewed as a state with a poor economic climate during the period 1975 through 1990.

Table 2

Table 2 cont

Florida was ranked the best in terms of economic or fiscal environment. In 11 of 17 comparisons with national rates, Florida had growth rates or levels above (or in the case of the unemployment rate, below) national rates. Interestingly, Florida shows exactly the opposite pattern of Michigan regarding nominal per capita personal income. From 1975 to 1990, this measure improved considerably going from 3.9 percent below the national level in 1975 to 0.3 percent above the national level in 1989. Conversely, in Michigan, nominal per capita personal income was 2.2 percent above the national level in 1975 and declined to 0.9 percent below the national level in 1989. New York also can be classified as a state with a favorable economic and fiscal environment but not to the same degree as Florida.

Washington and Minnesota can be judged as having a mixed economic climate, depending on the measure considered. They differed from zero on the point scale by only 5 and 18 points respectively compared to variations of 50, (104), 115, and (144) for the other states.

In sum, the six states might best be grouped as follows in terms of the health of their statewide economic conditions: poor (Michigan and Pennsylvania), favorable (Florida and New York) and neutral (Washington and Minnesota).

State Responses

Faced with decreasing tax revenues and increasing demands for services, states have three options -- reduce state spending, increase tax rates, or fund state programs through sources not tied to tax receipts. State general funds are usually highly dependent on state income, sales, and other forms of broad-based state taxation. Sources of revenue not tied to these forms of taxation include general obligation or revenue bonding (which defer payment for current spending), receipts from state lotteries, federal transfers, user fees, and receipts from sale or use of state assets. These latter sources usually provide revenue for dedicated funds, the use of which is specified by law. Dedicated funds reduce the ability of legislatures to respond to short-term changes in demand for particular services and budgetary shortfalls. However, they provide more stability for program areas that receive them if the yearly amounts are more stable than general fund monies and/or increase more over time. Given these revenue generating options, focus can turn to explaining which option state governments prefer given various intensities of economic duress.

States faced with poor economic or fiscal environments may well seek greater reliance on nontax revenues. The assumption being that such a strategy is less likely to alienate key constituents; increasing tax rates and reducing spending being much more politically risky. By comparing changes in total state spending and total state general fund spending, some indication of the extent to which states have sought revenue from nontax sources can be obtained. Although the pattern is weak, there is some indication that such

is true for the states studied here (Table 3). Michigan, for example, did follow this pattern. Nominal total state spending in Michigan increased considerably more than nominal total state general fund spending between 1975 and 1990. Since Michigan must operate under a balanced budget, other revenue sources account for spending exceeding increases in general fund spending (unlikely accounted for by increases in federal transfers since such funds have been more likely to decrease since 1975 rather than increase).

Table 3 - Change in State Total and State General Fund Spending, by State. 1975 to 1990.			
State	Increase in Nominal Total State Spending (percent)	Increase in Nominal Total State General Fund Spending (percent)	Percentage Point Difference Between Total State Spending and Total State General Fund Spending (percent)
Minnesota	242	234	(8)
Michigan	190	95	(96)
Florida	354	1,840	1,487
Pennsylvania	175	182	7
New York	235	474	239
Washington	278	318	40
Nationwide all States	258	371	113

Note: Nominal amounts analyzed. 1990 estimate based on regression estimates from Table 1. Parentheses contain negative percentages

Florida, the state with the most favorable economic and fiscal environment, showed the opposite pattern. Nominal total state spending did not increase as much as nominal total state general fund spending between 1975 and 1990. This suggests that general tax revenues which go into the state general fund were sufficient to cover increased spending. New York, a state also with a favorable economic and fiscal environment, also enjoyed considerably higher growth in nominal total state general fund spending compared to growth of nominal total state spending. Washington and Minnesota, grouped together as having neutral environments, also occupied the middle ground in similar comparisons between growth of total and general fund state spending. They also assumed the same relative position -- Washington slightly better off than Minnesota.

Pennsylvania did not support the expected pattern of seeking nontax revenues as a means of dealing with their poor economic and fiscal climates. The state had the lowest growth rate in nominal total state spending of all six states but had a slightly higher growth rate in nominal total state general fund spending, suggesting increases in those taxes which contribute to the general fund were a significant part of this state's strategy.

The percentage increases in nominal total state spending across states indicate that a combination of strategies were used by states. The two states with the most favorable economic and fiscal environments increased total state spending by 354 percent and 235 percent (nominal terms) from 1975 to 1990 -- strongly supported by increases in general fund spending. The two states with the poorest economic and fiscal environments showed considerably more spending restraint, increasing their total state spending by 190 percent and 175 percent in nominal terms from 1975 to 1990 strongly supported by increases in other fund sources of revenue. Two remaining states are not consistent with this pattern.

In sum, states under fiscal stress restrain their spending, seem to resist tax increases (Pennsylvania is an exception to this), and increasingly rely on other fund resources to support state programs. These other fund resources, however, are apparently not robust enough to substitute entirely for lost general funds. States with the most favorable economic and fiscal environments have sufficient tax revenues to support much higher state spending and less incentive to develop other sources of revenue.

Agency-Level

The fiscal health of all state agencies, including agencies with natural resource responsibilities, is also subject to a variety of circumstances. For example, during times of economic downturn it is not unusual for the budgets of social services or corrections agencies to increase relative to the budgets of other state agencies. Of special concern here is how all state agencies fared in terms of general fund versus total state spending, and how agencies with natural resource responsibilities fared from 1975 to 1990 relative to other state agencies.

State Agencies Generally

The previous section examined nominal increases in various economic and fiscal conditions. Attention is now turned to examination of real increases in total state spending and total state general fund spending, and actual increases in total state government employment (Table 4). As would be expected, the relationship between total state spending and total state general fund spending for each state as discussed in the previous section holds true when real budget amounts are examined. States with poor economic environments had lower real total state general fund spending growth rates as compared to real total state spending growth rates, while states with a favorable economic and fiscal environment show the opposite pattern. Similarly for the all state agencies level, fiscal stress and funding instability were transmitted from the state economic level in all states except Pennsylvania. This was most pronounced for general fund monies.

Fiscal stress and funding instability had less influence on total state government employment than they did on budget amounts. For the four states with the favorable and the poor economic and fiscal environments, respectively, relative growth rates in total state

government employment match the relative positions of each of these states on the fiscal stress scale. The exception is that the positions of the two states with the poorest economic and fiscal environments is reversed. If the pattern were to hold, Michigan should have the lowest growth rate in state government employment and Pennsylvania the second lowest. The reason for this result is unclear.

Table 4

Table 4 cont

Except for Michigan, all states had real increases in both total state spending and total state general fund spending. They ranged from a high of 141 percent in total state spending in Florida (excluding that state's general fund spending growth rate which at 615 percent is out of line with other rates) to a low of minus 55 percent in total state general fund spending in Michigan. Florida also had the highest growth rate of total state government employment at 72 percent, while Pennsylvania had the lowest growth rate of total state government employment at minus seven percent.

The information and analysis suggest some possible generalizations. For example, the strength of a state's economic environment may influence the behavior of state legislators and agency managers. In poor economic environments, these agents may seek out and enact "other fund" sources of revenue to supplement shrinking general fund monies. A second possibility is that the sources of money going into the general fund are strongly influenced by the condition of a state's economy, while sources of other funds are influenced to a much lesser degree by the condition of a state's economy. This would imply that legislators and managers may have little influence of the mix of revenue sources.

Focusing on intervals rather than specific years, comparisons indicate that for most states, the 1975-1980 period was the most fiscally constrained. (Table 5). The 1980-1985 period was better for most states; real budget increases were the greatest. Despite several exceptions, this result is not surprising. Nationally, the economy in the 1975-1980 period was negatively affected by sudden rises in oil prices. The 1981-1982 recession also adversely affected the national economy. Only the 1985-1989 period was free from some major economic disturbance. Recessions, oil price shocks, and difficulties in particular industrial sectors impact state economies at different times based on the makeup of their economic base. This may explain much of the variability which occurred in the context of the time periods assessed.

Natural Resource Budgets

The next question to be addressed is how natural resource agencies have fared in different economic and fiscal environments. Is natural resource funding correlated with the condition of a state's economic and fiscal environment? For sure, natural resource responsibilities are organized differently in all states surveyed. Two states have all natural resource programs contained in only one agency; four have programs spread over two or more agencies or commissions. Consider the 12 agencies in the six surveyed states (five of the agencies operate non-natural resource programs in addition to natural resource programs).

In general, the relationship between natural resource budgets and a states economic and fiscal climate is unclear. For example, although real increases in total budgets of natural resource agencies from 1975 to 1990 ranged from a high of 197 percent to a low of 79 percent, total state spending and total state general fund spending increases

in these agencies do not appear to be correlated with the economic or fiscal environment of individual states (Table 6). The smallest increase (79 percent) occurred in the state

Table 5

Table 6

Table 7

Table 8

identified as having the most favorable economic and fiscal environment. The largest increase (197 percent) occurred in a states having a neutral economic and fiscal environment. The natural resource portion of these agency budgets are similarly inconsistent with state economic and fiscal environments (Table 7), as is the picture portrayed when assessing the general fund part of the natural resources portion of agencies with natural resource responsibilities(Table 8). Revealed in the latter, however, are budgetary declines experienced by natural resource programs. Michigan and New York experienced real declines in the general fund portion of their natural resource programs from 1975 to 1990.

While a clear and consistent pattern exists between the condition of a state's economic and fiscal environment and total state spending and total state general fund spending, the same can not be said of the other three budget categories (Table 9). Total agency budgets in five states increased from 1975 to 1990 more than total state spending, indicating that relative to other state agencies, agencies with natural resource functions did considerably better. The only exception is Florida, the state ranked as having the most favorable state economic and fiscal environment. Similarly confusing results occur when the total and general fund portion of natural resource spending are compared across budget categories and within groupings of states by economic and fiscal environment strength. Clearly, many factors intervene to alter impacts on state natural resource programs and agencies.

Table 9 - Change in Major State Budget Categories, by State. 1975 to 1990.					
State	Total State Spending (percent)	Total Agency Budget (percent)	Natural Resource Portion of Agency Budget (percent)	Total State General Fund Spending (percent)	General Fund Portion of Natural Resource Budget (percent)
Michigan	57	113	30	(55)	(38)
Florida	141	79	86	615	24
Pennsylvania	85	118	140	47	6
New York	100	153	65	177	(28)
Washington	98	197	67	110	163
Minnesota	80	147	147	70	155
Six States Subject of Study	84	112	80	110	22

Note: Based on regression estimates and real dollars. Parenthesizes contain negative percentages.

The information analyzed up to this point does not indicate a clear correlation between the degree of fiscal stress experienced by a state and changes in the total or the

general fund portion of natural resource agency budgets. Exactly what factors are responsible for this condition are not clear. One comparison suggests funding source changes buffer natural resource agencies from state fiscal stress. Nationally, general funds as a percentage of total state spending increased from 43 percent in 1975 to 57 percent in 1990. For natural resource programs assessed in the six states studied here, the general fund percentage of total natural resource program budgets decreased from 52 percent in 1975 to 35 percent in 1990. The inconsistency may be explained by this funding shift -- states have differing experiences in gaining secure, other fund sources of revenue. States that do so are able to maintain their funding despite a poor state economic and fiscal environment. Those that are unable to access secure funding loose ground even in states with favorable economic and fiscal environments.

The relationship between natural resource agency funding and state fiscal and economic environments is further assessed using a graphical approach (Economist, 1991c) (Figure 1). Focusing on the six states studied here, axis A is general fund spending as a percentage of total natural resource spending; axis B is natural resource spending as a percentage of total natural resource related agency spending; axis C is total natural resource agency spending as a percentage of total state spending; and axis D is total state spending as a percentage of state spending nationally. Percentages for the years 1975 and 1990 are plotted on each axis and joined to form two diamonds.

Comparisons of axes A, B, C, and D give some indication of the difficulties encountered by natural resource programs in trying to maintain funding vis-a-vis other state agencies. Axis D indicates that from 1975 to 1990, state spending in the six states studied here decreased from 30.3 percent of state spending nationally to 23.4 percent in 1990, a 23 percent decrease. Axis C indicates that agencies with natural resource responsibilities did much better compared to other state agencies during this time, increasing their percentage of total state spending from 1.0 percent in 1975 to 1.6 percent in 1990, a 60 percent increase. The natural resource portion of these agencies, however, did not benefit from this increase. Axis B indicates that spending in natural resource programs decreased from 75 percent of natural resource related agency spending in 1975 to 63 percent in 1990, a 16 percent decrease. Finally, axis A shows the general fund portion of natural resource program budgets suffered even greater erosion, decreasing 33 percent from 52 percent of total natural resource program funds in 1975 to only 35 percent in 1990.

The information in Figure 1 clearly indicates that natural resource programs have lost ground compared to other types of state spending. When information for the six states considered here are combined (i.e. individual state variations are removed), fiscal stress and uncertainty does appear to be transmitted from a state's general economic and fiscal level to natural resource programs and such programs appear to be disproportionately affected by this system wide stress.

While some of the above analyses give conflicting evidence regarding the extent of fiscal stress that is transmitted to budgets from general economic and fiscal climates, a focus on state government employment levels leads to a more clear indication of this relationship (Table 10). Total state government employment increased 20 percent in

Figure 1

Table 10

Michigan and decreased 6 percent in Pennsylvania, the two states with the poorest economic and fiscal environments. Conversely, total state government employment increased 72 percent in Florida and 60 percent in New York, the two states with the most favorable economic and fiscal environments. Washington and Minnesota fall somewhere between these two categories. These relationships also hold for total natural resource employment for all states except Minnesota which had higher than expected growth in total natural resource employment. Total natural resource employment decreased 26 percent in Michigan and decreased 20 percent in Pennsylvania, the states with the poorest economic and fiscal environments. In contrast, total natural resource employment increased 63 percent in Florida and 25 percent in New York, the states with the most favorable economic and fiscal environments. These relationships do not hold true when total agency employment is examined. Again, this suggests that the structure of agencies may have an influence on total agency employment compared to the pattern established by total state government employment and total natural resource employment.

Natural Resource Agency Level

Organizational Structure

The fiscal condition of a natural resource agency can be affected by the type of programs the agency is responsible for administering. Regarding the latter, five of the 12 agencies/commissions studied here are combined agencies, namely they have natural resource responsibilities combined with responsibilities for other government functions. Four of these five have responsibilities for both natural resource and environmental protection functions (e.g., air and water quality regulation, hazardous and solid waste disposal, pesticide regulation), while one has a combination of natural resource responsibilities and agricultural functions (e.g., food inspection, administration of federal farmland programs).

Natural resource functional areas in non-combined agencies fare considerably better than natural resource functional areas in combined agencies, namely increases of 91 percent and 77 percent respectively (Table 11 and 12). Comparing the growth rates of general fund monies within combined versus non-combined agencies also suggest that natural resource programs in non-combined agencies are more successful in maintaining general fund monies compared to natural resource programs in combined agencies (Table 13). When all functional areas are included, actual general fund monies in combined agencies increased from \$171,764 in 1975 to \$176,702 thousand in 1990 (three percent increase). This compares to a 69 percent increase from 1975 to 1990 in non-combined agencies (Table 14).

Combined and non-combined agencies rely differently on general fund monies (Table 15). In four of seven functional areas (forestry and fire, wildlife and fish, enforcement, and soil and water), non-combined agencies are more dependent on general

fund monies than combined agencies. Within non-combined agencies, reliance on general

Table 11 and 12

Table 13 and 14

Table 15 and 16

funds in these four functional areas stayed approximately the same or actually increased in the four years studied. In contrast, reliance on general funds in these same four functional areas in combined agencies showed a consistent downward trend in three of the four areas and no change in the fourth area. When overall natural resource budgets as a portion of total agency budgets are summarized, the portion of the total budget devoted to natural resource agencies has decreased since 1975 in combined agencies (Table 16).

In terms of personnel, natural resource programs in non-combined agencies also experienced better conditions during the period 1975 to 1990 (Table 17). The predictability and stability of personnel levels is also higher in non-combined agencies.

Type of Organization	Year				Estimates		
	1975	1980	1985	1990	1975	1990	Change (percent)
Combined Agencies	8,126	7,974	7,891	8,270	7,341	8,790	20
Non-combined Agencies	5,670	6,305	6,732	7,906	5,533	7,773	40
Total	13,796	14,279	14,623	16,176	13,445	15,992	19

Focusing only on the six states studied here, the total budgets of non-combined agencies increased 91 percent over this time period while the total budget of combined agencies increased 110 percent over this time period (Table 18). So both combined and non-combined natural resource agencies experienced more budget growth relative to other state agencies from 1975 to 1990. Natural resource programs in combined agencies, however, did not benefit from the increased growth in total combined agency budgets. The total natural resource portion of combined agencies experienced real budget increases of only 77 percent between 1975 and 1990.

With the exception of Pennsylvania, every non-combined agency had larger budgetary increases compared to the natural resource portion of combined agencies.(Table 18). In part, this may result from the reality that environmental protection priorities may be more compelling since they often have the potential to more directly relate to human health issues. Environmental programs have also experienced dramatic growth since 1975, largely due to federal law, but with states increasingly responsible for a large share of the investments required to implement such programs (State Legislatures, 1991a). In a competition between concerns over human health and concerns over land management, it is perhaps inevitable that land management suffers. The information presented here suggests that this dynamic may apply to a greater degree when such decisions are made within state agencies rather than in a legislature which makes funding decisions for separate environmental protection and resource management agencies.

Table 18

In sum, natural resource programs that are organized into agencies with only natural resource responsibilities rely less on general fund resources -- but those funds are more predictable and stable over time. However, this condition varies considerably by functional area. Over time, federal and other fund resources more than make up for these lower general fund resources, contributing to higher real total budget increases from 1975 to 1990 in non-combined agencies compared to natural resource programs in combined agencies. Organizationally, this suggests that combining natural resource programs with other functions, particularly environmental protection functions, may be financially disadvantageous to natural resource programs.

Functional Responsibilities

The fiscal health of any one natural resource program can be altered by changes in program emphasis occurring within a broader resource context. In recent years, for example, increases in environmental concerns have often altered the focus of many natural resource programs. For example, wildlife programs have expanded beyond game management to include management non-game wildlife species, while parks programs have added cultural resource programs to more traditional functions. When total budgets of studied states are combined and allocated to various functions, all functional areas experienced real budget increases from 1975 through 1990 (Table 19). Fisheries, enforcement, minerals and energy, soil and water, and administration and support services experienced the greatest increases, all increasing more than the 80 percent average for all functional areas combined. Forestry, wildlife, parks and recreation, and fire experienced total budget growth below this average for all functional areas. Only three

Table 19 - State Natural Resource Budgets, by Functional Area. Selected Years 1975 to 1990.

Functional Area	Total Natural Resource Budget Amount (thousand real dollars)				Estimates (thousand real dollars)		
	1975	1980	1985	1990	1975	1990	Change (percent)
Forestry	72,922	78,759	98,620	116,121	68,235	114,976	68
Fire	38,741	42,226	32,563	44,769	35,253	44,525	26
Wildlife	47,479	54,000	68,934	72,310	46,515	74,847	61
Fisheries	70,680	72,193	87,351	124,717	56,644	120,826	113
Enforcement	55,668	61,632	83,158	112,478	47,262	109,206	131
Parks & Recreation	109,253	132,340	157,264	147,431	108,385	164,759	52
Minerals & Energy	26,667	25,526	78,872	95,080	12,006	101,067	742
Soil & Water	19,315	15,922	21,031	29,450	13,042	29,817	129
Administrative & Support Services	105,927	94,680	121,232	162,086	80,863	161,099	99
All Functional Areas	546,652	577,280	749,024	904,444	495,215	893,485	

functional areas show any definitive trends up or down regarding their respective percentage of total budget from 1975 to 1990 (Table 20). Fire shows a downward trend from 1975 to 1990, although there is significant variability of funding in this functional area (probably due to the variation introduced by emergency funds which vary greatly based on fire weather from year to year). Conversely, enforcement and minerals and energy show upward trends regarding the portion of the total natural resource budget these functional areas constitute. The other six functional areas exhibit no clear pattern, portions of total budgets have not varied significantly way from 1975 to 1990. As for general fund monies, parks and recreation experienced the most severe erosion of general fund monies from 1975 to 1990, while minerals and energy experienced the largest increase (Table 21).

Table 20 - Functional Area Portion of Natural Resource Agency Budgets, by Functional Area. Selected Years 1975 to 1990.

Functional Area	1975 (percent)	1980 (percent)	1985 (percent)	1990 (percent)
Forestry	13.3	13.6	13.2	12.8
Fire	7.1	7.3	4.3	5.0
Wildlife	8.7	9.4	9.2	8.0
Fisheries	12.9	12.5	11.7	13.8
Enforcement	10.2	10.7	11.1	12.4
Parks & Recreation	20.0	22.9	21.0	16.3
Minerals & Energy	4.9	4.4	10.5	10.5
Soil & Water	3.5	2.8	2.8	3.3
Administrative & Support Services	19.4	16.4	16.2	17.9
All Functional Areas	100.0	100.0	100.0	100.0

Note: Based on analysis of real dollars.

Attention can also be focused on changes in the allocation of general fund and total fund monies among various functions (Table 22). Although wildlife and fisheries functional areas are the least dependent on general fund monies, both wildlife and fisheries and soil and water exhibit fairly consistent percentages over the years surveyed. The forestry and fire functional area also shows a consistent general fund percentage of 58, 57, and 58 percent in 1980, 1985 and 1990, respectively, after a drop from 63 percent in 1975. Only parks and recreation and minerals and energy show graduated and fairly consistent reductions in the percentage of their total budgets accounted for by general fund monies.

Changes in employment is also a measure of change in program emphasis (Table 23). For the studied states, forestry and fire had the lowest growth in employees from 1975 to 1990 (three percent). Wildlife and fisheries also had growth in employees that was below the 20 percent average increase for all functional areas. The soil and water

functional area had the highest growth rate (98 percent from 1975 to 1990), far surpassing the functional area with the next highest growth rate, minerals and energy at 58 percent.

Table 21 - General Fund Portion of Natural Resource Agency Budgets, by Functional Area. Selected Years 1975 to 1990.

Functional Area	General Fund Portion of Total Natural Resource Budget (thousands real dollars)				Estimates (thousands real dollars)		
	1975	1980	1985	1990	1975	1990	Change (percent)
Forestry & Fire	70,742	70,620	74,747	93,147	62,795	91,833	46
Wildlife & Fisheries	25,029	32,997	30,222	40,443	23,620	40,725	72
Enforcement	22,432	25,748	34,093	39,576	21,280	39,644	86
Parks & Recreation	64,161	71,187	52,161	58,279	77,685	45,208	(42)
Minerals & Energy	17,177	12,063	18,296	20,026	9,747	24,034	147
Soil & Water	11,570	9,324	13,676	17,369	8,143	17,827	119
Administrative & Support Services	45,883	51,437	63,126	52,217	37,904	68,428	80
All Functional Areas	256,994	273,376	286,321	321,057	251,970	316,904	26

Note: parentheses contain negative percentages.

Table 23 - Change in Employment in State Natural Resource Agencies, by Functional Area. Selected Years 1975 to 1990.

Functional Area	Employees				Regression Estimates		
	1975	1980	1985	1990	1975	1990	Change (percent)
Forestry & Fire	3,606	3,651	3,625	3,701	3,587	3,705	3
Wildlife & Fisheries	3,231	3,312	3,306	3,631	3,131	3,608	15
Enforcement	1,644	1,817	2,000	2,283	1,616	2,256	40
Parks & Recreation	2,449	2,593	2,543	2,860	2,375	2,848	20
Minerals & Energy	559	620	807	787	538	849	58
Soil & Water	419	338	414	535	286	567	98
Administration & Support Services	1,888	2,130	2,115	2,608	1,800	2,570	43
All Functional Areas	13,796	14,461	14,810	16,405	13,517	16,218	20

Table 22

SPECIALIZED-DEDICATED FUNDING SOURCES

Character of Special Sources

Definition and Purpose

Forestry and related natural resource agencies have access to a huge variety of state and federal "earmarked," "dedicated," or "trust funds." Such funds can be statutorily or constitutionally dedicated, with the former being most common (Aronson and Hilley, 1986). Statutorily dedicated funds typically must be appropriated by a legislature body. Although dedicated to a program or a certain segment of society, a legislature may ensure flexibility over their use by amending the authorizing statute or placing limits on the way the funding may be used. During times of state fiscal stress, interest groups and program managers may allege that statutorily dedicated funds are being "raided" by the legislature to pay for higher priority programs. Such can be a motivating factor in seeking a constitutionally dedicated fund. Constitutionally dedicated funds eliminate legislative flexibility and, once approved, can be altered only through state-wide referenda -- the same manner in which they are established. The amount of dedicated funds varies greatly from state to state. Alabama and Montana earmarked the highest percentage of tax collections in 1988, 89 and 72 percent respectively. Rhode Island and Hawaii earmarked the lowest at 5 and 6 percent respectively.

The source of revenue placed into dedicated funds may or may not be related to the recipient program. The most common state earmarked funds are highway and other transportation related funds used for the construction and maintenance of roads. Sources of fund monies include gasoline taxes, vehicle license fees and other related taxes or fees. Excluding non-tax revenues, such as lottery proceeds and user fees, almost one-third of all earmarked tax revenue was designated for transportation in 1988. In the case of these latter purposes, the source of funds is usually unrelated to the funded programs. Motor vehicle registration fees are the second most commonly earmarked source (34 of 45 states). At least 20 states dedicate all or part of taxes levied on alcoholic beverages, general sales, insurance, tobacco, and severance or production of raw materials. Dedication of all or a portion of these revenue sources is a well established practice on the state level. Other common purposes for which revenues are dedicated are aide to local government and education (Fabricius and Snell, 1990).

The fastest growing new source of dedicated funds are state lotteries. Thirty-two states operate lotteries, of which 21 dedicate all or a portion of the proceeds. It is not surprising that states find lotteries almost irresistible as a means of raising money. The attraction was summed up by Texas Governor Ann Richards on convening a special session of the legislature and urging approval of a state lottery: "It is the rarest of creatures; a popular way to generate revenue." (Star Tribune, 1991). Income tax checkoffs have also increased in popularity in recent years. Although widely used, such

checkoffs produce only a small proportion of revenue compared to other forms of taxation.

New or increased charges for services rendered have also become popular as a means of diversifying state revenue sources. Usually there is a strong link between the service upon which the charge is levied and the program which is the recipient of the dedicated revenues. This link is not as strong as in the case of user or extraction fees where the user of a government service pays directly for a definable quantity of a government service or asset (i.e. an entrance fee for use of a state park or a hunting license which allows the taking of a certain quantity of game). For example, New Jersey dedicates casino licensing charges for casino regulation and Minnesota dedicates part of garbage tipping charges to state-wide recycling programs. The widespread use (and increase in number) of such dedicated funds linking source with recipient program ". . . suggests the breadth of the appeal of linking specific revenues to specific public services." (Fabricius and Snell, 1990).

General fund monies may also be dedicated for special purposes. Voters in both Michigan and California in 1978 and 1988, respectively, approved constitutionally dedicated portions of the state general fund for local government and education. In each case the target programs are guaranteed a certain percentage of the state general fund.

The diversity and total dollar amount of dedicated funds has increased over time but, as a proportion of total state government tax revenues the amount from dedicated funds has declined. As a percentage of total state tax collections, dedicated fund levels ". . . fell from 51.3 percent in 1954 to 41.1 percent in 1963 to 23.0 percent in 1979." (Fabricius and Snell, 1990). By 1984 this percentage had fallen to 21 percent but then increased back to 23 percent in 1988. The primary reason for this decline is the types of taxes that are most commonly earmarked. Personal income taxes are undedicated in every state (except the special case of Michigan and California as noted earlier) and general sales taxes are partially dedicated (11.5 percent of total sales tax revenues) in only 13 states. Yet these two tax revenue categories have been the fastest growing sources of revenue for state government operations. "In 1954, personal income taxes and general sales taxes made up 32 percent of total state tax collections. By 1988, the proportion had almost doubled, reaching 63.3 percent." (Fabricius and Snell, 1990). To a lesser extent within that time period, a few states which historically earmarked a large proportion of tax revenues rescinded this earmarking. These actions also contributed to a reduction in the percentage of states total budgets accounted for by dedicated funds.

Advantages and Disadvantages

An important characteristic of dedicated funds is that they reduce fiscal flexibility and increase the difficulty of adjusting budgets to changing economic circumstances. From the perspective of legislators and budget officials responsible for state-wide comprehensive budgeting, this is a distinct disadvantage. This disadvantage is especially

severe when state fiscal conditions deteriorate and increasing demands must be met with shrinking general fund resources. Under these same circumstances, however, dedicated funds are especially attractive to state program managers, especially if the programs they operate have historically been less successful in maintaining funding during times of fiscal stress vis-a-vis other state programs. Interest groups also favor dedicated funds under these circumstances to avoid annual legislative scrutiny, evaluation, and vote of money (Aronson and Hilley, 1986). In this case, programs heavily reliant on dedicated funds may experience greater funding stability than programs more dependent on the general fund. This can only be inferred in general because the primary sources of money which go into the general fund (personal income taxes and general sales taxes) tend to vary more based on the condition of the state economy compared to the primary sources of money that commonly go into dedicated funds. The stability of individual dedicated funds will obviously vary based on their source of revenue.

A special example of the advantages of dedicated funds to program managers during times of state fiscal stress occurred in California in 1992. A budget impasse between the California legislature and Governor resulted in the issuance of state IOU's to state workers and other state creditors so services could be maintained. Some state government programs, however, were unaffected by this budget impasse.

"CARB [the California Air Resources Board] is even the envy of some other California governmental agencies, because its \$103 million budget comes not from the state's general fund, but from "user fees", everything from permits paid by polluters to the \$6 each car owner pays for a smog-check certificate. So when the rest of the state's workers were paid with IOU's for two months this summer, CARB's staff of 873 got their checks as usual. The arrangement also insulates the agency from legislative pressure." (Wald, 1992).

Stability of dedicated fund monies, however, can be disadvantageous to program managers during periods of state economic growth, if program managers are unable to augment program funding with increasing levels of general fund monies. The existence of dedicated funding to support program operations makes it more difficult for program managers to convince legislators that their programs are deserving of increased levels of general fund monies in addition to existing dedicated fund monies. Clearly, legally mandated and/or more popular programs can surmount this difficulty, especially those with influential interest group support, but weaker programs may not.

A second characteristic commonly associated with dedicated funds is that those who benefit from a government service often pay for it. This is viewed as advantageous from the perspective of some people because it enforces the "benefit principle" -- that those who benefit from a service ought to pay for it (Fabricius and Snell, 1990; Aronson and Hilley, 1986). This principle can best be applied when specific individuals or groups

that use a government service can be identified and charged according to their rate of use (Sharp and Olson, 1978). The dedication of gasoline taxes for transportation purposes are clearly an attempt to meet this principle as are user and extraction fees common to natural resource programs. While some government services may be amenable to such market-like treatment, most are not and even those that produce public benefits which accrue to the non-target direct financial supporters.

Advantages of dedicated funds which meet the "benefit principle" include greater program efficiency and expansion or reduction of programs as desired by the users. These advantages depend on how closely the benefit principle applies. To the extent that the benefit principle is not met, these can no longer be cited as advantages. In addition, levies on some users of a government service and not others can invoke a backlash from those who must pay against those that don't and the government which enforces such a system. This disadvantage can be significant and greatly reduce the ability of government agencies to secure periodic fee increases needed to maintain inflationary increases in program costs.

Dedicated funds are widely believed to increase funding stability. Such stability is very advantageous for programs whose needs are stable and predictable over time, such as the repayment of bond issues or the maintenance of a minimum level of funding for programs with less predictable future needs. For programs with highly variable and unpredictable annual demands, such as the management of forest wildfires, reliance on funding from a stable dedicated fund would be disadvantageous. However, stabilized funding may not, in fact, occur when program managers secure dedicated fund resources for their programs. Ideally, the flow of money from the dedicated fund source should match program needs over time. Many state programs, including many natural resource programs, do not experience fluctuating demand based on the condition of a state's economy. What are often sought by program managers are revenue sources that are stable from year to year and that will keep up with or surpass the rate of inflation. Such sources are rare, if non-existent, but some come close to this ideal such as various types of bonding.

Opponents of earmarking suggest that "earmarking distorts the distribution of funds among programs, since there is no necessary relationship between the amount a source produces and what it is used for." (Fabricius and Snell, 1990). This lack of connection between source and program demand also distorts public policy resulting in under-funding some programs and over-funding others, at least in the short term. Anecdotal evidence (and survey results from this study) suggests many dedicated funds are more stable over time compared to general fund appropriations. Managers, however, face two obstacles in tapping into this increased stability, namely appropriate timing and possible impacts on remaining general fund monies in program budgets. The appeal of securing dedicated fund resources is strongest when state economic conditions deteriorate, a politically difficult time to attempt to get legislative approval for measures that will restrict legislators'

ability to respond to such conditions. Conversely, when the political climate for such efforts improves, general fund spending is likely to be increasing, thus reducing the appeal of stabilizing program funding.

Even if managers are successful in securing a stable, dedicated fund source, this may have adverse impacts on their ability to maintain any current general fund monies in their budgets or secure future increases. This is highly dependent on individual circumstances but should be explicitly recognized as a potential hazard. Anecdotal evidence suggests newly dedicated fund monies often end up substituting for general fund monies rather than supplementing them. A classic example of this phenomenon occurred in Illinois in 1988 when net state lottery revenue was earmarked for education:

" While lottery revenues to education have skyrocketed, state budgetary allocations (which include the lottery revenues) are increasing at a decidedly reduced pace relative to the pre-lottery years ... Funding from sources other than the lottery immediately began to decline after the lottery's inception... The only conclusion that can be drawn is that lotteries which are designated to support education, in all likelihood, do not." (Borg and Mason, 1988).

A final characteristic of dedicated funds is that they can encourage public support of new or increased taxes. The increasing popularity of referendum concerning establishment of new dedicated funds in recent years, and their passage, suggests this characteristic may be accurate. The trend toward increased referendum voting is most pronounced in California but has been growing throughout the country. This form of democracy transfers initial policy making responsibility to voters and, again, constrains legislative flexibility. This is especially severe if referendums involve amendment of the state constitution.

Natural Resource Program Special Sources

Types and Amounts

Various types of dedicated funds have been used as a means of financing natural resource programs. Many of the earliest funds benefitting state agencies were actually federal transfers, funds established and administered on the federal level with monies transferred to state government programs. An example is the Pitman-Robertson Act of 1937 which provides federal matching funds to state wildlife agencies. On average, 17.8 percent of state wildlife budgets in the 1970's were funded from this source. Funded by a tax on hunting equipment, the passage of the law greatly influenced the establishment of state level dedicated funds generally (Chandler 1987):

"Although state participation is voluntary, eligibility to participate was conditioned on state passage of conservation laws that include a prohibition

against the diversion of hunting license fees for any purpose other than the administration of the state fish and game department."

In 1950, state fisheries programs began to benefit from a similar program authorized by the Dingell-Johnson Act. Modification of the law in 1984 expanded the sources and amounts of revenue going into this program and resulted in the expansion of fund revenues from \$38 million in 1985 to \$122 million in 1986 (Chandler, 1987).

Natural resource programs have been as successful at tapping into specialized sources of money unconnected to program outputs as well as more conventional sources (Table 24). Dedicated funds from natural resources severance-extraction taxes totaled

Table 24

Table 24 cont

\$68.9 million in 1988, those from motor vehicle or boat title taxes totaled \$42.0 million, and those from tobacco, general sales and other taxes unconnected to natural resource programs totaled \$295.3 million in 1988. While the percentage of the source dedicated to natural resource programs from unconnected sources is generally much smaller than the percentage dedicated to natural resource programs from connected sources, the total amount received is much higher. To be acknowledged, however, is that the above excludes user fees (e.g., hunting and fishing license revenues and state park entrance fees), and excludes separately designated funds for which there is tacit, but not statutorily required, legislative agreement that revenue placed in those funds would go to specific natural resource programs.

State natural resource agencies are increasingly relying on special dedicated sources of funds (Aronson and Hilley 1986). From 1973 to 1984, state government user charges related to natural resources, parks, and recreation increased from \$275 million (nominal) to \$1,152 million (nominal). These amounts represented 10.5 percent of direct expenditures for service in 1973 and 16.3 percent in 1984. In general Rivlin (1992) also noted that states have strengthened and diversified their revenue sources, especially increasing reliance on fees and charges.

The use of specialized dedicated funds varies greatly by functional area. Fisheries and wildlife, minerals and energy, and forestry programs are the most heavily dependent on other fund resources and federal funds, while soil and water, fire, and parks and

recreation are the least dependent on such funds. State fisheries and wildlife agencies illustrate some of the hazards often associated with heavy reliance on user fees in particular. As stated by Father and Hoekstra (1990):

"The majority of funds available to state agencies are derived from hunters and fishermen either through license fees or excise taxes on equipment that are authorized under the Pitman-Robertson, Dingell-Johnson, and Wallop-Breaux Acts. There is concern that revenues have not kept pace with inflation as many wildlife and fish agencies have experienced substantial declines in real revenue from license sales."

In 1979, the source of 57 percent of total fisheries and wildlife agency budgets was user fees. This declined to 53 percent in 1986 with an increase in state general fund monies largely making up the difference. Recent information suggests that since 1986, this trend may have reversed itself. A recent report by the Wildlife Conservation Fund of America indicated that revenue from other funds and federal funds flowing into state fisheries and wildlife programs increased 37.4 percent from 1986 to 1991. During the same time period, general tax revenue funding for those agencies dropped 11.4 percent (Jones, 1992). As a result, these agencies have attempted to develop new revenue sources and checkoff boxes on state income tax forms, which allow a taxpayer to make a voluntary contribution to a specified program, have been one of the most popular.

As of 1987, 35 states had checkoff boxes for non-game or conservation purposes, up from one in 1977 (Erickson, 1987). The amount contributed via these checkoffs increased from \$3.2 million in 1981 to over \$9.8 million in 1985. These checkoff boxes generally are very successful in the first few years after their passage in raising increasing amounts of revenue for recipient programs. The amount contributed, however, generally stabilizes thereafter if new checkoffs are not added. As the number of checkoffs increase, the amount contributed to each one generally decreases (Erickson, 1987). This factor can be a severe disadvantage if contributions substitute for rather than supplement general fund monies. The existence of checkoff boxes may also distort the focus of recipient programs toward species or projects of high visibility and public interest and away from less glamorous but more ecologically important species or projects. Father and Hoekstra (1990) concluded that, although considered successful in the short-term, checkoff boxes should not be considered a stable, long-term source of program funding.

Various functional areas have employed unique techniques to generate new natural resource program funding. General obligation bonding is a common technique especially for land acquisition. California, Maine, Massachusetts, New York, Florida, Illinois, and Minnesota are among the states that have enacted bonding measures of some sort, the majority for land acquisition. Michigan enacted a unique revenue bonding statute in 1990 to fund intensified forest management on state lands. A characteristic of sources of money from bonding is a steady and known stream of funding over a known period of time. As

stated previously, this is advantageous when matched with program needs that are stable and known over time but are problematic if program needs fluctuate over the bonding period.

Three states have successfully secured for natural resource programs a portion of tobacco taxes -- Minnesota, Nebraska, and Texas. Inter-track parimutuel taxes are earmarked for parks in Illinois; taxes on Bingo support local parks in South Carolina; and lottery proceeds are dedicated to natural resource management in Minnesota and Colorado. To the extent that smoking and gambling patterns remain unchanged, these sources can provide a stable source of program funding in the short-term. But unless these taxes increase to match the rate of inflation, they are unlikely to be a long-term solution to funding difficulties. Many other funding sources share this characteristic, including user fees not indexed for inflation and income tax checkoff boxes as discussed previously. Sales tax and motor fuel tax revenue sources are more responsive to inflation but are also more influenced by the condition of a state's economy. Natural resource programs in Missouri and North Carolina benefit from an earmarked portion of general sales taxes, and six states (Alaska, Iowa, Louisiana, Montana, Ohio, and Texas) fund various parts of their natural resource programs from motor fuel taxes. Maryland and Arkansas earmark portions of boat registration- title fees for natural resource management.

Some of the more unusual alternative sources of natural resource program funding have occur in Florida. A documentary stamp tax provided natural resource programs in Florida with \$144.3 million in 1988 while an auto registration fee on newly arrived residents is used to fund the non-game wildlife program (Arrandale, 1991). In 1989 Minnesota radio stations held a "Get Wild Saturday" charity event to benefit migratory duck programs. "During the three hour broadcast, listeners in [Minnesota, South Dakota, and North Dakota were] invited to participate in fund raising bingo games, trivia contests, radio auctions, and more" (Schara, 1989). Such events may be appropriate to generate a one-time infusion of money into a program but would not be appropriate as a long-term funding source.

The six states studied here establish several patterns regarding state natural resource agency reliance on special dedicated funds supported by either federal or other sources (Table 25). The high variability of federal fund resources over time is evident, as is the relative stability of other dedicated fund resources. Some states are relying more on specialized revenue sources to fund program operations than they were in 1975. Only Washington shows a definitive pattern in the opposite direction. When federal and specialized fund sources are combined, a pattern of increasing state reliance on these funds emerges (Table 26). Washington is the only exception to this pattern.

Managerial Implications

State governments have clearly been creative in seeking out and securing sources of funds other than federal or general fund monies. From a historic reliance on severance

revenues and user fees, the sources of program monies have expanded beyond those directly related to program outputs. This expansion has allowed natural resource programs to tap into larger sources of money which were traditionally the exclusive domain of other state programs or the general fund. The creation of wholly new revenue sources has also diversified natural resource funding sources, but this type of innovation is less exclusive to natural resource programs.

Table 25

Table 26 - Change in State Agency Natural Resource Budgets, General Fund Portion of Agency Budget and Specialized-Dedicated Portion of Agency Budget, by State. 1975 to 1990.

State	Total Budget (percent)	General Fund Portion of Total Budget (percent)	Specialized-Dedicated Portion of Total Budget (percent)	Specialized- Dedicated State and Federal Fund Portion of Total Budget (percent)
Michigan	30	(38)	96	63
Florida	86	24	unavailable	202
Pennsylvania	140	6	155	351
New York	65	(28)	unavailable	330
Washington	67	163	57	38
Minnesota	147	155	214	163
Six States Subject of Study	80	22	unavailable	149

Note: Analysis of real dollars. Parenthesizes contain negative percentages.

Factors which could be contributing to the success of natural resource programs in securing a portion of existing and new revenue sources include increasing interest in the environment, the greater acceptance (by taxpayers) of tax increases that are designated for specific programs, and the desire of legislatures to generate additional revenue without alienating taxpayers. Whatever the reason, state natural resource agencies are becoming increasingly reliant on federal and other funds. Whether this is because of less rapidly growing or decreasing general fund monies or is actually a causal factor contributing to the slower growth or decrease in general fund appropriations, compared to other state programs, is not clear. What is clear, however, is that the search for specialized and dedicated fund resources is an ongoing, intense activity of program administrators.

The forgoing suggests several important considerations concerning the desirability of dedicated fund resources for program managers. To be acknowledged, however, is that individual state circumstances vary considerably from state to state. Consider the following:

Avoid narrow focus for revenue source. Managers should not limit consideration to sources related only to a specific program's outputs. The proportion dedicated to natural resource programs from such unconnected sources is generally much smaller than from connected sources, but may yield much larger amounts of total money.

Match funding to changing program needs. Managers will achieve program stability through the use of dedicated funds only if the source of dedicated fund monies match program demands over time. If program funding demands vary annually in a systematic way, a dedicated fund source should vary in the same manner.

Avoid substitution of funding amounts. Managers can best avoid substitution of dedicated fund monies for general fund monies by very narrowly specifying (possibly in legislation) what the dedicated money can be used for, and by using dedicated fund resources for popular programs with powerful and supportive interest groups.

Relate funds to program benefits. Dedicated funds which closely link program benefits to the those funding the program seem more acceptable to legislators. Such funds, however, may evoke backlash from those charged unless the resulting monies produce identifiable benefits for the targeted group.

Carefully time proposals for dedicated funding. Dedicated fund resources that will generate revenue from wholly new sources are most likely to appeal to legislators during times of fiscal stress. Proposals to dedicate existing sources of revenue will probably be met with great resistance during times of fiscal stress; they will stand a better chance of establishment when economic conditions are positive.

CASE STUDIES OF FUNDING PROGRAMS

The Minnesota Environmental and Natural Resources Trust Fund and the Michigan Forest Finance Authority offer two contrasting views of how innovative programs are developed and administered. Through case studies of these programs, the dynamic nature of major public policy change focused on program funding can be analyzed and insight into general principles for guiding managers toward new funding sources can be presented. The two case examples were chosen because they represent especially new and innovative approaches to stabilizing funding for important natural resource programs at the state level.

Minnesota Environmental and Natural Resources Trust Fund

Trust Program Description

In 1988, Minnesotans voted by more than 3 to 1 in a state referendum to establish the Minnesota Environmental and Natural Resources Trust Fund (MTF). Under the enabling legislation (enacted in 1989), monies are provided for current research projects and contributions are made to the principal of a permanent "trust fund" (originally envisioned as building to one billion dollars) which will serve as:

"A long-term, consistent, and stable source of funding" for "long-term activities that allow the state to preserve its high-quality environment and provide for wise use of its natural resources." (Seefeldt, 1992).

This combination of providing some money for current environmental and natural resource projects and some money for a permanent trust fund, is unique in the nation. As described

in Article XI of the Minnesota Constitution:

"The principal of the environment and natural resources trust fund must be perpetual and inviolate forever, except appropriations may be made from up to 25 percent of the annual revenues deposited in the fund until fiscal year 1997."

Subsequent legislation allowed for full use of 25 percent of annual revenues deposited in the trust fund in fiscal years 1990 and 1991 for funding projects in the 1991-93 biennium; 20 percent and 15 percent of annual revenues deposited in 1992 and 1993, respectively, for funding projects in the 1993-95 biennium; 10 percent and 5 percent of annual revenues deposited in 1994 and 1995, respectively, for funding projects in the 1995-97 biennium; and only interest earned on the permanent trust fund to be used for funding projects in years following 1997. During the 1992 legislative session, use of additional amounts of annual revenue were allowed for capital improvements for parks and trails.

In total during 1991-93, \$14.86 million was available to fund current projects, and to date (February, 1993) \$46 million was added to the corpus (permanent principal of the fund). For the 1993-95 biennium, \$24.5 million will be available for current projects, \$13 million for a variety of new projects, and \$11.5 million specifically for capital improvements of parks and trails. It has been estimated that the corpus of the trust fund will reach \$125 million by 1997 and \$200 million by 2001.

Also in 1988 Minnesotans amended the Minnesota Constitution, removing a prohibition against a state-run lottery. Part of the money generated by the lottery was statutorily dedicated to MTF in the 1989 enabling legislation. This legislation also contained a provision that required dedication to be put to a referendum vote, which if passed, would make it a constitutional dedication. Voters again went to the polls in 1990 and constitutionally dedicated 40 percent of lottery profits for the MTF until the year 2001.

The MTF is administered by the Legislative Commission on Minnesota Resources (LCMR). The commission is comprised of 16 members which include the chairs of various House and Senate committees and other representatives and senators appointed by their respective bodies. In the case of the MTF, these 16 members are assisted by an 11 person Citizens Advisory Committee which advises the LCMR on the strategic direction of future expenditure recommendations, leaving it up to the LCMR to make specific project choices. The LCMR is fully staffed and was created in 1963 to provide background to the legislature in evaluating proposed programs and to make recommendations for appropriations from the Minnesota Future Resources Fund and Oil Overcharge Money (LCMR, 1991).

With the addition of the MTF in 1989, the LCMR administers three programs. The

Minnesota Future Resources Fund provides annual funding for new or innovative natural resource projects. Funding is derived from a dedicated portion of the state cigarette tax which is estimated to yield approximately \$15 million in the 1993 - 1995 biennium. Oil Overcharge Money provides annual funding for projects designed to decrease dependence on fossil fuels. Funding is derived from various state utilities as settlement for past over-charges to state customers and is estimated at \$1 million for the 1993 - 1995 biennium (LCMR, 1991). The MTF provides funding for long-term environmental and natural resource research projects and is funded by a dedicated portion of lottery profits.

Eligible MTF projects fall into seven program areas: recreation, water, education, agriculture, forestry, wildlife, land resource management, and research. In the first funding round, water projects received the highest proportion of funding, 32 percent of total funds. Wildlife and land resource management each received the next highest proportion of total funds at 18 percent each. Education and recreation each received about 11 percent; agriculture received about 8 percent; and forestry received about 2 percent.

Legislation establishing the trust fund specifically excludes projects involving municipal water pollution control, hazardous waste disposal facilities, solid waste disposal facilities, and costs associated with the decommissioning of nuclear power plants. A sampling of the largest projects funded in the first round include development of base maps for the state which include soils, topography, land use, forest type, and other natural resource related information, a Minnesota county biological survey, a county geologic atlas and groundwater sensitivity mapping, and rails-to-trails acquisition and development. Projects for the second funding round will be approved by the 1993 legislature.

Project proposals can come from public educational institutions, government departments, local government, or private organizations. In the first round of funding, however, state agencies dominated the list of recipients. Of the 30 1991-93 funded projects, 28 of the recipients were public or quasi-public agencies. Of the remaining two, one project went to the University of Minnesota and one to the Science Museum of Minnesota. The largest public agency recipient was the Department of Natural Resources, receiving \$5 million in trust fund monies or 34 percent of total funds appropriated. Other recipients of large portions of trust fund monies in the first round were the Office of Strategic and Long-Range Planning (\$2.5 million), the Board of Water and Soil Resources (\$2 million), the Pollution Control Agency (\$1.8 million), and the Minnesota Geological Survey (\$1.4 million).

Enabling legislation contains several provisions designed to prevent substitution of trust fund monies for existing agency funding. A subsection of the enabling legislation states that:

"The trust fund may not be used as a substitute for traditional sources of

funding environmental and natural resources activities, but the trust fund shall supplement the traditional sources, . . . "

An additional section states that:

"Persons who are employed by a state agency to work on a project and are paid by an appropriation from the trust fund or Minnesota future resources fund are in the unclassified civil service, and their continued employment is contingent upon the availability of money from the appropriation. When the appropriation has been spent, their positions must be canceled and the approved complement of the agency reduced accordingly."

These provisions indicate that trust fund monies must not be used as a substitute for existing funding and that agencies should not use trust fund monies to expand their permanent personnel numbers. However, the provisions have not been entirely successful. Several persons interviewed as part of this study stated that it is increasingly difficult to maintain general fund monies within departments or divisions that have received MTF monies. Legislators do not seem as compelled to fund state agency projects, assuming that the LCMR will provide the necessary funding out of the MTF. The only way this has been kept in check is the specificity of the types of projects eligible for MTF funding and the prohibition against funding for on-going operations.

Economic-Political Context

The political environment of Minnesota is somewhat unique, although often considered usual for many mid-west/mid-central American states. As the center of the progressive political tradition, the dominant politics in the state tend to be somewhat fiscally conservative and socially liberal. This fiscal conservatism, however, is decidedly different than the fiscal conservatism of right wing Republicans. Minnesotans are strongly supportive of big government programs that address a wide variety of societal problems, if those programs are proven to be both effective and efficient. Regular public discourse on the need to "make things better" are common to ensure this result. Distrust of government is less severe in Minnesota than in most other states of the nation.

The names of the state's two political parties reflect the uniqueness of Minnesota politics -- the Independent Republican (IR) party and the Democratic Farmer/Labor (DFL) party. Traditionally, the DFL party has been in solid control of both houses of the legislature and local government. Politicians of national prominence from Minnesota have included Walter Mondale, Eugene McCarthy, and Hubert H. Humphrey.

A number of unique government arrangements have resulted from Minnesota's progressive political traditions. A form of regional government and revenue sharing between the central cities of St. Paul and Minneapolis and their suburbs was created in

the 1960's. Minnesota was one of the first states to sanction the creation of Health Maintenance Organizations (HMOs), now a popular form of medical care arrangement nationwide. Finally, a state-wide health plan intended to provide every Minnesotan with a minimum level of health care coverage was enacted in 1992. As a state steeped in a tradition of innovative government action, creation of the MTF was viewed as almost routine.

The tendency toward government largess in Minnesota has been greatly aided by a strong and diverse economy.

"Real economic growth in Minnesota has substantially exceeded the national average. When changes in GSP are measured on a real per capita basis ... Minnesota ranked eleventh for the 1963 - 1986 period. Personal income growth in Minnesota also exceeded the national average." (Minnesota Economic Resource Group, 1991)

Compared to many other states, Minnesota's economy is less influenced by national economic booms or busts primarily because of the diversity of its economic base. Agricultural land makes up half of Minnesota's land area and production on these acres is about evenly split between crops and livestock. Mining was historically a major component of the economic base before contracting severely in the 1980's. Forest products industries, in contrast, have grown spectacularly throughout the 1980's and into the 1990's. Other industrial sectors important in Minnesota are computer industries and health industries, especially the production of medical supplies and devices.

Retail and wholesale trade, transportation, communications, and utilities contributed 27 percent of Gross State Product (GSP) in 1987 while service industries contributed 33 percent. The real feather in Minnesota's economic cap has been the strength of its manufacturing in a variety of industry types. From 1977 to 1987 manufacturing employment increased 13 percent in Minnesota and decreased 3 percent nationally. The six highest growth industries during this period were instruments, furniture, printing and publishing, rubber and plastics, computers, and auxiliary establishments. Productivity growth in Minnesota also exceeded the national average by a considerable margin during the 1977 to 1987 period (Minn. Econ. Res. Group, 1991). The largest Minnesota companies have been mostly home-grown and have an unequaled record for philanthropic giving.

This relative economic stability is not spread out evenly across the state. Approximately one-half of the state's four million people live in the Minneapolis/St. Paul metropolitan statistical area and, consequently, economic growth is concentrated there. With the exception of the forest products sector, all of the fastest growing industries are located in and around these twin cities, in a corridor extending southeastward to Rochester, and north-westward to Saint Cloud. This has led to a long standing and strong

rivalry between metropolitan legislators and "out-state Minnesota" or "greater Minnesota" legislators regarding the distribution of state monies. The rivalry is particularly strong between legislators representing Minneapolis and St. Paul and legislators from a region in northeastern Minnesota called "the Iron Range", which reflects its early history as the center of iron ore and taconite mining in the country. This rivalry partly explains the large number and variety of state programs and initiatives aimed at encouraging out-state development and environmental improvement.

State residents also have a strong interest in and attachment to the state's land and water resources stemming from the state's rural and ethnic history. It is very common, and indeed something people aspire to, for Minnesotans to live and work in the Twin Cities and have a cottage on one of the state's many northern lakes. This is a long established pattern and helps explain the long standing interest in the environment and natural resources.

Development of Proposal

The idea for the Environment and Natural Resource Trust Fund apparently originated with one person, namely Representative Willard Munger. Mr. Munger is a long serving DFL representative from Duluth. His district is the center of "the Iron Range" and suffered enormously in the late 1970's and early 1980's by severe contraction of its then major industry, mining. More recent growth in forest products industries have improved the economy of the region. Mr. Munger has long been recognized as the leading environmentalist in the state House of Representatives. The Range is heavily dependent on the economic use of natural resources, but, like his constituents, Mr. Munger has a deep reverence for the Range's land and water resources.

Mr. Munger's interest was in establishing a permanent trust fund to be used exclusively for long-range projects or research which would contribute to the long-term quality of Minnesota's natural resources. Funding for on-going programs was to be specifically forbidden as was funding for money eating environmental projects such as hazardous or solid waste site clean-ups, water treatment plants, and costs of decommissioning nuclear power plants. Funding of the trust fund was to come from dedication of one-half of one percent of income and sales tax collections and part of state cigarette taxes. Dedication of these taxes was to continue indefinitely until the corpus of the fund reached one billion dollars where it would remain in perpetuity, generating returns to be used for project funding.

Mr. Munger introduced a bill to establish the trust fund in 1986, the second year of the 1985-86 biennium (the Minnesota legislature meets for five months each year and operates on a biennium basis.) It received little attention; other legislators lacking enthusiasm for yet another dedicated fund. Potential beneficiaries of the fund, such as environmental groups and state agencies, had not been deeply involved in its development

and therefore needed time to study the idea. Besides, their legislative agendas for that session had already been set when the bill was introduced. During 1986, Mr. Munger had also pushed hard for constitutional rather than statutory dedication of the fund, a prospect even more unpalatable to many legislators.

Several factors seem to have contributed to the timing of the bill's introduction. In 1986, the legislature received budget projections for the following biennium that suggested revenue shortfalls would occur requiring either new taxes or reduced spending. Projections for the 1989-1990 biennium were even worse. At that point Mr. Munger, engaged existing public political support for the bill and the support of a newly elected governor, namely Rudy Perpich. In conversation, Mr. Munger simply says "the time was right" to introduce the bill. It was two years later, in 1988, that Munger's efforts on behalf of the trust fund would pay off.

Enactment of Law

In 1987, Mr. Munger again introduced a bill proposing an environmental trust fund (identical to the bill previously introduced). It was in 1987 that Mr. Munger actively began to court state government agencies and environmental and natural resource interest groups for support. Support was widespread but somewhat mixed in intensity. Some powerful environmental groups objected to tying up so much money, they wanted it spent now! Similarly, some legislative leaders wanted the money used immediately and strongly resisted dedication of monies which now went into the general fund. Opponents of the bill, educational and social service interests and the metropolitan legislators to whom they had the closest ties, lobbied hard against the proposal believing that it would take money away from programs in which they had an interest. Throughout, the governor was very supportive.

Within this atmosphere, prospects for the bill appeared dim until several unrelated events occurred. Faced with negative budget projections, the 1987 legislature enacted a law which abolished a large number of previously statutorily dedicated funds, including certain natural resource funds. As a result, negative, lukewarm, or tacit support for the proposed trust fund turned into strong and active support as a way to regain some dedicated funds for those that were lost. Also related to the pending budget shortfall, the legislature embarked on a determined search for a politically painless way to raise additional revenue. This search resulted in proposals for a statewide lottery despite constitutional provisions prohibiting it.

These forces led, in 1988, to two referendum questions (both passed) on a statewide ballot. One involved removal of the prohibition against state sponsored gambling and one established an Environment and Natural Resources Trust Fund, the purpose of which was constitutionally established without a source of money being established. Despite the statewide referendum, opposition to the creation of a state

sponsored lottery was strong and broad-based. With possible defeat of the bill to authorize the lottery and lack of assured funding for a politically popular trust fund, legislative leaders decided to combine the two by dedicating a portion of lottery revenues for funding the MTF. Mr. Munger resisted this move, even though his allies were convinced that this was the only way of establishing the lottery and funding the MTF.

Faced with the possible loss of any dedicated source of funding for the MTF, Mr. Munger compromised only hours before the bill was passed. The compromise first involved a change of the funding source from income, sales, and cigarette taxes to lottery revenues. A second element involved change from a one billion dollar goal for the fund to a sunset limit of 11 years, when new legislation would be required to maintain the source of funding. A third element of compromise involved the percentage of lottery revenues the MTF would receive, revised downward from 50 percent to 40 percent. In exchange, Mr. Munger extracted a provision that these changes would be put to a state-wide referendum in 1990 which was passed overwhelmingly. His ability to extract this provision, ironically, was directly related to the previous session's abolishing of a number of natural resource related funds and the furor this created within the natural resource community.

Mr. Munger's insistence on constitutional dedication of funds for the MTF was an element of the fund proposal that was most strongly resisted by legislators. The reasoning behind this insistence became clear in 1991. The 1990 statute which directed that 40 percent of lottery profits should go to the MTF also dedicated (a) 35 percent of profits to pay off general obligation bonds approved in a 1990 bonding bill and (b) 25 percent of profits to the Greater Minnesota Corporation (GMC) (a public/private partnership designed to encourage long-term economic development and job creation in out-state Minnesota). Personnel problems and unfavorable financial disclosures in the GMC resulted in its loss of the dedicated source in 1991. The amount dedicated to bonding was also rescinded in 1991. Both shares were redirected to the state general fund. Despite the MTF's constitutionally dedicated fund source, the current enabling legislation can be changed which would most likely result in legal challenges.

Implementation

Constitutional dedication of the MTF and its funding source still left considerable opportunity for legislative action. It was quickly agreed that LCMR should be the administrative body of the MTF, although originally the administrative body was envisioned as consisting of a combination of state officials, governor's appointees, and lay people. The next question addressed by the legislature concerned the proportion of money that would be used for current projects from 1990 through 1997. The 1988 constitutional amendment authorizing the MTF stated that up to 25 percent of annual revenues could be used for current projects until 1997. The battle between forces that wanted the money used now and those that wanted the corpus built up as quickly as possible eventually lead

to a compromise in which 25 percent would be spent in the first biennium with a declining share in subsequent bienniums. This solution was not overly contentious among interested parties.

Real controversy arose, however, over the establishment and role of the Citizens Advisory Board (CAB), an entity designed to work with LCMR members in the selection of projects for current funding. Again Mr. Munger lobbied hard for active involvement of the CAB in not only setting strategic direction for the types of projects funded but also in actual project selection. Mr. Munger, one of the 16 LCMR members, feared that without a strong CAB role, project selection would be dominated by the political rather than the scientific desirability of projects. This proved to be a well-founded fear in 1992, when the legislature approved an increase in the amount of MTF specifically for projects related to parks and trails. In a end the CAB was established, but its role was limited to setting strategic direction for MTF funding with actual project selection reserved for the LCMR.

Experience with lotteries nationally suggests that the most revenue is generated during the first year of existence followed by a significant decline in the second year, some improvement in the third year, and a gradual leveling at a fairly steady and reliable level. In Minnesota, this pattern was avoided due to the timing of the introduction of several types of games. The first year of the lottery, only scratch-off types of games were introduced. The logistics of creating on-line types of games, where gamblers pick numbers that are electronically entered in the game at the point of purchase, necessitated a delay in the introduction of these types of games until the second year. Such on-line games have fewer but much higher prizes and appear to encourage additional gambling without supplanting scratch-off type gambling. On-line games were as popular as scratch-off games and lottery revenues continued to increase in the second year.

Concerns about the future of the MTF have begun to surface and are only now starting to be addressed. Currently, revenues are on a plateau and may actually decline in the future due to the expansion and success of Native American sponsored gaming in the state. Despite early profits which exceeded all original estimates, it has become clear that if the lottery is able to maintain revenues at current levels, contributions to the MTF will result in a corpus of approximately \$200 million in 2001, considerably below the original goal of one billion dollars. Concern has also been expressed that funding for other statutorily designated funds related to natural resources (primarily the Minnesota Future Resources Fund) may also be in jeopardy, at least partially because of the existence of the MTF.

Michigan Forest Development Fund

Development Fund Description

Michigan's Forest Development Fund (FDF) was created by Michigan P.A. 280 of

1990. The primary purpose of the fund is to:

"Create a permanent and reliable future source of funding for long-term investment in more intensive, cost-effective management of state-owned forest resources." (Forest Management Division 1987)

A number of factors contributed to the need for additional sustained funding. For example, funding for forest management and regeneration was being paid for almost entirely by timber receipts. These receipts resulted from harvest of largely second-growth timber subject to minimal management throughout its rotation. This management regime is described by Michigan officials as a "low level development trap," namely poorly managed stands producing substandard revenues insufficient to replant and effectively manage and tend current or future stands and improve their growth and quality. Furthermore, the state's Forest Management Division (FMD) lacked the amount of resources necessary to accomplish silvicultural recommendations, and the timber sale receipts produced by the Division were highly variable from year to year due to changes in demand, weather, and a host of other factors. On average the state spent only 40 cents per acre per year on its state forest system lands. Industrial forest owners consider three dollars per acre per year to be a minimum standard for forest management investments (Forest Management Division, 1987). A huge backlog of acres needing treatment had also developed. This might not have been considered a problem in an environment of low timber demand. However, the forest products industry had expanded significantly in Michigan over a period of 10 years, increasing demand and stumpage prices.

Michigan experienced severe contraction of its manufacturing base in the 1980s. The forest products industry was the only bright spot, prompting the governor at the time to "target" it for special state attention. The director of the state's Forest Management Division had long championed the idea that the state forest system was a valuable asset and should be used more effectively to promote state economic development. The Forest Management Division became the lead agency for the governor's target industry development effort and proposed the FDF as one part of it. Additional industry expansions appeared likely in the future compelling the Division to seek a funding method that would allow it to continue producing its proportionate share of future timber supplies. Tapping into general fund monies was politically impossible.

The FDF is administered by the Forest Finance Authority (FFA) which is organizationally located in, but operating independently from, the Michigan Department of Natural Resources. Members of the authority include the state forester, who serves as Executive Director, the state treasurer, the director of the Department of Natural Resources, and three governor's appointees. The first meeting of the FFA took place on October 2, 1992. The authority is empowered to sell revenue bonds to intensify management on highly productive state forest lands. These are typical revenue bonds with one exception, repayment of the bonds will not necessarily come directly from the

project being financed but instead from timber revenues produced by any lands administered by the Authority, not just those treated under this program. To provide for this arrangement, the Authority is vested with cutting rights on all state tax-reverted lands and control of all timber revenues from those lands.

Bonds are sold in \$5 million dollar increments every three or four years for a total of fifteen years or \$20 million. It is anticipated that over this time period, an internal revolving fund will be built up from which management practices can be paid without resorting to further bonding (Forest Management Division, 1990). Thus, the revenue bonding will function as a jump start to improve management and enhance asset yield -- an investment in productivity improvement. Farmers borrow and invest in productivity enhancing technology as do manufacturing and service oriented firms. The FDF is based on the same principle applied to a public agency.

As the primary state public landowner in Michigan, the Forest Management Division of the Department of Natural Resources is the sole recipient of FDF monies. Specific language in the enabling legislation prevents diversion of FDF monies to other divisions or other non-specified uses. In addition the fact that the bonds will be sold and traded on the open market is an important deterrent to diversion of monies to unauthorized uses or diversion of monies for management on lands which would produce less lucrative returns. Through operation of the market, there will be two levels of oversight -- the administering body (FFA) and bond brokers and traders.

Distribution of FDF funds within the Division is guided by the existing state forest planning process and a detailed economic evaluation of management investment opportunities. This economic evaluation was completed prior to efforts to gain enactment. Within the economic evaluation estimated rates of return for various practices such as conifer release, hardwood thinning, and use of genetically superior planting stock were calculated for stands within various productivity classes. Activities on stands yielding the highest returns will be undertaken with FDF monies. Treatment of stands with the lowest, but still positive, rates of return will be undertaken as monies become available through the regular timber management fund -- the fund that currently finances all timber management within the state system.

The 1990 Forest Development Fund five year plan (1990) gives some indication of exactly what types of forestry investments have the highest rates of return in Michigan. Red pine planting is expected to receive 48 percent of bond monies in the first five years. This planting is to occur on highly productive sites where red pine has been harvested and on sites that are currently in jack pine, a less valuable species. These regimes pay out at 4 to 5 percent in real terms. Northern hardwood timber stand improvement cuttings will receive 35 percent of bond monies in the first five years. The remaining 27 percent of bond monies will be spent for a variety of practices such as pine release, saratoga spittlebug alternate host removal, control of redheaded pine sawfly, and pruning of white

pine poles. Throughout the first five year period, the total number of acres treated remains fairly constant from year to year (Forest Management Division 1990).

The Forest Management Division has gone to great lengths to emphasize that the FDF is a financing arrangement only. The existing forest planning process identifies possible investment opportunities based on existing planning guidelines with FDF criteria guiding selection among those opportunities. The planning process is based on the concept of "key value management," which operationalizes the concept of multiple use management and separates incompatible uses and users. Large areas, generally corresponding to operations inventory compartments averaging approximately 2,000 to 2,500 acres, are assigned one of four key values based on the condition and inherent productivity of the land base, area demand for various outputs, and state-wide goals for provision of various outputs.

The Division has identified four key values, namely intensive vegetative management (generally for timber or wildlife production), developed recreation, naturalistic values, and mixed use. There is no restriction on what management activities can take place within each area as long as they do not interfere with the key value. Where there is a conflict, the designated key value guides the decision concerning management activities. This planning process is designed to meet state-wide goals regarding maintenance of forest vitality, diversity, and response to user demands without becoming so micro that the larger picture is lost. The FDF will invest in intensive management practices only where intensive vegetative management is the designated key value or in portions of mixed use zones where intensive management will not seriously impact other values.

Economic and Political Context

The political environment in Michigan has changed considerably in the last decade. During the 1970's both houses of the legislature were controlled by the Democratic party and the governorship was held by a moderate Republican. This proved to be a remarkably stable and productive relationship that was helped, no doubt, by a strong and stable state economy. In 1982 the governor declined to run for a fourth term. The Republican candidate in the election reflected a dramatic shift within the Michigan Republican party from the moderate wing to the conservative wing, mirroring the situation nationally. The Democratic Party was also undergoing a more moderate shift from a liberal orientation to a progressive orientation which believed in strong and activist government, good fiscal management, and encouraging individual responsibility.

In the 1982 election, the Democratic Party won control of the Governor's Office and maintained control of both houses of the legislature, although their majority was reduced. This Governor's first term was dominated by economic concerns, championing a number of bold, innovative approaches to diversifying the state economy and improving its

economic future. Part of this program was creation of a target industry development program directed at forest industry, an industrial sector which had begun a substantial expansion across the Upper Midwest.

The aggressive and innovative tone of Governor Blanchard's first term was chilled in 1985 when, as a result of two recall elections, the Democratic majority in the Senate was lost and became Republican controlled. Despite the need to temporarily raise income taxes to deal with a revenue shortfall during the 1981-82 recession, Governor Blanchard won reelection in 1986 and enjoyed a considerable Democratic majority in the House. Democratic control of the Senate was restored but with only a one-seat majority. This slim margin changed the tone of Governor Blanchard's second term, being much more business as usual and much less innovative or progressive. In 1990 Governor Blanchard lost his bid for reelection to a very conservative Republican contender. The Democratic party still held a majority in the House, and as of 1993, neither party holds a majority in the Senate. Suffice it to say that since the 1982 election, the political climate in Michigan has been very volatile.

Historically, Michigan residents have enjoyed above average levels of per capita income and per capita income growth and lower levels of unemployment. This was largely due to the robust condition of the state's dominate industry, automobile manufacturing. Prior to the 1981-82 recession, the automobile industry suffered during recessions but always rebounded with greater vigor, much to Michigan's advantage. Beginning in the late 1970's, however, this pattern was broken as U.S. auto companies lost market share due to increased competition from foreign manufacturers. Consumer perceptions of low quality American products at premium prices contributed to erosion of market share. At the same time auto union influence and power was flagging, ill equipping them to deal with the inevitable wage concessions and job losses which resulted. Due to the dominant position this industry played in Michigan, state residents and the state economy suffered.

Difficulties in the auto industry caused state unemployment rates to soar and for the first time in decades state per capita income fell below the national average. Initially the burden of industrial restructuring fell heavily on blue collar, unskilled, and semi-skilled workers, workers least equipped to adjust to economic dislocation. At this time job creation in Michigan manufacturing industries mirrored the national experience, first stalling and then contracting as manufacturing industries reduced workforces in an attempt to become more competitive. The only industrial sector in Michigan which bucked this trend in the 1980's was the forest products sector.

The influence of the auto industry reverberates throughout the Michigan economy, despite its concentration in the Detroit metro area and a band extending northwest through Flint, Saginaw, and Bay City known as the auto corridor. Other major sectors of the Michigan economy independent of the auto industry, include furniture and office products manufacturing and tourism concentrated along Michigan's "gold coast", the Lake Michigan

shoreline from the southern border north to Petosky.

Michigan has a considerable endowment of natural resources. The state is surrounded by four of the five Great Lakes and has many inland lakes. Fishing and hunting are very popular and these interests have formed one of the most powerful natural resource interest groups in the state. Farmland is concentrated in the lower third of the lower peninsula with forest land concentrated in the northern two-thirds of the lower peninsula and the upper peninsula. The Forest Management Division of the Department of Natural Resources is responsible for managing approximately 3.8 million acres of commercial forest land or about 21 percent of the Michigan total. The total amount of commercial forest land in Michigan exceeds that of all but four of the fifty states (Forest Mgt. Division, 1987). This natural endowment, the forest industry expansion in the state, and Michigan's economic difficulties set the stage for development of the Forest Development Fund.

Development of Proposal

The basic idea for the Forest Development Fund began, in simplest form, with publication in 1982 of a book focused on Michigan's economic and fiscal situation (Porter 1982). Written by several prominent economists, the book was published soon after the election of a Democratic governor after a long period of Republican Party governance. A segment of the book was devoted to natural resources and contained within it the basic idea for some form of investment oriented funding mechanism to improve forest management and growth (Porter 1982).

"All of the above discussion of the rate of harvest, however, fails to go to the real long-run problem of Michigan's state forests. Even those acres whose "key value" will be timber production are not, after harvest, being converted to fully managed stands. To do that would require a budget not just marginally greater but many times the present legislative allocation for reforestation and timber stand management."

"Perhaps a crisis-responsive legislature is inherently unable to think in terms of investments that pay off in half a century, no matter how profitably. But as long as present investment is tied to present receipts, the result is a "low-level trap" for Michigan's state forests. The only way out may be for the DNR to explore other avenues for funding. Long-term timber management by, and sale contracts with, private forestry firms is one possibility. Or, if it is important to keep the state forests under public management, the possibility of DNR issue of long-term indebtedness could be explored. The danger with both routes is that nontimber uses of the forests will be subordinated to the search for timber profit. Nevertheless, until something is done, Michiganders are implicitly deciding not even to examine the potential for productive use

of a large part of the state's land area." (Porter, 1982)

Through largely informal discussions with a number of individuals, the idea of using revenue bonding as the mechanism for an investment-oriented forest management fund emerged. Primary participants in this development phase included the state forester, an influential forest products industry plant manager, a politically appointed member and a staff member of the newly created Governor's Commission on Jobs and Economic Development, and several professors at the University of Michigan and Michigan State University.

Several additional factors also contributed to a strong interest in the idea of a development fund. The newly elected Governor had run on a platform of job creation and state economic diversification in response to severe contraction in the state's dominant industry, auto manufacturing. Inclusion of politically appointed analysts with the Commission on Jobs and Economic Development in the informal development group strongly established the link early on between the new Governor's goals and the FDF. It was also during this time that forest products industries were undergoing rapid expansion in the state creating high paying manufacturing jobs and increased timber demand.

Within this environment the state forest system had increasingly valuable timber resources in which harvest had been considerably below net growth for years. Ability to increase harvest in response to increased demand, however, was limited by the low-level development trap discussed earlier, and the fact that the forest management fund (FMF), into which state timber receipts were placed was increasingly being used to pay for other Forest Management Division programs unrelated to timber harvest and management. The FMF was a restricted fund but had weak statutory restrictions against diversions to other uses. Timber receipts had been rising for several years prior to 1982, making this a convenient target for funds by the legislative and administrative units (e.g., DNR Director's Office). As a result, general fund monies were removed by the legislature from Division's fire, recreation, and other nontimber programs and replaced with FMF monies by the DNR Director's Office in violation of the funds original legislative intent.

As early as 1978, state revenue projections indicated a worsening state fiscal situation prompting state forestry officials to begin a search for alternative funding mechanisms. Clearly, general fund monies could not be relied upon to fund increased investment on state forest lands, especially the long-term type that was needed. Revenue bonding requires a fairly predictable revenue stream that can be relied upon to produce a certain rate of return. Consequently, the next stage of development entailed a detailed and highly technical analysis of exactly what rates of return could be earned on various sorts of "forestry investments" and how many state forest acres existed upon which those investments could be made. In fact when the Michigan Department of Treasury was approached about the revenue bonding idea, they refused to even discuss it until this analysis was completed. This necessity created the first opportunity for a serious check.

The state forester and a forest planner were the only two economists employed by the Forest Management Division at the time and their duties did not afford time to undertake a project of this magnitude. It so happened that at this time a forest entomologist who had worked many years in the field was looking for a position in Lansing and a greater career challenge. This individual was selected to head up the economic analysis project with technical guidance and sense of direction provided by the state forester. Very strong knowledge of population dynamics and associated analytic methods made this less of a switch than it might at first appear. Another opportune event (but not entirely random) also occurred at this time. An innovative Forest Service economist with great skill in creating user-friendly computer programs, was transferred from Durham, North Carolina to East Lansing, Michigan. This individual created the computer program used to project accurate cost and revenue figures and which would later be used to track investments and provide program oversight in the implementation stage.

Another action taken within the development stage that would later prove crucial was the manner in which raw data for the report were amassed. The Forest Management Division had an excellent computerized inventory system but did not rely on it exclusively as a data source. Extensive field work was undertaken not only to increase the accuracy of the cost and revenue figures but also to gain the support of technical managers who would eventually be responsible for implementation. Thus, cultivating future implementors' understanding of and support for the idea started in the early development stage.

The first bonding expert to become involved in the development of the FDF was employed by the state Department of Treasury. This individual developed the initial financial structure of the FDF and worked closely with others on development of a technical document describing how the FDF might be structured and implemented. It was also at this time that the first group of people outside of state government became involved. At the request of the Governor's Forest Council, analysts at a major land-owning forest products company were asked to check the economic analysis. These individuals regularly made investment decisions of the type that would take place within the FDF program. This examination by a private company with relevant investment experience greatly increased the credibility of the proposal. On December 30, 1986 (one month after reelection of the Governor) the document describing the proposed FDF was completed and released by the Forest Management Division, Department of Treasury, and the Governor's Commission on Jobs and Economic Development.

Enactment of Law

The enactment stage involved both additional technical work and widespread efforts to gain support for the proposal. These efforts went on simultaneously but the additional technical work was concentrated early in the enactment stage with support building activities concentrated late in the enactment stage.

The technical analysis documented the physical, economic, and fiscal viability of the FDF but did not include legal details concerning the bonding arrangements. It was widely acknowledged that this type of revenue bonding was very unique and would require considerable ingenuity to create a product that would be accepted by the investment community and not carry a risk premium that would increase interest rates beyond levels that could be supported by the chosen investments. By this time, the state bonding expert, who had worked out the preliminary fiscal details of the FDF, had accepted another position out-of-state and, therefore, was unavailable to assist in further efforts. He did, however, suggest an individual who was executive vice president of one of the state's leading financial institutions. With the support and encouragement of the state and deputy state treasurer, the state forester and chief author of the technical report began working with this individual and a revenue bonding expert in the firm.

Creating the legal foundation for the FDF presented several special challenges. Agreement was quickly reached that the FDF should be structured as an enterprise fund, an arrangement that had a tremendous stabilizing effect in how the bonds would be viewed by the bonding community. It was also decided that the best governing structure for the FDF was an authority of some type. Such a structure would insulate decision-making, as much as possible, from administrative and political pressures. This arrangement also took any expenses off budget. Several existing authorities were considered, but creation of a new authority was selected so a close link could be maintained with biological managers, upon whose decisions the success of the program depended. Due to efforts in the development stage, most state forest managers understood and were supportive of the FDF idea.

A second challenge involved how to insulate FDF monies from diversion to other purposes (or from the perspective of bond buyers, how to insure the money would be spent to avoid default on the bonds) and how to insulate bondholders from state fiscal downturns. Establishment of a separate Forest Finance Authority (FFA) solved part of this problem but there were still concerns since the FDF and the FFA which would govern expenditures from it, would only be statutorily dedicated and established, respectively, leaving open the possibility of raiding.

A third challenge involved establishing some type of security for the bond principal. General obligation bonds are secured by the full taxing authority of the state and revenue bonds are usually secured by the value of the base asset upon which the revenue stream is generated. The base asset of FDF revenue bonds was state forestland, title of which is held in trust for the citizens of the state. The solution to this challenge turned out to be doubly beneficial. The Forest Management Fund, the statutorily dedicated recipient of timber receipts, was selected to secure the bonds. Monies flowing into the FMF were projected to exceed bonding monies by 6 to 1, thereby reducing uncertainty for bond holders and making the bonds more saleable and less risky. This placed responsibility for maintaining the revenue stream squarely on forest managers. This arrangement also

reduced another source of uncertainty for forest managers -- the threat that increases in FDF monies would be offset by decreases in FMF monies through additional diversions to nontimber programs. By vesting cutting rights on state forest lands to the FFA, both funds were legally protected.

The final stage of outlining the technical details of the bonding arrangement was the drafting of a bill for introduction in the legislature. For the first time in the process, political expediency became important. Final details were worked out and the bill was drafted from November 1987 through 1988. The governor had made forestry a major part of a target industry development program in his first term and wanted to show some concrete results from this program in his second term. This bonding bill would provide some concrete results -- an absolute necessity since the political tides seemed to be turning in the state.

It became clear in 1988 that the governor wanted to announce the FDF in the January, 1989 State of the State address. Despite the strong support provided by the governor's office throughout the process up to this point, it was clear their impatience was growing. The Forest Management Division's desire for a technically viable and sound proposal was running up against the governor's office's desire for a politically expedient proposal. Legislation would have to be drafted for announcement in the State of the State address to avoid the real risk of retraction of the governor's support. After a flurry of last minute activity, the legislation was ready and announced by the Governor in January, 1989.

The proposed structure of the FDF did not engender opposition from the legislature since their power to reduce general fund monies in nontimber programs remained untouched and they were unaware of the proposal at this time. By this time, no general fund monies were appropriated into the FMF so there were none they could take away. Senior managers in the DNR, however, reacted negatively, but not strongly so (their response remained apathetic for the most part) for three reasons. For several years prior to this, they had budgeted money from the FMF to nontimber programs which would no longer be allowed. They also wrongly feared this arrangement somehow threatened ownership and control over state land, transferring sovereignty to the FFA as trustee for the bond holders.

Finally, the director in particular saw this as a way to fund everything in the Department, a hope that, when dashed, did not predispose him to strong support. A change in directorship had occurred in 1987, from a traditional resource management oriented director (trained as a wildlife biologist) to an environmental protection oriented director more concerned with pollution control and noncommodity production on state lands. The Director's Office also became much more centrally structured under this director and there was little appreciation for the state forester's continued independent behavior, a *modus operandi* long established. A new position established in the Director's Office at this time was the legislative liaison, the only person that was to have contact or

approve contact by agency employees with the legislature. The Director's Office's concerns were never fully overcome, but the fact that the bonding people were widely respected and had strong political connections was the key to preventing any overt opposition and gaining their grudging acceptance. The fact that this had been identified as a Governor's initiative made all the difference as did the fact that state and agency finances were approaching a crisis situation.

Efforts to build support for the FDF also began in the enactment stage. While final details of the bonding arrangement were being worked out, a number of interest groups, other DNR divisions, and legislative aides were contacted and the offer made to explain the FDF concept and progress to date. As a result of this invitation, while the state forester was busy with the bonding people, Director's Office, and legislature, the primary author of the proposal document talked endlessly about the proposal to everyone who would listen. Simple and straightforward information sheets were also printed up.

Following publication of the report describing the proposal, efforts were immediately renewed to make sure state forest managers were firmly on board. Some opposition did develop when it became clear that the FDF might actually get enacted. Most of the complaints were that field personnel were overworked already, how could they possibly do more. This was an unwarranted concern since the FDF would not affect most division personnel's workloads, it would simply allow more of their prescriptions to be carried out, largely through the use of additional semi-state or private personnel.

Many presentations were made but little significant opposition developed initially. The one exception was the Wildlife Division of the DNR. This Division was deeply suspicious of the whole idea, fearing state land management would change drastically and state forests would become giant tree farms devoid of wildlife value. Their scrutiny of the proposal became intense when they realized the Forest Management Division had discovered a way to fund it. This opposition was overcome through persuasion and the addition of language in the final bill that reinforced the fact that the state planning process would be unaffected by the FFA and FDF investments would occur within planning guidelines.

Efforts early in the enactment phase to gain Director's Office support focused on a deputy director -- the individual responsible for supervision of the state forester and answerable to the director. This individual had worked in this position for some time and, unlike the newly hired director, respected the state forester and his 15 year effort to improve management of the state forest system. While the deputy director was unable to overcome the apathy within the Director's Office without the assistance of the bonding experts, it is widely acknowledged that this individual took a hard line, refusing to bargain, and forced the more militant interest groups to back down and not oppose the bill.

Strong natural resource interest groups exist in Michigan, but state forest managers did not include them in proposal development, fearing the core elements would be jeopardized. There was no detailed strategy regarding how to gain support from these groups. There was virtually no interest in the proposal early in the enactment stage from interest groups, perhaps because they didn't believe (a) the Forest Management Division could find a funding source, (b) the legislature would never pass such an innovative proposal, or (c) the proposal was not significant enough to change their existing legislative agenda.

Tension with interest groups started to mount only after the FDF bill passed the state House of Representatives. Major opposition developed over interim procedures that would apply until the FDF was fully up and running and the potential impact the FDF would have on the established state forest planning process. The proposed bill clearly specified that FDF investments would be made within planning guidelines and that the FFA would have no influence over the existing planning process. One of the principal participants at this stage believed the interest groups didn't really understand the proposal and couldn't believe their interests wouldn't be damaged in some way by it -- despite the fact that they could find nothing in the bill to suggest this. Failing to find anything of substance the interest groups could object to, opposition was largely based on factors unrelated to the FDF bill.

Choice of a legislative sponsor for the bill was partially based on the reality that little visible opposition or support surfaced in January 1989 when the FDF proposal was announced. After some delay, a junior member of the house was selected. The person had strong ambitions for a seat on the house agriculture and forestry committee, an interest in forestry (despite the fact that his district had little state land and no forest-based industries), and the background to understand the FDF proposal.

Strategy considerations for the introduction of the proposed FDF in the legislation included discussion over whether or not to include the proposal as part of an \$800 million (general obligation) bonding bill for recreational facilities development and state park improvements (approved in 1988 by statewide referendum). The decision was made to introduce a separate FDF bill. FDF supporters did not want to have the bill diluted within the \$800 million bonding effort, ie. have its core purposes changed or its investment-oriented focus lost. Furthermore, a separate bill would likely reduce the number of people and groups that might scrutinize the FDF bill. Their attention would be focused on the larger general obligation bonding bill. This lack of attention would hopefully reduce opposition that might develop as a side issue to debates about recreational bonding. A separate bill would also reduce the likelihood that the FDF could be used in bargaining over controversial aspects of the recreational bonding bill. Finally, charges had arisen that the larger bonding effort was being mismanaged, further increasing the amount of scrutiny the FDF bonding would have to undergo if it were linked with the larger bonding bill.

With the help of Forest Management Division personnel and bonding experts, enactment strategy was done by the chief legislative sponsor. The bill seemed to take forever to get through the House of Representatives, but once the right people became involved, it moved fairly quickly and was passed on a vote of 102 - 1. Consideration of the proposal then moved to the Senate which, at the time, was controlled by the Republican Party and led by the Governor's chief political rival. In the Senate, the bill was not assigned to the Agriculture and Forestry Committee as expected, but was assigned to the Environment, Conservation and Recreation Committee. The former was dominated by legislators from rural areas heavily dependent on resource based industries, the latter was dominated by legislators from urban areas more concerned with "environmental" matters than with use of natural resources to foster economic development. It is unclear how this unusual committee assignment came about.

Supporters from the forestry community wanted to raise a protest concerning this committee assignment but Forest Management Division personnel convinced them not to. At this time, the Environment, Conservation and Recreation Committee was chaired by a Senator from a moderately large urban area. A blessing from a major environmental group removed any problem the chair had with the bill, but opposition arose from an unexpected source. Serving on the Committee was a senior Democratic Senator from the largest forested district in the state which had benefitted greatly by forest industry expansion in the 1980's. During one critical committee hearing, this Senator went into an passionate discourse directed specifically at the state forester (who did not respond) in which opposition to the bill was declared. It was clear to all present that this opposition was not based on any details in the bill but rather was based on an ongoing personality conflict between the Senator and the state forester. Due to the influence this Senator wielded, this could have been a fatal blow to the FDF legislation. However, it so happened that this Senator was under investigation by the Senate and state Attorney General for ethics violations. In a critical strategic move, the chair held the bill in committee until the ethics investigation was complete at which time the Senator under investigation was forced to resign to avoid prosecution. Once reported favorably out of committee, the bill easily passed the Senate in the waning days of the 1990 session. The authorizing law was signed by the Governor in 1990 (shortly after the Governor lost the 1990 election).

Implementation

As of 1993, activities to implement the FDF had not progressed very far. Due to political disruption caused by a change of party in the Governor's office, change in the directorships within the DNR, and the state forester's resignation to accept a new job out-of-state, implementation activities involved only the appointment of members of the FFA. It is clear that when the bonds are eventually sold, the bank that handled the legal details of the FDF will be charged with selling the revenue bonds. They also hope to market similar issues in other states, clearly a motivating factor in their willingness to devote considerable effort, free of charge, in getting this proposal enacted.

State forestry officials are optimistic about the eventual operation of the fund. Positive points include a short chain of command and the ability to do the work in-house or by contracting, depending on which is more cost effective. It is also anticipated that the FDF will solidify the idea of key value management on a large scale. There is a great deal of flexibility and room for adjustment in the type of investments that can be made if rates of returns for any one of the 43 management opportunities change due to insect infestations, changing markets, etc. The timing of bond sales is also somewhat flexible so sales can be varied based on changing interest rates. This flexibility can occur within a fund structured to prevent diversion to non-investment oriented operations or programs.

The more interesting part of the FDF, from the perspective of state forestry officials, is the change in management outlook the fund will engender. Public managers are not accustomed to investment-oriented management of state resources, but when state economies stagnate and state finances tighten, the capacity of these resources to positively impact these problems become clear.

Case Study Observations

Minnesota's Environmental and Natural Resources Trust Fund (MTF) and Michigan's Forest Development Fund (FDF) offer two contrasting views of how innovative programs are developed, established and implemented. Although there are many differences in the processes by which these funds came into being, there are also similarities that can be useful lessons for future managers. Consider the following.

Policy Development Models

In regards to the ability of models to explain (guide) policy development, the MTF closely followed a garbage can (Cohen et. al. 1986) or Kingdon (1984) type model. Who was involved was very important and how they interacted certainly shaped the outcome of the process. The coupling of a number of unrelated events was critical to passage of the MTF. The fact that the idea for the MTF was introduced at the time the lottery was being considered, the state anticipated further budget difficulties, the public mood was favorable to more environmental funding, and the political sponsor had considerable clout at the time, were all important components of the MTF's eventual enactment. As described by Kingdon (1984), various independent streams coalesced into a window of opportunity through which the MTF was enacted.

In contrast, the FDF followed an Ellefson (1987) type policy process much more closely, if the process is viewed from the perspective of agency administrators. Conditions were ripe for consideration of some type of alternative funding source for forest management operations when publication of the idea of an investment-oriented fund triggered the subsequent development process. A very select community of formulators actually developed the FDF proposal. The state forester became an issue entrepreneur,

promoting the idea and steering development through various gatekeepers in the Governor's Office and the Department of Treasury. The formulation stage (development stage) did not involve in-depth examination of a great number of alternatives, but resembled a mixed scanning type of formulation process, cursory examination of a number of alternatives and an in-depth examination of only the revenue bonding alternative. It was only at the legitimization stage that politicians and interest groups became actively involved in the process and compromise had to be utilized to gain needed support.

Urgency and Analysis

Polsby (1984) suggests there are two types of innovations, namely those which are acute in the sense that they are rapidly developed with little analysis and those which are incubated in the sense of being nurtured with substantial analysis over long periods of time. The Minnesota Trust Fund was clearly an acute type of innovation, in that very little time passed from formal development of the idea through implementation. Elected officials were very influential throughout the process and the alternative was not publicized widely. Improvisation was also an important part of the process. In contrast, Michigan's Forest Development Fund (FDF) involved a very slow process entailing a researched solution in which experts were very influential. The invention of the FDF alternative was also distinctly separate from its enactment. The important point of the distinction between these two development modes is the importance of determining appropriate action within the policy development process. The MTF was enacted within a very narrow window of opportunity. Extensive research focused on the MTF in the proposal stage, and the time that such analysis would have required, probably would have prevented its enactment. Alternately, the lack of careful research in the case of the FDF would have had severe consequences in the enactment and implementation stages. The proposal would not have been supported by the bonding community or Department of Treasury without it.

Core Elements of Proposals

The persons involved in the development of the MTF and the FDF clearly identified certain core elements on which they refused to compromise. In both cases, those close to the process stated they would withdraw the proposal if certain core ideas or elements were deleted. In the case of the MTF, those core elements were: establishment of a permanent trust fund, constitutional dedication of the source, funding only for projects that contributed to long-term natural resource health and management, establishment of the Citizens Advisory Board to assist the Legislative Commission on Minnesota Resources, restrictions on the substitution of MTF monies for existing funds, and restrictions on funding of current operations. In the case of the FDF, the core elements were: revenue bonding as a funding source, restrictions on the substitution of FDF monies for existing funding, maintenance of existing Forest Management Fund monies, establishment of an independent board to oversee bonding expenditures, development of a separate accounting system to monitor bonding expenditures, and expenditure on only state forest

lands identified as having adequate rates of return. Political actors traded around these core elements to get the MTF and the FDF proposals enacted -- more so in the case of the MTF than the FDF.

The importance of establishing core elements becomes obvious in the enactment and implementation stages. Program managers will, in all likelihood, have to compromise to achieve enactment and must clearly identify what they can safely trade to secure the needed compromises. Core elements typically address only technical and implementation aspects of proposals -- not political aspects. Political considerations have no place in determination of core elements. Political support should be garnered by trading around these core elements, not by influencing or changing them. Failure to protect core elements can result in severe implementation problems later.

Design for Implementation

Throughout the development and enactment stages, the primary champions of each idea never lost sight of requirements for effective implementation. This was most clearly displayed in development of the core elements of each innovation and the technical work that was done for the FDF.

Random Political Events

In each case certain random political events played an important role. One person involved in the FDF work suggested that the proposal fell into a great web of political and technical strength and a lot of dumb luck was involved in the development phase. Something can be said for strategic planning in getting a new proposal developed, enacted, and implemented, but the importance of random events in the process suggests that a better approach is strategic intervention, especially if a long period of time is involved between the start of the process and the end. Strategic intervention focuses on a shorter planning horizon and involves recognition of the importance random events play in the policy process. Focus is on a general plan of action and specific reactions to events that may change the road map to the desired end. The core elements of the idea and the desired end remain the same but a strategic intervention orientation recognizes that the route between beginning and end can't be predicted or planned for in advance. Getting from beginning to end is best achieved through incremental steps taken in response to existing conditions.

Champion of Proposal

Each new idea needs a champion (issue entrepreneur) to steer it through the often torturous course from development through implementation. The state forester and primary author of the FDF proposal document assumed this role in Michigan while Representative Munger assumed this role in Minnesota. Many a good idea has floundered for want of one

or two people who became personally committed and willing to devote considerable effort and political capital. These individuals must be visionaries in the development stage and be able to clearly articulate core elements. Furthermore, they also must be able to determine what technical expertise should be brought to bear in a proposal's development stage. Issue champions must also have good political instincts. Good political connections are not as important as the ability to recognize where good connections are needed, who can supply them, and how and when the idea should be presented to such people to secure their support.

Courage and Risk Taking

The courage to take risks and to compromise on non-core elements is important when roadblocks arise. Several people interviewed regarding the FDF were convinced that the proposal would have been in serious trouble if the state forester had followed the chain of command. By bypassing the Director's office and talking directly with people outside the DNR, the state forester was able to build support with the bonding experts, Governor's office, Department of Treasury, and the legislature -- all critical participants in the enactment phase. This, of course, did not come without cost, but enough contact and involvement were maintained with one member of the Director's office to avoid proposal threatening opposition.

Representative Munger's willingness to compromise on the funding source for the MTF and the length of time it would be constitutionally dedicated, were critical in achieving its enactment. Compromise is almost inevitable in such circumstances and again suggests the need to clearly identify core elements in order to preserve the integrity of the proposal during legislative bargaining. Both cases illustrate the need for a careful reading of the political landscape in order to gauge the extent to which normal procedures need to be bypassed or compromises struck.

Involvement of Appropriate Parties

Who to involve, when to involve them and to what extent they should be involved are important strategic decisions in a program's development and enactment. Many of these decisions must be made in light of the influence of random events that may influence the development and enactment processes. Cultivating the early support of the Governor's office and the support of the politically connected bonding experts in Michigan was extremely important to the FDF, even though it partially came at the expense of support from the DNR Director's office. Alternately, there are benefits of not including certain interests, as demonstrated in the development stage of the FDF.

Interest Group Role

In both the MTF and the FDF case, traditional interest groups did not become involved until the enactment stage. They had virtually no role in development of the initial ideas, although in both cases they were aware of proposal development activities. In the case of the FDF, individuals that were deeply involved in development activities went so far as to say they thought it was advantageous that interest groups did not become involved early in the process. It was felt that their involvement would have disrupted identification of a proposal's the core elements.

Resource Professional Role

Key participants and events influencing the development and enactment of the MTF and the FDF came wholly from outside the natural resource field. In both cases, the current and projected condition of the state economy and fiscal environment were strong motivating factors in the timing of development of the FDF and introduction of the MTF. Unrelated events in each legislature also affected enactment of each fund, difficulties in getting the lottery bill enacted in Minnesota and the resignation of an opposing senator in Michigan. As for participants, all that played key roles in enactment of the MTF were not resource professionals. Several of the key participants in development and enactment of the FDF were trained resource professionals but several were not, including Governor's office staff, the bonding experts, and Department of Treasury officials.

Individual's Limited Role

With the exception of the issue entrepreneur, other participants often play important but limited roles in the process. Various participants play key roles at various stages from development through implementation, but very few people play key roles at every stage. Participants enter and exit the process as their interests dictate and expertise demands. At various points in the processes involving both the MTF and FDF, coalitions of various individuals were important. The composition of these coalitions changed, however, from task to task. This appears to be a natural situation and a great deal of effort could have been wasted in trying to maintain coalitions that served no useful purpose. Keeping people informed is different from asking them to maintain an active role -- a distinction that is important to recognize especially in processes that occur over long periods of time. Touching all the political, financial, and legal bases is important but is best done in an informal way.

Timing at All Stages

Timing is especially important at two points in the process, at the beginning of the development stage and during the enactment stage when political considerations become paramount. The importance of timing depends on conditions existent at the time. Exploiting triggering events is important to start the process. Political systems are typically heavily influenced by timing events. The ability to distinguish when timing is important and

when it isn't is crucial to effective process management.

SUMMARY AND OBSERVATIONS

General State Conditions

Given the importance of state-owned and state-managed natural resources, maintaining adequate funding of state natural resource programs is an important concern. Analysis carried out as part of this study suggests that the extent to which states seek out revenue sources other than general funds is correlated with the degree of economic and fiscal stress they are experiencing. Furthermore, states under fiscal stress tend to restrain their spending, seem to resist tax increases, and increasingly rely on non-general fund resources to support state programs. These non-general fund resources, however, are not always robust enough to substitute entirely for lost general funds. States with strong economies tend to substantially increase program funding, relying heavily on increased general fund monies to support this increase. During favorable economic times, there seems to be little incentive to seek other fund revenue sources. As for total state government employment, such does not track very closely to a state's fiscal condition. States with the best fiscal environments both increased state employment to match their relative fiscal strength, while states with the poorest fiscal environments also had the lowest employment growth rates, but their relative positions were reversed. In states considered in a neutral fiscal stress category, employment growth did not match real spending growth.

Budgetary data were examined for the years: 1975, 1980, 1985, and 1990, and for the periods: 1975-1980, 1980-1985, and 1985-1990. In terms of fiscal stress, the period 1975-1980 was the most fiscally constraining for state governments. The 1980-1985 period was better; it was also a period that real budget increases were the greatest.

Natural Resource Program Conditions

General Fiscal Condition

Selected state natural resource agency budgets were specifically examined for the period 1975 through 1990. Despite the condition of a state's economy (or the increase in state spending overall), agencies with natural resource and environmental management responsibilities generally did better than state agencies lacking such responsibilities. Little or no relationship existed between the funding of natural resource programs and overall state spending or the condition of a state's economic or fiscal environment. This was true for both the general fund portion and the non-general fund portion of resource agency budgets. However, the extraordinary budget increases enjoyed by agencies with natural resource and environmental protection responsibilities did not filter down to units with only

natural resource program responsibilities.

Natural resource programs in non-combined agencies (only natural resource responsibilities) fared considerably better in terms of total budget levels, but less favorably in terms of general fund budget levels compared to natural resource programs in combined agencies (natural resource responsibilities and responsibilities for environmental protection or agriculture). When natural resource programs are combined with environmental programs in the same agency, they generally have lower (but more predictable and stable) budgets, but more of those budgets are made up of general fund monies.

Natural resource programs in the combined agencies studied here started (in 1975) with higher levels of general fund monies but suffered much greater erosion of those funds through 1990. This erosion was so severe, the level of general fund monies in natural resource programs in combined agencies could eventually fall below the level in natural resource programs in non-combined agencies. This is extremely important given national trends regarding the general fund portion of total state spending and natural resource spending. Natural resource general fund spending already shows considerable erosion compared to the change in total general fund spending since 1975. Nationally, general funds as a percentage of total state spending increased from 43 percent in 1975 to 57 percent in 1990. During the same time period, for natural resource programs in the six states studied here, the general fund percentages of total natural resource program budgets declined from 52 percent in 1975 to 35 percent in 1990. The sources of money which go into most state's general funds are these that have historically grown fastest in real terms.

Based on limited information from six states studied here, it appears that natural resource programs are having considerable difficulty maintaining the general fund portion of their budgets. This condition is especially acute if a natural resource program is part of a combined agency, suggesting that natural resource program managers in combined agencies should look to other fund resources as the primary means of maintaining their programs. Natural resource program managers in combined agencies in states that have poor economic environments are in an especially difficult situation.

In terms of employee numbers, natural resource programs in non-combined agencies did considerably better than natural resource programs in combined agencies from 1975 to 1990.

From a functional area perspective, all functional areas studied here experienced real budget increases, yet only three showed definitive trends during the period 1975 through 1990. Fire showed a downward trend, although the variability of funding during the period studied varied considerably. In contrast, enforcement and minerals and energy functional areas showed upward trends in their portion of total natural resource budgets.

When only general fund monies are examined, only parks and recreation and minerals and energy show gradual and fairly consistent reductions in the portion of their total budgets accounted for by general fund monies. Other functional areas had a fairly consistent budget proportions derived from general funds. When all functional areas were combined, general funds made up increasingly less of total natural resource program budgets. In terms of personnel, the various functional areas showed more definitive patterns. Forestry, fire, wildlife, and fisheries had the lowest personnel growth rates, while soil and water and minerals and energy showed the highest personnel growth rates from 1975 to 1990.

Specialized Funding Programs

With general fund monies becoming increasingly hard to maintain, natural resource program managers look to other sources of money to support their programs. These "other fund" monies usually take the form of specialized or dedicated funds. Historically, there has been a strong link between dedicated funds and natural resource programs. This link continues, although the relationship between program and fund source has become increasingly fuzzy (lottery revenues, sales or excise taxes of various sorts, voluntary contribution schemes). In general, revenue sources that are not linked to natural resource programs represent larger pools of potential funding; greater amounts of revenue can usually be generated by access to small portions of these large income sources (income, sales, and property taxes revenues). In contrast with narrowly linked funding arrangements, the total amount of revenue generated by large portions of small dedicated sources is often considerably less (fishing license fees, mining royalties, park entrance fees). The linking of revenue sources to recipient program outputs, however, tends to have great appeal to policy makers.

Natural resource program funding from dedicated sources has increased among the state programs and agencies studied here. This is in contrast to dedicated program funding generally which nationwide declined 28 percent for all state programs. In the six states studied, the dedicated fund portion of natural resource program budgets increased from 48 percent in 1975 to 65 percent in 1990.

Dedicated funds have advantages as well as disadvantages. They can be viewed as beneficial by state program managers if they stabilize funding and relieve them from annual budget requests. In contrast, their tendency to reduce flexibility in the allocation of funds can be viewed as a problem by legislators. A dedicated fund has advantages over general fund monies if cash flow from the source matches the timing of program needs. Dedicated funds that fail to do so can become a special challenge to program managers since a manager's ability to secure additional general fund monies is often severely constrained by legislative policymakers. State fiscal conditions are also important determinants of the desirability of dedicated funds, in that conditions of recession versus economic prosperity can have important effects on the amount of revenue generated by

a dedicated fund (versus expected revenue from general fund appropriations).

Program managers deciding to pursue a new dedicated funding sources should consider a number of conditions prior to doing so. For example, the type of dedicated fund sought may well be dependent on the general economic conditions being experienced by a state. A wholly new specialized funding source is probably best sought when state fiscal conditions deteriorate and legislators are desperate for any type of new funding, while dedication of existing revenue sources is best achieved during times of state economic strength when legislative policy makers are not overly challenged by general state budget shortfalls.

Seeking a specialized dedicated funding source should be preceded by careful analyses of the likely revenue stream that will be generated by a new dedicated fund and how the revenue stream matches recipient program needs. A good match is essential if program managers hope to improve funding levels and their reliability. A poor match may achieve neither and could result in an inability to secure general fund monies needed to make up for any funding shortfalls.

Seeking specialized funding also implies careful identification of core elements for the proposed funding program. If the two case studies reported here are any indication, the process of developing core ideas is greatly aided by the involvement of relatively few knowledgeable and trusted individuals rather than a wide range of interests. Failure to identify core elements can lead to implementation problems if key elements of the proposal are lost during bargaining activities that occur amongst key legislative policy makers. Also important is the identification of a lead person who will personally be committed to the proposed funding program and will nurture the proposal through various political processes.

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APPENDIX A
STATE SURVEY QUESTIONNAIRE

APPENDIX B CASE STUDY QUESTIONNAIRE

Interview questions are grouped into three sections: general information about the fund; stages in the funding change process; and general information about the environment existing during the process. At least three individuals actively involved in the development or enactment phase of the funding mechanism process were interviewed. The interviews were conducted in person, when feasible, or by telephone.

GENERAL INFORMATION ABOUT THE FUND.

1. What is the primary purpose of this fund?
2. Has this fund achieved its primary purpose and if so, why? If not, why?
3. Key design elements are defined as those elements of the program design that are critical to achieving the funds objectives. So critical in fact, you would not bargain or compromise on them to achieve enactment. What were the key design elements of this fund?
4. What criteria were used to establish the key design elements? (for instance; economic, equity, biological)
5. How is money allocated from this fund? For instance, do various divisions compete for it, divisions and local governments compete for it, or this agency and other state agencies compete for it by submitting proposals?
6. Who controls allocation of the money from this fund? For instance, an independent board or the legislature in the case of dedicated funds.
7. What criteria are used to allocate the money?
8. What is the source of the money in this fund? For instance, is it a legislatively dedicated portion of sales taxes, a constitutionally dedicated portion of lottery revenues, revenue bonds for a specific purpose, etc.?
9. What division or programs in your agency have received money from this fund?
10. Have the relative amounts received by each division or program been fairly stable over time? For instance, if the forestry division received fifty percent of the fund in 1985, did it also receive fifty percent in 1990?
11. What year was this fund enacted? How much has the money available from this fund increased since then? What was the cause of this increase or decrease? For instance, a policy change or increase in the underlying source due to general economic change.
12. Have there been any major design changes or policy changes related to this fund since its enactment? If so, why were these changes made?

STAGES IN THE FUNDING CHANGE PROCESS

A. Development. Stage characterized by development of proposals, design of the funding mechanism, projections of revenues and projections of what uses or outputs the fund will support. Stage is primarily technical in nature, intended to assure the soundness of the

proposal (it will do what is promised) and document need.

1. How long was the idea for this fund under development?
2. Where did the idea for the fund originate? Was it more or less a new idea or had there been discussion about it or something similar to it, at a previous time?
3. Did a certain event or a combination of unrelated events, acting together to establish a general trend, trigger development of this fund?
4. Was there one or more key people who provided leadership or played a key role in the technical or intellectual development of the idea behind this fund? Were these people involved in the development of other unique projects, major policy changes or major program changes (i.e. do they have a reputation as innovators)?
5. How were various groups involved in the development of this fund? Specifically, what role, if any, did interest groups, legislators, central agency administrators, division personnel and "outside" actors of various sorts play in the development of this fund?
6. Concerning the individuals and/or groups that played a role in development, did those people who provided leadership to the effort actively seek their involvement, reluctantly seek or accept it because it seemed necessary or actively discourage it without success?
7. Were there individuals and/or groups whose input was actively sought but didn't really contribute much at this stage? Did they provide greater contributions in subsequent stages?
8. Was there an implied strategy concerning who to involve and who not to involve in the development of the fund? If so, why was a strategy thought necessary?
9. As things eventually worked out, do you think the right people were involved in the development stage? Were there some people you wish were brought in at this stage but weren't? Were there some people involved at this stage whose contribution, in retrospect, was not what you had hoped it would be? How would you change things if you could?
10. Were the key people involved in the development stage also key people in the enactment and operation stage?
11. What other general observations do you have regarding the development of this fund? Is there anything else you found particularly interesting about the development of this fund?

B. Enactment. Stage characterized by lobbying, coalition-building, alteration of fund design for political reasons and bargaining. Stage is primarily political in nature, intended to achieve enactment by the legislature.

1. Approximately how long did enactment activities go on?
2. Was this fund approved by referendum or legislatively? Was the legislative route attempted before the referendum route?
3. Was there one or more key people who provided leadership in getting this fund enacted? Were these people regularly involved in maintaining political relations with interest groups and legislators as a regular part of their job?
4. How were various groups involved in the enactment of this fund? Specifically, what

role, if any, did interest groups, legislators, central agency administrators, division personnel and "outside" actors of various sorts play in the enactment of this fund?

5. Concerning the individuals and/or groups that played a role in enactment, did those people who provided leadership to the effort actively seek their involvement, reluctantly seek or accept it because it seemed necessary or actively discourage it without success?

6. In the enactment stage of the process, were there specific people or interest groups that were against enactment of this fund? What was the root of their opposition?

7. How was opposition overcome? For instance, were changes made in fund design, operation details or outputs toward which the fund would be directed?

8. How much of the enactment process was guided by a deliberate strategy and how much resulted from unexpected events? If unexpected events played a role, what were they and how did they affect the process?

9. If you had it to over again, what would you change about the enactment process?

C. Operation. Stage characterized by detailed rule-making, preparing agency personnel, hiring staff or purchasing equipment and actual operation of new programs or integration of the new funds into existing programs. Stage is primarily technical in nature, intended to integrate the new funding mechanism into division or agency operations and fine-tune the design so primary purposes are met.

1. Will the money from this fund support existing programs or create new ones?

2. Do you think this new fund will provide a more stable year to year source of money than existing sources?

3. How were division or agency personnel prepared prior to implementation of the fund?

4. How much flexibility is available to the operators of the fund to make adjustments during implementation?

5. What safeguards are there to prevent diversion of money in the fund to other uses?

6. What safeguards are there to prevent a decrease in general fund monies in proportion to the increase in monies generated by this fund? Are either of these possibilities a real concern?

D. Process Observations and Reflections.

1. If you could start this process over again, knowing what you do now, what would you change?

2. Were the process stages somewhat distinguishable in time, with some overlap, as described or did each stage go on more or less simultaneously?

3. How important was the timing of various events in helping the process along? Was timing an important consideration to key leaders at each stage of the process?

4. What other general observations do you have regarding the process within which this fund was developed, enacted and implemented?

GENERAL INFORMATION ABOUT PROCESS ENVIRONMENT

1. What were the key factors that lead to development and enactment of this fund?
2. Had other ideas been advanced to achieve the same purposes? If so, what were they and why were they rejected?
3. What other general observations do you have regarding the environment which existed at the time this fund was developed, enacted and implemented?

Table 1 - State Economic, Fiscal, and Employment Characteristics, by State and Characteristic. Selected Years 1975 to 1990.

State and Characteristic	Year				Regression Estimates		
	1975	1980	1985	1989	1975	1990	Change (percent)
NATIONWIDE ALL STATES							
Total state government employment (thousands) ^a	3,271	3,753	3,984	4,365	3,292	4,432	35
Unemployment rate (percent) ^b	8.7	7.1	7.2	5.3			
Per capita personal income (nominal dollars) ^c	5,861	9,919	13,896	17,596	5,778	18,275	216
Total state spending (million nominal dollars) ^d	138,304	228,223	345,047	403,939 ^e	129,160	461,867	258
Total state general fund spending (million dollars) ^f	58,777	125,978	184,196	255,251	55,882	263,127	371
MICHIGAN							
Total state government employment (thousands) ^a	143	161	156	164	142	170	20
Unemployment rate (percent) ^b	12.5	12.6	9.9	7.1			
Per capita personal income (nominal dollars) ^c	5,991	10,165	14,002	17,444	6,010	18,197	203
Total state spending (million nominal dollars) ^d	6,500	10,513	14,063	16,504	6,409	18,600	190
Total state general fund spending (million nominal dollars) ^f	3,600	4,772	5,506	6,816	3,550	6,909	95
FLORIDA							
Total state government employment (thousands) ^a	105	119	139	170	99	170	72
Unemployment rate (percent) ^b	10.7	6.0	6.0	5.6			
Per capita personal income (nominal dollars) ^c	5,631	9,764	13,936	17,647	5,544	18,372	231
Total state spending (million nominal dollars) ^d	4,528	7,005	12,148	14,570	3,690	16,741	354

Total state general fund spending (million nominal dollars) ^f	640	3,715	6,202	9,512	507	9,838	1,840
PENNSYLVANIA							
Total state government employment (thousands) ^a	152	149	144	145	152	142	(6)
Unemployment rate (percent) ^b	8.3	7.8	8.0	4.5			
Per capita personal income (nominal dollars) ^c	5,841	9,891	13,555	17,269	5,786	17,895	209
Total state spending (million nominal dollars) ^d	7,934	10,316	15,088	17,603	7,117	19,602	175
Total state general fund spending (million nominal dollars) ^f	4,100	6,424	8,586	10,985	4,000	11,290	182
NEW YORK							
Total state government employment.(thousands) ^a	202	231	288	303	198	317	60
Unemployment rate (percent) ^b	9.5	7.5	6.5	5.1			
Per capita personal income (nominal dollars) ^c	6,519	10,721	15,775	21,073	5,971	21,594	262
Total state spending (million nominal dollars) ^d	15,705	21,345	33,359	40,053	13,415	44,972	235
Total state general fund spending (million nominal dollars) ^f	5,385	13,338	19,535	28,166	5,042	28,968	474
WASHINGTON							
Total state government employment.(thousands) ^a	82	94	97	111	81	112	38
Unemployment rate (percent) ^b	9.5	7.5	8.1	6.2			
Per capita personal income (nominal dollars) ^c	6,298	10,725	14,077	17,647	6,405	18,367	187
Total state spending (million nominal dollars) ^d	2,666	4,856	7,402	8,382	2,588	9,785	278
Total state general fund spending (million nominal dollars) ^f	1,409	2,692	4,308	5,367	1,358	5,674	318
MINNESOTA							
Total state government employment.(thousands) ^a	65	73	75	81	65	82	26
Unemployment rate (percent) ^b	5.9	5.7	6.0	4.3			
Per capita personal income (nominal dollars) ^c	5,779	10,062	14,145	17,657	5,786	18,458	219

Total state spending(million nominal dollars) ^d	2,922	5,066	7,492	8,425	2,862	9,783	242
Total state general fund spending (million nominal dollars) ^f	2,040	3,561	4,788	6,427	1,974	6,588	234

Note: parentheses contain negative percentages.

^a Total state employment includes both full and part-time employees. Sources: US Bureau of the Census Statistical Abstract (various years), and U.S. Bureau of the Census, Public Employment: 1989.

^b Source: US Bureau of the Census Statistical Abstract (various years).

^c Source: US Bureau of the Census Statistical Abstract (various years).

^d Nominal total spending is "Total state government general expenditures" and is in millions from :US Bureau of the Census Statistical Abstract (various years).

^e Nominal total state spending nationally and for all states in the 1989 column is 1987 data.

^f All nominal total state general fund spending in 1975 are regression estimates - 1975 data was unavailable.

Table 2 - State Economic, Fiscal, and Employment Characteristics as a Proportion of Nationwide State Averages, by State and Characteristic. Selected Years 1975 to 1990.

State and Characteristic	Time Period			Year				Stress-level point total (percent)
	1975-1980 (percent)	1980-1985 (percent)	1985-1989 (percent)	1975 (percent)	1980 (percent)	1985 (percent)	1989 (percent)	
MICHIGAN								115
Total state government employment	(14)	(150)	(47)					
Unemployment rate	(5)	(34)	(2)					
Per capita personal income	(72)	(67)	(38)					
Total state spending				44	77	38	34	
Total state general fund spending				2.2	2.5	0.8	(0.9)	
FLORIDA								(144)
Total state government employment	(10)	171	132					
Unemployment rate	(16)	43	16					
Per capita personal income	320	45	38					
Total state spending				23	(15)	(17)	6	
Total state general fund spending				(3.9)	(1.6)	0.3	0.3	
PENNSYLVANIA								50
Total state government employment	(114)	(153)	(93)					
Unemployment rate	(54)	(10)	(2)					
Per capita personal income	(50)	(27)	(28)					
Total state spending				(5)	10	11	(15)	

Total state general fund spending				11.2	8	13.5	19.8	
NEW YORK								(104)
Total state government employment	(3)	298	(46)					
Unemployment rate	(45)	10	17					
Per capita personal income	29	1	14					
Total state spending				9	6	(10)	(4)	
Total state general fund spending				11.2	8.1	13.5	19.8	
WASHINGTON								(5)
Total state government employment	(1)	(48)	50					
Unemployment rate	26	2	(23)					
Per capita personal income	(20)	30	(36)					
Total state spending				9	6	12	17	
Total state general fund spending				7.4	8.1	1.3	0.3	
MINNESOTA								18
Total state government employment	(16)	(56)	(17)					
Unemployment rate	13	(6)	(28)					
Per capita personal income	(35)	(26)	(11)					
Total state spending				(32)	(20)	(17)	(19)	
Total state general fund spending				(1.4)	1.4	1.8	0.3	

Note: parentheses contain negative percentages

Table 3 - Change in Total State Spending and Total State General Fund Spending, by State. 1975 to 1990.

State	Increase in Nominal Total State Spending (percent)	Increase in Nominal Total State General Fund Spending (percent)	Percentage Point Difference Between Nominal Total State Spending and Nominal Total State General Fund Spending (percent)
Minnesota	242	234	(8)
Michigan	190	95	(96)
Florida	354	1,840	1,487
Pennsylvania	175	182	7
New York	235	474	239
Washington	278	318	40
Nationwide all States	258	371	113

Note: Nominal amounts analyzed. 1990 estimate based on regression estimates from Table 1. Parenthesizes contain negative percentages

Table 4 - State Total and State General Fund Spending, and State Government Employment, by State and Year. Selected Years 1975 to 1990.

State and Characteristic	Year				Regression Estimates		
	1975	1980	1985	1989 ^a	1975	1990	Change (percent)
MICHIGAN							
State spending (million real dollars)	11,167	11,943	13,430	15,662	10,373	16,323	57
State general fund spending (million real dollars)	6,185	5,421	5,258	5,998	7,783	3,505	(55)
State government employment (thousands)	143	161	156	164	142	171	20
FLORIDA							
State spend spending (million real dollars)	7,779	7,958	11,601	13,827	6,294	15,177	141
State general fund spending (million real dollars)	1,100	4,220	5,923	8,371	1,234	8,825	615
State government. employment (thousands)	105	119	139	170	99	170	72
PENNSYLVANIA							
State spending (million real dollars)	13,631	11,719	14,409	16,705	10,200	18,901	85
State general fund spending (million real dollars)	7,044	7,298	8,200	9,667	6,548	9,660	47
State government employment (thousands)	152	149	144	145	152	142	(7)
NEW YORK							
State spending (million real dollars)	26,981	24,248	31,858	38,010	20,862	41,779	100
State general fund spending (million real dollars)	9,251	15,152	18,656	24,786	9,133	25,330	177

State government employment (thousands)	202	231	288	303	198	317	60
WASHINGTON							
State spending (million real dollars)	4,580	5,516	7,069	7,954	4,353	8,635	98
State general fund spending (million real dollars)	2,421	3,058	4,114	4,723	2,339	4,904	110
State government employment (thousands)	82	94	97	111	81	112	38
MINNESOTA							
State spending (million real dollars)	5,020	5,755	7,155	7,995	4,765	8,579	80
State general fund spending (million real dollars)	3,505	4,045	4,572	5,656	3,317	5,650	70
State government employment (thousands)	65	73	75	81	65	82	26
SIX STATES SUBJECT OF STUDY							
State spending (million real dollars)	69,158	67,139	85,522	100,154	58,387	107,512	84
State general fund spending (million real dollars)	29,505	39,194	46,723	59,200	28,540	59,814	110
State government employment (thousands)	749	827	899	974	747	985	32

Note: Parenthesizes contain negative percentages.

^a Total state spending for all states in the 1989 column is 1987 data.

Table 5 - Change in State Total and State General Fund Spending, by State. Selected Years 1975 to 1990.

State and Characteristic	1975-1980 (percent)	1980-1985 (percent)	1985-1989 ^{a, b} (percent)
MICHIGAN			
State spending	7	12	34
State general fund spending	(12)	(3)	14
FLORIDA			
State spending	2	46	38
State general fund spending	284	40	41
PENNSYLVANIA			
State spending	(14)	23	32
State general fund spending	4	12	18
NEW YORK			
State spending	(10)	31	38
State general fund spending	64	23	33
WASHINGTON			
State spending	20	28	25
State general fund spending	26	34	15
MINNESOTA			
State spending	15	24	24
State general fund spending	15	13	24
SIX STATES SUBJECT OF STUDY			
State spending	(3)	27	34
State general fund spending	33	19	27

Note: Real dollars analyzed. parentheses contain negative percentages.

^a Percentage increase from 1985 to 1987 of total state spending doubled to approximate 1985 to 1989 increase.

^b Period covers only four years. Percentages for 1985 to 1990 period would be slightly higher.

Table 6 - Total Budget of Agencies with Natural Resource Responsibilities, by State. Selected Years 1975 to 1990.

State and Budget Characteristic	Year				Regression Estimates (of real budget amounts)		
	1975	1980	1985	1990	1975	1990	Change (percent)
MICHIGAN							
Nominal (thousand dollars)	74,984	127,649	237,190	277,918			
Real (thousand dollars)	128,822	145,009	225,330	233,173	116,828	249,339	113
FLORIDA							
Nominal (thousand dollars)	118,236	172,363	271,564	374,249			
Real (thousand dollars)	203,129	196,685	259,344	313,995	174,660	311,916	79
PENNSYLVANIA							
Nominal (thousand dollars)	120,749	172,363	313,213	432,004			
Real (thousand dollars)	207,447	195,804	299,118	362,451	167,202	365,208	118
NEW YORK							
Nominal (thousand dollars)	59,200	88,500	159,651	242,233			
Real (thousand dollars)	101,706	100,536	152,467	203,233	79,095	199,876	153
WASHINGTON							
Nominal (thousand dollars)	44,830	90,357	122,785	227,818			
Real (thousand dollars)	77,018	102,645	117,260	191,139	61,502	182,529	197
MINNESOTA							
Nominal (thousand dollars)	29,023	62,649	97,666	144,306			
Real (thousand dollars)	49,861	71,169	93,271	121,073	48,333	119,354	147
SIX STATES SUBJECT OF STUDY							
Nominal (thousand dollars)	447,022	714,656	1,202,069	1,698,528			
Real (thousand dollars)	767,984	811,849	1,147,976	1,425,065	666,410	1,410,027	112

Table 7- Natural Resource Portion of Total Budget of Agencies with Natural Resource Responsibilities, by State. Selected Years 1975 to 1990.

State and budget characteristic	Year				Regression Estimates (of real budget amounts)		
	1975	1980	1985	1990	1975	1990	Change (percent)
MICHIGAN							
Nominal (thousand dollars)	61,824	86,061	116,195	142,772			
Real (thousand dollars)	106,214	97,765	110,966	119,786	94,562	122,804	30
FLORIDA							
Nominal (thousand dollars)	78,182	126,739	196,253	273,618			
Real (thousand dollars)	134,317	143,975	187,422	229,565	121,476	226,164	86
PENNSYLVANIA							
Nominal (thousand dollars)	67,214	96,669	187,915	257,465			
Real (thousand dollars)	115,474	109,816	179,459	216,013	91,155	219,226	140
NEW YORK							
Nominal (thousand dollars)	39,933	52,930	78,593	106,985			
Real (thousand dollars)	68,605	60,128	75,056	89,760	55,419	91,355	65
WASHINGTON							
Nominal (thousand dollars)	44,830	82,941	107,937	152,856			
Real (thousand dollars)	77,018	94,221	103,080	128,246	75,406	125,876	67
MINNESOTA							
Nominal (thousand dollars)	29,023	62,649	97,666	144,306			
Real (thousand dollars)	49,861	71,169	93,271	121,073	48,333	119,354	147
SIX STATES SUBJECT OF STUDY							
Nominal (thousand dollars)	321,006	507,989	784,559	1,078,002			
Real (thousand dollars)	551,488	577,075	749,254	904,444	497,414	893,716	80

Table 8 - General Fund Portion of Natural Resource Portion of Total Budget of Agencies with Natural Resource Responsibilities, by State. Selected Years 1975 to 1990.

State and Characteristic	Year				Regression Estimates (of real budget amounts)		
	1975	1980	1985	1990	1975	1990	Change (percent)
MICHIGAN							
Nominal (thousand dollars)	30,049	34,849	37,814	43,348			
Real (thousand dollars)	51,624	39,588	36,112	36,369	50,682	31,164	(38)
FLORIDA							
Nominal (thousand dollars)	37,811	65,593	75,404	86,839			
Real (thousand dollars)	64,959	74,514	72,011	72,858	63,543	78,628	24
PENNSYLVANIA							
Nominal (thousand dollars)	37,035	46,947	56,502	74,451			
Real (thousand dollars)	63,626	53,332	53,959	62,464	57,527 ^a	60,824	6
NEW YORK							
Nominal (thousand dollars)	25,749	29,532	37,790	38,159			
Real (thousand dollars)	44,237 ^b	40,163	36,089	32,015	44,237	32,015	(28)
WASHINGTON							
Nominal (thousand dollars)	11,868	32,441	38,906	64,139			
Real (thousand dollars)	20,389	36,853	37,155	53,813	20,389	53,716	163
MINNESOTA							
Nominal (thousand dollars)	13,764	37,450	53,403	75,933			
Real (thousand dollars)	23,646	42,543	51,000	63,708	25,453	64,996	155
SIX STATES SUBJECT OF STUDY							
Nominal (thousand dollars)	156,276	246,812	299,819	382,869			
Real (thousand dollars)	268,482	280,378	286,327	321,227	260,946	317,261	22

Note: parentheses contain negative percentages.

^a Nominal budget amounts were used in the regression then estimates for 1975 and 1990 were converted to real values.

^b New York, 1975 and 1980 and Washington, 1975 data are estimates based on regression equations of real budget amounts in available years.

Table 9 - Change in Major State Budget Categories, by State. 1975 to 1990.

State	Total State Spending (percent)	Total Agency Budget (percent)	Natural Resource Portion of Agency Budget (percent)	Total State General Fund Spending (percent)	General Fund Portion of Natural Resource Budget (percent)
Michigan	57	113	30	(55)	(38)
Florida	141	79	86	615	24
Pennsylvania	85	118	140	47	6
New York	100	153	65	177	(28)
Washington	98	197	67	110	163
Minnesota	80	147	147	70	155
Six States Subject of Study	84	112	80	110	22

Note: Based on regression estimates and real dollars. Parenthesizes contain negative percentages.

Figure 1 - Changes in Portion of State Spending, by Various Major State Budget Categories. 1975 to 1990.

Key: Axis A - general fund spending as a percentage of total natural resource spending.
Axis B - natural resource spending as a percentage of total natural resource related agency spending.
Axis C - total natural resource agency spending as a percentage of total state spending.
Axis D - total state spending in the six states surveyed as a percentage of state spending nationally.

----- 1975

_____ 1990

Table 10 - Change in State Government Employment, Agency Employment, and Natural Resource Portion of Agency Employment, by State. 1975 and 1990.

State and Budget Characteristic	Regression Estimates		
	1975	1990	Change (percent)
MICHIGAN			
Total state government employees	142,000	171,000	20
Total agency employment	2,662	4,016	51
Natural resource portion of agency employment	2,671	1,980	(26)
FLORIDA			
Total state government employees	99,000	170,000	72
Total agency employment	5,099	7,132	40
Natural resource portion of agency employment	2,843	4,629	63
PENNSYLVANIA			
Total state government employees	152,000	142,000	(6)
Total agency employment	4,197	4,875	16
Natural resource portion of agency employment	3,291	2,616	(20)
NEW YORK			
Total state government employees	198,000	317,000	60
Total agency employment	1,631	4,094	151
Natural resource portion of agency employment	1,482	1,859	25
WASHINGTON			
Total state government employees	81,000	112,000	38
Total agency employment	2,828	2,673	5
Natural resource portion of agency employment	2,469	2,360	(4)
MINNESOTA			
Total state government employees	65,000	82,000	26
Total agency employment	1,219	2,019	66
Natural resource portion of agency employment	1,219	2,019	66
SIX STATES SUBJECT OF STUDY			
Total state government employees	737,000	994,000	35
Total agency employment	17,636	24,809	41
Natural resource portion of agency employment	13,897	15,467	11

Note: Based on regression estimates. Parenthesizes contain negative percentages.

Table 11 - Natural Resource Budgets, by Combined and Non-combined Agencies and Functional Areas. Selected Years 1975 to 1990.

Functional Area	Combined Agencies (thousand real dollars)				Non-combined Agencies (thousand real dollars)			
	1975	1980	1985	1990	1975	1980	1985	1990
Forestry	63,846	65,322	76,525	93,369	9,073	13,435	22,095	22,744
Fire	38,595	38,541	31,008	39,135	146	3,685	1,555	5,635
Wildlife	13,934	14,534	21,422	22,482	33,545	39,467	47,512	49,827
Fisheries	20,246	13,886	26,356	32,208	50,434	58,308	60,995	92,510
Enforcement	17,120	18,353	22,869	29,191	38,547	43,280	60,290	83,287
Parks & Recreation	55,104	59,294	83,744	84,578	54,148	73,045	73,520	62,853
Minerals & Energy	13,546	14,849	53,388	84,021	13,121	10,678	25,484	11,058
Soil & Water	16,454	11,381	13,538	17,131	2,863	4,541	7,493	12,357
Administrative & Support Services	63,158	48,366	50,735	50,951	42,769	46,314	70,496	111,135
All Functional Areas	302,003	284,526	379,585	453,066	244,647	292,753	369,440	451,406

Table 12 - Change in Total Natural Resource Budget Amounts, by Combined and Non-combined Agencies and Functional Area. 1975 and 1990.

Functional Area	Combined Agencies (thousand real dollars)				Non-combined Agencies (thousand real dollars)			
	1975	1990	r ² value	Increase (percent)	1975	1990	r ² value	increase (percent)
Forestry	57,999	91,532	.94	58	8,720	24,953	.96	186
Fire	inconclusive ^a		-.20		inconclusive		.77	
Wildlife	12,531	23,654	.94	89	33,720	51,455	.98	53
Fisheries	11,599	34,749	.79	199	41,627	89,497	.90	53
Enforcement	15,289	28,477	.96	86	31,973	80,729	.96	152
Parks & Recreation	51,116	90,244	.93	76	36,951	94,832	.37	157
Minerals & Energy	inconclusive		.95		inconclusive		.16	
Soil & Water	inconclusive		.20		1,854	11,773	.97	535
Administrative & Support Services	65,006	41,599	-.66	(36)	28,774	106,583	.94	270
All Functional Areas	256,319	453,271	.91	77	233,666	445,457	.99	91

Note: parentheses contain negative percentages.

^a Regression equation yields negative budget number.

Table 13 - General Fund Portion of Total Natural Resource Budget Amounts, by Combined and Non-combined Agencies and Functional Area. Selected Years 1975 to 1990.

Functional Area	Combined Agencies (thousand real dollars)				Non-combined Agencies (thousand real dollars)			
	1975	1980	1985	1990	1975	1980	1985	1990
Forestry & Fire	64,502	59,690	58,294	71,222	6,240	10,930	16,453	21,925
Wildlife & Fisheries	2,839	682	4,629	3,057	22,191	32,315	25,593	37,386
Enforcement	5,433	6,216	5,755	5,344	16,999	19,532	28,338	34,232
Parks & Rec.	43,868	38,399	41,575	42,995	20,293	32,788	10,586	15,284
Min. & Energy	11,075	8,870	12,067	14,752	6,102	3,193	6,229	5,274
Soil & Water	9,284	5,662	6,961	8,402	2,285	3,662	6,715	8,967
Administrative & Support Services	34,764	29,564	30,136	30,930	11,118	21,873	32,990	21,287
All Functional Areas	171,764	149,083	159,417	176,702	85,229	124,293	126,904	144,355
<i>Where Separation of Functional Areas is Possible</i>								
Forestry	17,233	14,326	10,927	10,513	6,094	7,245	14,898	16,772
Fire	12,318	9,986	9,167	10,018	146	3,685	1,555	5,153
Wildlife	90	341	838	321	192	234	355	4,499
Fisheries	2,577	341	2,250	57	21,999	32,081	25,238	32,887

Table 14 - Change in General Fund Portion of Total Natural Resource Budget Amounts, by Combined and Non-combined Agencies and Functional Area. 1975 and 1990.

Functional Area	Combined Agencies (thousand real dollars)				Non-combined Agencies (thousand real dollars)			
	1975	1990	r ² value	Increase (percent)	1975	1990	r ² value	Increase (percent)
Forestry & Fire	47,082	79,772	.41	69	5,989	21,785	.99	264
Wildlife & Fisheries	inconclusive ^a		.36		18,662	40,081	.74	115
Enforcement	7,610	3,764	-.24	(50)	15,350	34,200	.98	123
Parks & Recreation	inconclusive		.03		inconclusive		-.50	
Minerals. & Energy	7,928	15,454	.75	94	inconclusive		.05	
Soil & Water	inconclusive		-.11		1,878	8,937	.99	376
Administrative & Support Services	35,876	26,827	-.60	(25)	inconclusive		.60	
All Functional Areas	inconclusive		.26		89,058	151,333	.93	70

Note: parentheses contain negative percentages.

^a Regression equation yields negative budget numbers.

Table 15 - General Fund Portion of Agency Budget, by Combined and Non-combined Agencies and Functional Area. Selected Years 1975 to 1990.

Functional Area	Combined Agencies (year and percent)				Non-combined Agencies (year and percent)			
	1975	1980	1985	1990	1975	1980	1985	1990
Forestry & Fire	63	57	54	54	68	64	70	77
Wildlife & Fisheries	8	2	10	6	26	33	24	26
Enforcement	32	34	25	18	44	45	47	41
Parks & Recreation	80	65	50	51	37	45	14	24
Minerals & Energy	82	60	23	18	46	30	24	48
Soil & Water	56	50	51	49	80	81	90	72
Administrative & Support Services	55	61	59	61	26	47	47	19
All Functional Areas	57	52	42	39	38	47	38	35

Table 16 - Natural Resource Portion of Agency Budget, by Combined and Non-combined Agencies. Selected Years 1975 to 1990.

	Combined Agencies				Non-combined Agencies			
	1975	1980	1985	1990	1975	1980	1985	1990
Total Agency Budget (thousand real dollars)	542,470	586,335	811,491	1,014,722	244,647	292,753	369,440	451,406
Total Natural Resource Amount of Total Agency Budget (thousand real dollars)	302,003	284,526	379,585	453,066	same	same	same	same
Natural Resource Portion of Total Agency Budget (percent)	56	48	47	45	100	100	100	100

Table 17 - Natural Resource Agency Employment, by Combined and Non-combined Agencies. Selected Years 1975 to 1990.

Type of Organization	Year				Estimates		
	1975	1980	1985	1990	1975	1990	Change (percent)
Combined Agencies	8,126	7,974	7,891	8,270	7,341	8,790	20
Non-combined Agencies	5,670	6,305	6,732	7,906	5,533	7,773	40
Total	13,796	14,279	14,623	16,176	13,445	15,992	19

Table 18 - Change in Natural Resource and Environmental-Agricultural Portion of Agency Budgets, by State and Combined and Non-combined Agencies. 1975 and 1990.

State and Category	Combined Agencies			Non-combined Agencies		
	1975	1990	Change (percent)	1975	1990	Change (percent)
MICHIGAN						
. Natural resource budget (thousand real dollars)	94,597	120,511	27			
. Environmental budget (thousand real dollars)	18,735	130,181	595			
. Total natural resource and environmental budget (thousand real dollars)	113,332	250,692	121			
FLORIDA						
. Natural resource budget (thousand real dollars)	21,801	36,957	70			
. Agricultural budget (thousand real dollars)	48,049	89,427	86			
. Total natural resource and agricultural budget (thousand real dollars)	69,850	126,384	81	95,252	190,775	100
PENNSYLVANIA						
. Natural resource budget (thousand real dollars)	43,830	156,107	256			
. Environmental budget (thousand real dollars)	74,541	145,534	95			
. Total natural resource and environmental budget (thousand real dollars)	118,371	301,641	155	44,914	63,076	40
NEW YORK						
. Natural resource budget (thousand real dollars)	55,313	90,003	63			
. Environmental budget (thousand real dollars)	22,056	109,438	396			
. Total natural resource and environmental budget (thousand real dollars)	77,369	199,441	158			
WASHINGTON						
. Total natural resource budget (thousand real dollars)	33,062	52,101	58	38,566	74,859	94
MINNESOTA						
. Total natural resource budget (thousand real dollars)				46,910	119,718	155
SIX STATES SUBJECT OF STUDY						
. Natural resource budget (thousand real dollars)	256,319	453,271	77			
. Environmental-agricultural budget (thousand real dollars)	220,775	547,144	148			
. Total natural resource and environmental-agricultural budget (thousand real dollars)	477,094	1,000,415	110	233,666	445,457	91

^a A major budget increase between 1985 and 1990 (14,180 in 1985 to 62,894 in 1990) in the environmental portion of this agency's budget make regression of total budget amount and the environmental portion of the budget unreliable.

Table 19 - State Natural Resource Budgets, by Functional Area. Selected Years 1975 to 1990.

Functional Area	Total Natural Resource Budget Amount (thousand real dollars)				Estimates (thousand real dollars)		
	1975	1980	1985	1990	1975	1990	Change (percent)
Forestry	72,922	78,759	98,620	116,121	68,235	114,976	68
Fire	38,741	42,226	32,563	44,769	35,253	44,525	26
Wildlife	47,479	54,000	68,934	72,310	46,515	74,847	61
Fisheries	70,680	72,193	87,351	124,717	56,644	120,826	113
Enforcement	55,668	61,632	83,158	112,478	47,262	109,206	131
Parks & Recreation	109,253	132,340	157,264	147,431	108,385	164,759	52
Minerals & Energy	26,667	25,526	78,872	95,080	12,006	101,067	742
Soil & Water	19,315	15,922	21,031	29,450	13,042	29,817	129
Administrative & Support Services	105,927	94,680	121,232	162,086	80,863	161,099	99
All Functional Areas	546,652	577,280	749,024	904,444	495,215	893,485	

Table 20 - Functional Area Portion of Natural Resource Agency Budget, by Functional Area. Selected Years 1975 to 1990.

Functional Area	1975 (percent)	1980 (percent)	1985 (percent)	1990 (percent)
Forestry	13.3	13.6	13.2	12.8
Fire	7.1	7.3	4.3	5.0
Wildlife	8.7	9.4	9.2	8.0
Fisheries	12.9	12.5	11.7	13.8
Enforcement	10.2	10.7	11.1	12.4
Parks & Recreation	20.0	22.9	21.0	16.3
Minerals & Energy	4.9	4.4	10.5	10.5
Soil & Water	3.5	2.8	2.8	3.3
Administrative & Support Services	19.4	16.4	16.2	17.9
All Functional Areas	100.0	100.0	100.0	100.0

Note: Based on analysis of real dollars.

Table 21 - General Fund Portion of Natural Resource Agency Budgets, by Functional Area. Selected Years 1975 to 1990.

Functional Area	General Fund Portion of Total Natural Resource Budget (thousands real dollars)				Estimates (thousands real dollars)		
	1975	1980	1985	1990	1975	1990	Change (percent)
Forestry & Fire	70,742	70,620	74,747	93,147	62,795	91,833	46
Wildlife & Fisheries	25,029	32,997	30,222	40,443	23,620	40,725	72
Enforcement	22,432	25,748	34,093	39,576	21,280	39,644	86
Parks & Recreation	64,161	71,187	52,161	58,279	77,685	45,208	(42)
Minerals & Energy	17,177	12,063	18,296	20,026	9,747	24,034	147
Soil & Water	11,570	9,324	13,676	17,369	8,143	17,827	119
Administrative & Support Services	45,883	51,437	63,126	52,217	37,904	68,428	80
All Functional Areas	256,994	273,376	286,321	321,057	251,970	316,904	26

Note: parentheses contain negative percentages.

Table 22 - Agency General Fund Natural Resource Budget and Agency Total Natural Resource Budget, by Functional Area. Selected Years 1975 to 1990.

Functional Area	1975	1980	1985	1990
<i>Forestry & Fire</i>				
Total function budget (thousand real dollars)	111,663	120,985	131,183	160,890
General fund amount of total budget (thousand real dollars)	70,742	70,620	74,747	93,147
General fund portion of total function's budget (percent)	63	58	57	58
<i>Wildlife & Fisheries</i>				
Total function budget (thousand real dollars)	118,159	126,193	156,285	197,027
General fund amount of total budget (thousand real dollars)	25,029	32,997	30,222	40,443
General fund portion of total function's budget (percent)	21	26	19	20
<i>Enforcement</i>				
Total function budget (thousand real dollars)	55,668	61,632	83,158	112,478
General fund amount of total budget (thousand real dollars)	22,432	25,748	34,093	39,576
General fund portion of total function's budget (percent)	40	42	41	35
<i>Parks & Recreation</i>				
Total function budget (thousand real dollars)	109,253	132,340	157,264	147,431
General fund amount of total budget (thousand real dollars)	64,161	71,187	52,161	58,279
General fund portion of total function's budget (percent)	59	54	33	39
<i>Minerals & Energy</i>				
Total function budget (thousand real dollars)	26,667	25,526	78,872	95,080
General fund amount of total budget (thousand real dollars)	17,177	12,063	18,296	20,026
General fund portion of total function's budget (percent)	64	47	23	21
<i>Soil & Water</i>				
Total function budget (thousand real dollars)	19,315	15,922	21,031	29,450
General fund amount of total budget (thousand real dollars)	11,570	9,324	13,676	17,369
General fund portion of total function's budget (percent)	60	59	65	59
<i>Administrative & Support Services</i>				
Total function budget (thousand real dollars)	105,927	94,680	121,232	162,086
General fund amount of total budget (thousand real dollars)	45,883	51,437	63,126	52,217
General fund portion of total function's budget (percent)	43	54	52	32
<i>All Functional Areas</i>				
Total function budget (thousand real dollars)	546,652	577,280	749,024	904,444
General fund amount of total budget (thousand real dollars)	256,994	273,376	286,321	321,057

General fund portion of total function's budget (percent)	47	47	38	35
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Table 23 - Change in Employment in State Natural Resource Agencies, by Functional Area. Selected Years 1975 to 1990.

Functional Area	Employees				Regression Estimates		
	1975	1980	1985	1990	1975	1990	Change (percent)
Forestry & Fire	3,606	3,651	3,625	3,701	3,587	3,705	3
Wildlife & Fisheries	3,231	3,312	3,306	3,631	3,131	3,608	15
Enforcement	1,644	1,817	2,000	2,283	1,616	2,256	40
Parks & Recreation	2,449	2,593	2,543	2,860	2,375	2,848	20
Minerals & Energy	559	620	807	787	538	849	58
Soil & Water	419	338	414	535	286	567	98
Administration & Support Services	1,888	2,130	2,115	2,608	1,800	2,570	43
All Functional Areas	13,796	14,461	14,810	16,405	13,517	16,218	20

Table 24 - Major State Taxes Designated for Specialized or Dedicated Funds. 1988.

State Tax	Total Collections (million dollars)	Amount Dedicated (million dollars)	Portion Dedicated (percent)	Recipient Program & State
SEVERANCE-EXTRACTION				
Petroleum & forest products severance	52.2	4.3	8.2	Forestry - <i>Alabama</i>
Timber severance	3.6	3.5	97.0	Forestry communications & education - <i>Arkansas</i>
Timberland	.7	.7	100.0	Forestry communications - <i>Arkansas</i>
Severance	112.9 286.7	4.6 5.3	4.1 1.8	Natural resources - <i>Montana</i> Reclamation fund & oil conservation fund - <i>New Mexico</i>
Forest products harvest	3.9	3.9	100.0	Forest research & protection - <i>Oregon</i>
Forest renewal	.3	.3	100.0	Forestry - <i>South Carolina</i>
Forestry property & forest crop severance	25.2	25.2	100.0	Conservation fund - <i>Wisconsin</i>
Oil extraction & coal severance	57.8	6.7	25.0	Resources trust fund - <i>North Dakota</i>
Taconite & iron ore production	54.1	7.7	14.2	A NE Minn. environmental & economic dev. agency - <i>Minnesota</i>
Energy generation	4.0	4.0	100.0	Department of Natural Resources - <i>Maryland</i>
Seafood marketing	2.7	2.7	100.0	Alaska Seafood Marketing Association - <i>Alaska</i>
<i>Subtotal</i>		68.9		
FUEL TAXES				
Motorboat registration	.4	.2	44.0	Game protection - <i>Arkansas</i>
Boat title	22.0	22.0	100.0	Department of Natural Resources - <i>Maryland</i>
Marine fuel	5.3 1.8	5.3 1.8	100.0 100.0	Water & harbor facilities - <i>Alaska</i> Department of Natural Resources - <i>Iowa</i>

Motor fuel	366.0 102.4 800.6 1,473.8	1.4 1.2 4.0 6.1	0.4 1.2 0.5 0.4	Ports - <i>Louisiana</i> Fish, wildlife & parks - <i>Montana</i> Waterway safety - <i>Ohio</i> Fish, game & water - <i>Texas</i>
<i>Subtotal</i>		42.0		
TAXES UNCONNECTED TO NATURAL RESOURCES				
Documentary stamp	441.0	64.9 40.2 39.2	17.7 9.1 8.9	Land acquisition - <i>Florida</i> Water management - <i>Florida</i> Conservation & Rec. - <i>Florida</i>
Bingo	1.2	.9	75.0	Local parks - <i>South Carolina</i>
Inter-track pari-mutual	.3	.3	57.1	Downstate park districts - <i>Illinois</i>
Cigarette & tobacco	150.2 38.9 417.0	7.9 1.4 15.2	5.3 3.7 3.6	Natural resources - <i>Minnesota</i> State parks - <i>Nebraska</i> State parks - <i>Texas</i>
General sales	1,654.0 1,617.4	91.0 2.0	5.4 0.1	Conservation, soil & water conservation - <i>Missouri</i> Wildlife - <i>North Carolina</i>
Lottery	(begin1990) 33.0	- 3.3	50.0 1.0	Natural resources - <i>Minnesota</i> State parks - <i>Colorado</i>
Miscellaneous	27.8 1.2	27.8 1.2	100.0 100.0	Dev. & conservation - <i>Maine</i> Fire protection - <i>Montana</i>
<i>Subtotal</i>		295.3		

Source: Fabricius & Snell 1990.

Table 25 - State and Federal Specialized and Designated Funds as a Portion of State Natural Resource Budgets, by State. Selected Years 1975 to 1990.

State and Category	Amount (thousand real dollars)				Regression Estimates (thousand real dollars)		
	1975	1980	1985	1990	1975	1990	Change (percent)
MICHIGAN							
Federal specialized funds	10,283	8,699	9,763	10,063	inconclusive		
State specialized funds	44,306	49,478	65,090	73,353	42,112	74,001	76
Total specialized funds	54,590	58,177	74,854	83,417	51,452	84,067	63
FLORIDA							
Federal specialized funds	unavailable separately						
State specialized funds	unavailable separately						
Total specialized funds	69,358	69,461	115,411	156,707	51,161	154,308	202
PENNSYLVANIA							
Federal specialized funds	4,548	7,984	39,000	72,484	inconclusive		
State specialized funds	45,288	45,501	86,500	81,064	36,838	93,839	155
Total specialized funds	51,848	56,484	125,500	153,549	35,179	158,512	351
NEW YORK							
Federal specialized funds	unavailable separately						
State specialized funds	unavailable separately						
Total specialized funds	24,368	19,965	38,967	57,745	13,305	57,217	330
WASHINGTON							
Federal specialized funds	6,345	10,761	15,755	14,425	6,345	17,298	173
State specialized funds	37,881	46,607	50,170	60,008	37,881	59,452	57
Total specialized funds	44,226	57,368	65,925	74,433	45,418	75,558	66
MINNESOTA							
Federal specialized funds	1,263	6,375	1,231	4,235	inconclusive		
State specialized funds	24,896	22,251	41,040	53,130	17,085	53,574	214
Total specialized funds	26,215	28,626	42,271	57,365	21,294	55,944	163
SIX STATES SUBJECT OF STUDY							
Total specialized funds	283,006	296,697	462,927	583,217	232,905	580,018	149

Table 26 - Change in State Agency Natural Resource Budgets, General Fund Portion of Agency Budget and Specialized-Dedicated Portion of Agency Budget, by State. 1975 to 1990.

State	Total Budget (percent)	General Fund Portion of Total Budget (percent)	Specialized-Dedicated Portion of Total Budget (percent)	Specialized- Dedicated State and Federal Fund Portion of Total Budget (percent)
Michigan	30	(38)	96	63
Florida	86	24	unavailable	202
Pennsylvania	140	6	155	351
New York	65	(28)	unavailable	330
Washington	67	163	57	38
Minnesota	147	155	214	163
Six States Subject of Study	80	22	unavailable	149

Note: Analysis of real dollars. Parenthesizes contain negative percentages.