
Environment and Natural Resources

CHAPTER 10

Minnesota has a reputation for having a relatively clean environment and considerable park and outdoor recreational opportunities. In 1992, state and local governments spent \$1.3 billion on environmental and natural resource activities, or about 6 percent of all state and local expenditures. This chapter examines spending on the environment and natural resources in greater detail. In particular, the chapter addresses the following questions:

- **What have been the trends in environmental and natural resource spending in Minnesota and other states?**
- **What factors appear to be responsible for spending trends?**
- **How does spending in Minnesota compare with other states, and what factors contribute to the differences in spending?**

For the most part, we relied on Census data in examining state and local government expenditures. Unlike other data sources, Census data provides comprehensive spending information on both state and local governments, as well as comparative data on other states. Census data provide spending information on four activities: 1) parks and recreation, 2) sewerage, 3) natural resources, and 4) solid waste management. One possible drawback is that Census data split the expenditures of several Minnesota agencies among different categories. For example, spending by the Department of Natural Resources would appear in both the natural resource category and the parks and recreation category.¹

SPENDING TRENDS

Of the \$1.3 billion spent on environmental and natural resource activities in 1992, the largest category of spending was parks and recreation. State and local governments in Minnesota spent \$404 million on parks and recreation, or 32 percent of the total. This category includes public expenditures on state and local parks and recreational facilities, stadiums, museums, zoos, and cultural activities. Spending on sewerage was \$359 million in 1992, or about 28 percent of total spending. This category includes construction, operation and maintenance of sanitary and

¹ For a more detailed analysis of state agency spending, see Minnesota Planning *Working Paper, Budget 2001: Environment*, October 1994.

storm sewer systems, as well as sewage disposal and treatment facilities. The third largest category is natural resources, which accounted for about 24 percent of the spending examined in this chapter. The \$304 million spent on natural resources went for a variety of governmental activities, including fish and game, forestry, soil and water resources, and certain agricultural programs. About \$213 million, or close to 17 percent, was spent on solid waste management. This latter category includes the costs of garbage collection, landfills, and recycling, as well as hazardous waste cleanup and disposal activities.²

Expenditures on environmental and natural resource activities increased 477 percent from 1972 to 1992. After adjusting for inflation, the overall increase was 73 percent. Tables 10.1 and 10.2 show that:

- **Environmental and natural resource spending per capita grew 49 percent from 1972 to 1992, while spending grew only 9 percent relative to personal income.**

Expenditures per Capita

In 1992 dollars, spending increased from \$192 to \$286 per Minnesota resident. Table 10.1 shows that:

Overall environmental and natural resources spending increased about the same in Minnesota as nationally.

Table 10.1: Environmental Expenditures per Capita, Minnesota and United States, 1972 and 1992

	1972 ^a	1992	Difference	Percentage Change
MINNESOTA				
Natural Resources	\$50	\$68	\$18	36%
Parks and Recreation	42	90	48	114
Sewerage	88	80	(-8)	(-9)
Solid Waste Management	12	48	36	300
Total	\$192	\$286	\$94	49%
UNITED STATES				
Natural Resources	\$50	\$51	\$1	2%
Parks and Recreation	37	62	25	68
Sewerage	52	80	28	54
Solid Waste Management	25	47	22	88
Total	\$164	\$240	\$76	46%

Source: U.S. Census Bureau.

^aIn 1992 dollars.

² In Chapter 2, spending on housing and community development programs was included along with spending on the environment and natural resources in a larger category, which the Census Bureau calls "environment and housing." In addition, Chapter 2 combined sewerage and solid waste management into one category called sanitation. In this chapter, we do not examine spending on housing and community development programs, and we separately analyze spending on sewerage and solid waste management.

Most of Minnesota's spending growth was for parks and recreation activities and solid waste management.

- **Half of the growth in spending per capita was in the parks and recreation category, while another 38 percent of the growth came from solid waste management expenditures.**

Spending per capita grew 114 percent for parks and recreation and 300 percent for solid waste management. The rest of the growth came from natural resource spending, which grew 36 percent per capita. Sewerage expenditures per capita fell 9 percent.

The overall national trend was similar, but trends for individual categories differed from Minnesota trends. National spending per capita rose 46 percent, or slightly slower than in Minnesota. The national rate of growth was lower in all categories except sewerage. Sewerage expenditures per capita rose 54 percent nationally while falling in Minnesota. Nationally, sewerage and solid waste management spending accounted for almost two-thirds of the growth in spending per capita but only 30 percent of the growth in Minnesota. Expenditures on natural resources, parks, and recreational facilities experienced stronger growth in Minnesota than throughout the nation.

There are several possible reasons for the difference in spending trends for sewerage. First, there has been greater population growth in the United States than in Minnesota. Population growth tends to result in the construction of additional sewerage treatment facilities. Second, some sewer systems in other states may have been older and needed more extensive repairs and reconstruction than those in Minnesota cities. Census data indicate that capital expenditures on sewerage in Minnesota have been declining despite some major sewer separation projects. In contrast, capital expenditures nationwide have grown faster than inflation.

Expenditures Relative to Income

From 1972 to 1992, as Table 10.2 shows, environmental and natural resource expenditures grew only 9 percent relative to personal income both in Minnesota and throughout the United States. Natural resource spending in Minnesota grew at the same pace as personal income, while spending on parks and recreation grew 56 percent relative to personal income. Sewerage spending did not increase as fast as personal income, but:

- **Expenditures on solid waste management increased 193 percent relative to personal income.**

Nationally, the trends relative to personal income were similar to those for spending per capita. Spending growth relative to personal income was lower nationally than in Minnesota in all categories except sewerage. Nationally, the only category which did not grow as fast as personal income was natural resources. Natural resource spending declined 23 percent relative to personal income.

The fastest growth for both Minnesota and other states occurred in the solid waste management category, although Minnesota's growth in this category was substantially greater than national growth. This trend may be the result of a significant in-

Table 10.2: Environmental Expenditures per \$1,000 Personal Income, Minnesota and United States, 1972 and 1992

	<u>1972</u>	<u>1992</u>	<u>Difference</u>	<u>Percentage Change</u>
MINNESOTA				
Natural Resources	\$3.56	\$3.57	\$0.01	0%
Parks and Recreation	3.03	4.74	1.71	56
Sewerage	6.27	4.21	(-2.06)	(-33)
Solid Waste Management	<u>0.85</u>	<u>2.50</u>	<u>1.65</u>	<u>193</u>
Total	\$13.71	\$15.01	\$1.30	9%
UNITED STATES				
Natural Resources	\$3.52	\$2.70	\$(-0.82)	(-23)%
Parks and Recreation	2.61	3.25	0.64	24
Sewerage	3.67	4.20	0.53	15
Solid Waste Management	<u>1.79</u>	<u>2.49</u>	<u>0.70</u>	<u>39</u>
Total	\$11.58	\$12.64	\$1.05	9%

Source: U.S. Census Bureau.

crease in hazardous waste cleanup activities, as well as growth in recycling. In addition, some local governments in Minnesota are now operating waste incineration plants.

FINANCING

State and local governments have significantly increased the share of environmental and natural resource expenditures financed by fees. From 1977 to 1992, the inflation-adjusted amount of fees per capita collected for these activities increased 149 percent in Minnesota and 136 percent nationwide. During this same period, overall spending per capita on environmental and natural resource programs increased 12 percent in Minnesota and 28 percent nationally. As a result:

- **There has been a dramatic increase in the share of environmental and park spending financed by fees.**

Table 10.3 shows that the share of Minnesota's expenditures financed by fees grew from 19 percent in 1977 to 42 percent in 1992. Similarly, the share financed by fees increased from 24 percent to 45 percent nationwide. In Minnesota, fees collected for solid waste management increased the fastest, growing 651 percent per capita after adjusting for inflation.

The increase has been dramatic in all categories except natural resources, which has seen only a slight increase in the share of spending financed by fees. In Minnesota, the share financed by fees rose from 23 percent to 67 percent for sewerage, and from 41 percent to 72 percent for solid waste management. The share of parks and recreation spending financed by fees increased from 16 percent to 28 percent.

Fees financed an increased share of spending.

Table 10.3: Share of Environmental and Natural Resource Spending Financed by Fees and Charges, Minnesota and the United States, 1977 and 1992

	Minnesota		United States	
	1977	1992	1977	1992
Natural Resources	10%	11%	13%	14%
Parks and Recreation	16	28	17	24
Sewerage	23	67	35	75
Solid Waste Management	41	72	27	53
Total	19%	42%	24%	45%

Source: U.S. Census Bureau.

The trend in fees is open to different interpretations. On the one hand, most of the growth in spending per capita has been financed by increased fees rather than taxes. State and local government tax support for these programs, calculated on a per capita basis, has increased only slightly since 1977. On the other hand, this trend suggests that the ability to increase fees may drive future spending. Whether that tendency results in good public policy and sound programs is debatable.

NATIONAL COMPARISONS

Minnesota spends more than average on natural resources and parks and recreation.

Minnesota has generally spent more per capita on environmental and natural resource programs than other states. From 1972 to 1992, Minnesota spending per capita exceeded spending in other states by an average of 23 percent. Similarly, spending as a percentage of personal income was, on average, 27 percent higher in Minnesota than nationally over the same time period. Table 10.4 shows that:

- **In 1992, Minnesota state and local governments spent 19 percent more per capita on environmental and natural resource programs than the national average.**

Minnesota's spending was, however, very close to the 1992 national averages for sewerage and solid waste management. The main areas of higher than average spending were the categories of natural resources and parks and recreational facilities. Minnesota's spending per capita on parks and recreation was 45 percent above the national average, while spending per capita on natural resource programs was 33 percent above average.³

Figure 10.1 lists a number of factors which may help in understanding differences between Minnesota and other states, as well as spending trends. The list, which was compiled by Minnesota Planning, shows that Minnesota has the fourth largest

³ Similar conclusions can be drawn when comparing Minnesota spending as a percentage of personal income to national data.

Table 10.4 Environmental Expenditures per Capita, Minnesota and United States, 1992

	<u>Minnesota</u>	<u>United States</u>	<u>Difference (Dollars)</u>	<u>Percentage Above National Average</u>
Natural Resources	\$68	\$51	\$17	33%
Parks and Recreation	90	62	28	45
Sewerage	80	80	0	0
Solid Waste Management	<u>48</u>	<u>47</u>	<u>1</u>	<u>2</u>
Total	\$286	\$240	\$46	19%

Source: U.S. Census Bureau.

state park system and the ninth largest amount of park land per capita, as well as the largest state trail system and the largest system of scientific and natural areas. In addition, Minnesota sells more fishing licenses per capita and is home to more snowmobiles than any other state. Minnesota also has the second highest participation rate in outdoor wildlife-related recreation in the country and is also second in the number of recreational watercraft per capita. Minnesota's abundant outdoor resources and our relatively high interest in outdoor activities undoubtedly contribute to our higher than average spending on parks and natural resources.

SUMMARY

Minnesota's environmental and natural resource spending per capita increased 49 percent from 1972 to 1992 but grew only 9 percent relative to personal income. Half of the spending growth per capita came from parks and recreation spending, which rose 114 percent in constant dollars. Most of the rest of the growth was in the solid waste management category, which increased 300 percent. Growth in recycling, hazardous waste cleanup, and local government spending on waste incineration plants may explain the significant growth in solid waste management expenditures.

Very little of the increased growth in spending has been financed by increased state and local taxes. Increased fees and charges have paid for nearly all the growth between 1977 and 1992. Overall, the share of environmental and natural resource spending financed by fees rose from 19 percent in 1977 to 42 percent in 1992. Significant growth in the share paid by fees occurred in the categories of sewerage treatment, solid waste management, and parks and recreation. The growth in the natural resources category was minimal. The tendency to fund spending growth with fees has minimized the need to raise taxes but raises some concerns that new programs or program growth are being seriously considered only if they can generate additional fee revenues.

Minnesota has a large park system and a high participation rate in outdoor activities.

Figure 10.1: Environmental and Natural Resource Rankings and Trends

Natural Resources

- 67 state parks (1993); only three states had more park land (1993)
- Ranked 9th in state park land per 100 citizens (5.15 acres) (1993)
- Park attendance increased 48% from 1985 to 1989, to nearly 8 million in 1992
- Nation's largest system of Scientific and Natural Areas (1991)
- Largest state trail system in country (1992)
- 2nd highest amount of public land open to hunting (1993)

Tourism

- Ranked 19th in business receipts from tourism, and 21st in per capita business receipts from tourism (1990)
- Sold more fishing licenses per capita than any other state (1993)
- Has second highest rate of participation in outdoor wildlife-related recreation in the nation (1993)
- Ranks first in number of snowmobiles (1993) and second after Michigan in recreational watercraft per capita (1994)

Pollution Control

- Reduced air quality violations from 597 in 1971 to nine in 1991
- Went from 1,500 open dumps in 1967 to 49 permit-control landfills in 1992
- Adopted state hazardous waste cradle-to-grave regulatory system in 1979, ahead of the national program
- Eliminated tire dumps; received national innovation award for waste tire program

Source: Minnesota Planning.

Overall national spending trends have been similar to those in Minnesota. Increased use of fees has also been a national trend. Spending per capita grew 46 percent nationwide from 1972 to 1992, while spending grew 9 percent relative to personal income. Spending growth has been stronger in Minnesota in the categories of natural resources, parks and recreation, and solid waste management. Sewerage expenditures per capita, however, grew by more than 50 percent nationally, while declining in constant dollars in Minnesota.

Minnesota has generally spent more per capita on environmental and natural resource programs than other states. In 1992, Minnesota spent 19 percent more per capita on environmental and natural resource activities. Nearly all of the difference between Minnesota and other states was in spending on parks and recreation spending and natural resource spending, which were 45 percent and 33 percent above the national average respectively. Minnesota's large amount of park land and extensive trail system, as well as Minnesotans' high participation rate in outdoor activities, help to explain our higher spending in these areas.